

# Evidence Brief

## Strategy to enhance food security, resilience, and drought Management in ASAL regions of Kenya

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### Executive Summary

Kenya's arid and semi-arid lands (ASALs), which comprise over 89% of the country's landmass, are increasingly affected by climate change-induced droughts, erratic rainfall, and environmental degradation. These regions, home to millions of Kenyans who rely on pastoralism and rain-fed agriculture, face heightened food insecurity and disruptions to their livelihoods. This policy brief synthesises recent research and proposes strategic recommendations to enhance food security and resilience in these vulnerable areas. It emphasises the need for an integrated policy framework that mainstreams climate resilience, promotes gender inclusivity, invests in sustainable land and water management, and strengthens early warning and social protection systems. The brief outlines actionable recommendations for government, development partners, and civil society actors to work together to build long-term resilience and inclusive growth in Kenya's ASAL regions.

### Key Messages

- > Achieving food security and climate resilience in Kenya's ASALs demands contextualised evidence-informed, and integrated policy interventions.
- > Efforts must incorporate gender-sensitive planning and inclusive governance frameworks to address the complex social-ecological realities of ASAL communities.
- > Strengthened multi-sectoral partnerships, sustainable land and water management practices, and improved early warning systems are crucial for mitigating the impacts of recurrent droughts and food insecurity.

## Background

Kenya's ASALs, which cover approximately 89% of the country, are inhabited by about 30% of the country's population [1-3]. These regions are characterised by low and erratic rainfall, limited water resources, and fragile ecosystems, making them highly vulnerable to drought and food insecurity [4]. Many communities in the ASALs heavily depend on agriculture and livestock for their livelihoods, further exacerbating the risks posed by environmental instability [5].

The challenges faced by these regions are compounded by climate change as it leads to increased temperatures, changing rainfall patterns, and more frequent and severe droughts [6,7]. These climatic changes have a profound impact on agricultural productivity, water availability, and food production, posing significant threats to food security and the livelihoods of millions [8].

To address these challenges, Kenya has developed several policies and frameworks. One key policy is Sessional Paper No. 08 of 2012, the National Policy for the Sustainable Development of Northern Kenya and Other Arid Lands (Republic of Kenya, 2012), which aims to promote sustainable development in arid regions through investments in infrastructure, natural resource management, and community resilience [9].

Similarly, the National Drought Management Authority (NDMA) Act (2016) [10] established a robust institutional framework for drought risk management, and the Ending Drought Emergencies (EDE) Strategy provided a coordinated approach to reducing vulnerabilities in drought-prone areas. Climate adaptation is further supported by the National Climate Change Response Strategy (Republic of Kenya, 2010) and the Climate Change Act, 2016 (Republic of Kenya, 2016), which mandate mainstreaming of climate action in all government sectors and establish climate financing mechanisms [11,12].

Despite this strong policy base, several weaknesses limit their effectiveness. The ASAL Policy and EDE framework have been criticised for weak institutional coordination, insufficient funding, and lack of harmonisation with county-level development plans. Moreover, these policies often lack integration of gender-sensitive approaches, overlook the adaptive strategies of pastoralist communities, and underutilise

indigenous knowledge systems. The disjointed nature of water, agriculture, and disaster risk management policies further undermines systemic resilience efforts [13].

This policy brief aims to identify and promote evidence-informed, context-responsive policy options for enhancing food security and climate resilience in Kenya's ASALs. It seeks to address gaps in policy implementation by synthesizing practical strategies, drawn from national and global experiences, that can strengthen institutional coordination, integrate gender and indigenous knowledge, improve sustainable land and water management, and enhance early warning and social protection systems.





## Methodology

Systematic searches of academic databases and key grey literature sources identified 108 documents, including the Food and Agriculture Organization (FAO), International Food Policy Research Institute (IFPRI), World Bank, National Drought Management Authority (NDMA), and Kenya's national repositories. Out of the initial pool, 12 peer-reviewed and relevant grey literature sources from the period 2014 -2024 were selected for indepth analysis based on their relevance, methodological rigor, and geographic applicability to ASAL contexts.

