PALM-TREEs

A Pan African And Transdisciplinary Lens on the Margins: Tackling the Risks of Extreme Events (palm-trees)

Strengthening Food Systems Resilience and Rural Livelihood Security in Kwara State

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EXECUTIVE SUMMARY

Food systems in Kwara State are increasingly under pressure from climate variability, economic instability, and social conflict. Evidence from the PALM-TREEs project shows that food systems in Kwara State are under severe stress, with 74% of households experiencing food insecurity. Climate shocks, weak value chains, and limited market access are reducing agricultural productivity, increasing food prices, and undermining rural livelihoods. Climate shocks, particularly drought and flooding, disrupt agricultural production, while weak value chains, post-harvest losses, and limited market access further undermine food availability and affordability. In addition, farmer–pastoralist conflicts exacerbate these challenges by disrupting production and resource access. Without urgent action, these trends will deepen poverty, increase social instability, and weaken the State's economic base. This policy brief draws on PALM-TREE's findings and relevant literature to propose a transition toward integrated, climate-resilient food systems that address production, processing, storage, distribution, and access.

This brief calls for a system-wide transformation of food systems, including:

- Climate-resilient agricultural production
- Investment in storage and processing infrastructure
- Strengthening market systems
- Integrating social protection

Methodology

This policy brief is grounded in findings from the PALM-TREEs (Pan-African and Transdisciplinary Lens on the Margins) project, conducted in Kwara State, which adopted a mixed-methods, transdisciplinary research approach. The study integrated physical climate analysis with food systems and livelihood assessments. Physical analysis involved satellite data (Sentinel-1, Landsat, MODIS), climate datasets (CHIRPS, ERA5), and drought indicators (SPI, SPEI, SMI) to assess climate variability and its impacts on agricultural production. The social science component engaged over 900 respondents across more than 500 communities, using surveys, focus group discussions, and participatory assessments. These methods provided detailed insights into food security conditions, income sources, production systems, and coping strategies. The study also employed integrated data analysis, linking climate risks with food systems dynamics, including production, market access, and household consumption patterns. This enabled a comprehensive understanding of how climate and socioeconomic factors interact to influence food security. This policy brief synthesizes these empirical findings and complements them with national and global literature to develop policy-relevant recommendations.

Policy Context

Food systems policy in Nigeria has historically focused on increasing agricultural production through input support, extension services, and investment in staple crops. While these interventions have contributed to improvements in food availability, they have not adequately addressed the broader structural challenges affecting food systems, including climate variability, value chain inefficiencies, and market constraints (Federal Ministry of Agriculture and Rural Development [FMARD], 2016). In Kwara State, food systems remain highly dependent on rain-fed agriculture, making them vulnerable to climate shocks such as drought and flooding. Increasing climate variability is disrupting production cycles, reducing yields, and increasing uncertainty for farmers (IPCC, 2022).

At the same time, structural weaknesses persist across the food value chain. Storage and processing infrastructure are underdeveloped, leading to significant post-harvest losses. Market systems are inefficient, with limited access to price information and weak linkages between producers and consumers.

Another critical dimension is the growing incidence of farmer–pastoralist conflict, which affects access to land and water resources. Climate change exacerbates these conflicts by intensifying competition for scarce resources (World Bank, 2021). Institutionally, food systems governance is fragmented across multiple sectors, including agriculture, commerce, rural development, and social protection. This fragmentation limits coordination and reduces policy effectiveness. The PALM-TREEs findings reinforce these challenges, highlighting widespread food insecurity and the need for integrated approaches to food systems resilience.

Key Issues and Evidence

The PALM-TREEs study reveals a deeply concerning food security situation in Kwara State. Approximately 74% of households reported experiencing food anxiety, including concerns about food availability, quality, and affordability.

Food insecurity is closely linked to income instability, with many households reporting unreliable income sources. Climate shocks such as drought and flooding significantly reduce agricultural output, which is the primary source of income for rural populations.

Crop losses are widespread, with drought affecting soil moisture and plant growth, while flooding damages crops and farmland. Livestock losses further reduce food availability and income.

Post-harvest losses are significant due to inadequate storage and processing infrastructure. A substantial proportion of agricultural produce is lost before reaching markets, reducing effective food supply and increasing price volatility.

Market access is also constrained by poor infrastructure and limited integration into value chains. Farmers often sell produce at low prices due to lack of bargaining power and limited access to markets.

The interaction between climate shocks and conflict further exacerbates food insecurity. Competition for land and water resources increases tensions between farmers and pastoralists, leading to disruptions in production and displacement.

These findings are consistent with broader evidence showing that climate change and conflict are major drivers of food insecurity in sub-Saharan Africa (IPCC, 2022; World Bank, 2021).