The search was guided by the PICO framework, focusing on ASAL households, resilience, and food security interventions, as well as outcomes related to adaptive capacity and livelihood stability. Keywords included food insecurity, drought, resilience, water scarcity, indigenous knowledge, gender equality, policy frameworks, and sustainable agriculture. The synthesis triangulated academic findings with national policies, programme evaluations, and local studies to generate actionable, evidence-informed policy options grounded in current climate realities and implementation challenges.

A standardized tool was used to extract information on study characteristics, interventions, key findings, and their relevance to food security, resilience, and drought management in Kenya's ASAL regions. The findings were thematically analyzed and narratively synthesized to produce actionable recommendations in line with Kenya's policy priorities and programmatic needs.

## Key Findings

This evidence synthesis identified several context-specific strategies that can enhance food security and climate resilience in Kenya's ASALs. Efficient water management emerged as a critical area, with policy emphasis needed on water harvesting and storage systems, efficient irrigation technologies, and the promotion of water-saving practices [14]. Investing in water infrastructure and improving access to safe and reliable water sources is also essential for enhancing agricultural productivity and promoting community well-being [15]. Ensuring food security in ASALs, however, requires more than water interventions; it demands an integrated policy approach that accounts for the complex interplay between climate change, agricultural practices, water resources, and socio-economic vulnerabilities [16].

One of the most pressing policy gaps is the underutilisation of gender-sensitive approaches and indigenous knowledge systems. Many interventions fail to engage women meaningfully or incorporate local pastoralist knowledge, leading to low contextual relevance, weak community ownership, and poor sustainability outcomes [17, 18]. Integrating these perspectives is essential for designing effective and inclusive adaptation strategies.



## Recommendations

- > The Ministry of Environment and Forestry, National Climate Change Directorate, ASAL Secretariat, and Council of Governors should strengthen cross-sectoral coordination and implementation of climate resilience policies to ensure coherent action across agriculture, water, and disaster risk management.
- > The Ministry of Water, Sanitation and Irrigation should invest in climate-smart water infrastructure, such as water harvesting systems and efficient irrigation technologies, to support agricultural productivity and enhance community resilience.
- > The Ministry of Agriculture and Livestock Development should promote agroecological practices, including drought-resistant crops and conservation agriculture, to sustainably improve food security in ASAL areas.
- > The ASAL Secretariat and NDMA should strengthen community-based early warning systems and expand coverage of social protection mechanisms such as cash transfers and climate insurance.
- > The Kenya Institute for Public Policy Research and Analysis (KIPPRA) and Ministry of Devolution and ASALs should integrate indigenous knowledge and gender-responsive approaches into ASAL resilience policies and programmes.
- > The Ministry of Planning and the NDMA should enhance monitoring and evaluation systems to improve data-driven decision-making, ensure accountability, and facilitate adaptive management of resilience programmes.

## Conclusion

Achieving food security and resilience in Kenyan ASAL areas is urgent and complex, given the region's high vulnerability to climate change, environmental degradation, and socio-economic marginalisation. The evidence synthesis reveals that, despite the existence of robust national policies, persistent implementation gaps, fragmented institutional coordination, and underutilisation of local knowledge continue to hinder progress.

Sustainable solutions should embrace integrated, gender-responsive, and locally grounded strategies. Investments in sustainable land and water

management, inclusive policy processes, community-based early warning systems, and strengthened local capacity offer promising pathways to build long-term resilience. Aligning the strategies in the recommendations with national and county planning frameworks and ensuring sustained financing and accountability mechanisms is key to promoting lasting outcomes. Acting on the recommendations presented can support Kenya in laying the foundation for more resilient ASAL communities and advance its broader development and equity goals.

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