Policy Implications

The findings underscore the need to fundamentally rethink food systems policy in Kwara State. First, food security must be addressed as a systems issue rather than a production problem. Increasing agricultural output alone will not be sufficient if losses, inefficiencies, and market constraints persist.

Second, the strong linkage between climate variability and food insecurity implies that food systems policy must be climate-responsive. This includes promoting climate-resilient crops, improving water management, and supporting adaptive farming practices (FAO, 2013).

Third, addressing post-harvest losses and value chain inefficiencies is critical. Investments in storage, processing, and transportation infrastructure can significantly improve food availability and stabilise prices.

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Fourth, the interaction between climate and conflict highlights the need for integrated approaches that address resource governance and conflict management. Food systems resilience cannot be achieved without addressing underlying social tensions.

Fifth, income diversification is essential for reducing vulnerability. Supporting alternative livelihoods will reduce dependence on climate-sensitive agriculture.

Finally, improving coordination across sectors is critical for effective policy implementation.

Priority Policy Recommendations

1. Develop a State Food Systems Resilience Strategy (SFSRS)

Specific Actions

- Within 3 months, mandate the Ministry of Planning & Economic Development to lead development of the SFSRS.
- Establish a State Food Systems Task Force comprising the Ministry of Agriculture, the Ministry of Commerce, the Ministry of Rural Development, the Ministry of Women Affairs, and the State Emergency Management Agency (SEMA)
- Conduct a rapid food systems diagnostic (production, markets, nutrition, risks).
- Produce a 5-year strategy (2026–2030) with clear targets:

2. Promote Climate-Resilient Agricultural Production

Specific Actions

Crop Systems

- Distribute drought- and flood-tolerant seeds (maize, rice, cassava) to at least 50,000 farmers annually
- Partner with research institutes (e.g., IITA, NCRI) for seed supply

Irrigation

- Develop cluster irrigation schemes in 8 high-priority LGAs (e.g., Edu, Patigi, Kaiama)
- Install 1,000 solar-powered irrigation pumps over 2 years

Extension

- Train all extension agents in climate-smart agriculture within 12 months
- Deliver seasonal advisory bulletins (SMS + radio) before each planting season

Responsible MDAs

- Ministry of Agriculture (Lead)
- Ministry of Water Resources
- Kwara ADP

3. Invest in Post-Harvest Infrastructure and Value Addition

Specific Actions

Storage

- Construct:
  - 1 central warehouse per senatorial district (3 total)
  - 10 community-level aggregation/storage centres per year
- Introduce warehouse receipt system pilots in 2 LGAs

Processing

- Establish agro-processing hubs for:
  - Rice (Edu/Patigi axis)
  - Cassava (Ifelodun/Offa axis)

Loss Reduction

- Train 20,000 farmers annually on post-harvest handling
- Distribute improved storage bags (e.g., hermetic bags)

4. Strengthen Market Systems and Value Chains

Specific Actions

Infrastructure

- Rehabilitate **at least 200 km of rural feeder roads** annually
- Prioritise roads linking production clusters to major markets

Market Access

- Launch a Kwara Market Information System (KMIS):
  - Weekly price updates via SMS and radio
  - Digital platform for traders and farmers

Aggregation

- Support formation of commodity-based cooperatives (rice, maize, cassava)
- Facilitate contract farming agreements with

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private buyers

Responsible MDAs

- Ministry of Works
- Ministry of Commerce
- Ministry of Agriculture

5. Address Climate–Conflict Nexus

Specific Actions

Resource Management

- Map and demarcate grazing corridors and farming zones in conflict-prone LGAs
- Promote integrated crop–livestock systems

Conflict Resolution

- Establish LGA-level Peace Committees (farmers + pastoralists + traditional leaders)
- Train local mediators in conflict management

Land Use Planning

- Develop State Land Use Plan within 12 months
- Digitize land records and access systems

Responsible MDAs

- Ministry of Agriculture
- Ministry of Local Government
- Office of the Governor (Security Desk)

6. Promote Livelihood Diversification

Specific Actions

Non-Farm Opportunities

- Support 5,000 rural youth annually with:
  - Agro-processing businesses
  - Rural transport services
  - Small-scale enterprises

Skills Development

- Establish LGA-level vocational training centres
- Provide training in:
  - Agro-processing
  - ICT
  - Trades (mechanics, tailoring, etc.)

7. Integrate Social Protection into Food Systems

Specific Actions

Safety Nets

- Expand cash transfer programmes to cover 100,000 vulnerable households
- Link beneficiaries to food production or livelihood programmes

Shock Response

- Establish Food Emergency Response Mechanism:
  - Triggered by drought/flood alerts
- Pre-position food stocks in 3 strategic locations

Nutrition

- Scale up school feeding programmes using local produce
- Promote household nutrition gardens

Responsible MDAs

- Ministry of Women Affairs & Social Development
- SEMA
- Ministry of Health

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