Towards Anticipatory Disaster Risk Financing and Index Insurance Mechanisms for Resilience Building in Eastern Africa

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IGAD Climate Prediction and Applications Centre (ICPAC)

Corresponding Author: geoffrey.sabiiti@igad.int

Reviewer: Philemon Chelanga - Agency for Inclusive Innovations & Development (AIID)

Executive Summary

Eastern Africa faces recurrent droughts, floods, and heat extremes that interact with fragility, conflict, displacement, and poverty. This article argues for integrated anticipatory risk governance through Anticipatory Action (AA), climate and disaster risk financing and insurance (CDRFI), and stronger institutions. When early warning, pre-planned action, and pre-assigned finances are integrated, countries can reduce losses, protect livelihoods, lower emergency-response costs, substantially reduce humanitarian needs and their impacts, and strengthen long-term resilience.

1. Introduction and Context

Across Eastern Africa, climate shocks linked to natural hazards have significantly increased in both frequency and intensity, compounding existing socio-economic and environmental vulnerabilities. Many areas now experience greater rainfall and temperature variability associated with recurrent severe droughts, floods, landslides, and heatwaves. This was evident during the 2021-2022 prolonged drought in the Horn of Africa and the March-May 2024 intense rainfall and widespread flooding in parts of Kenya and Uganda.

The February to March 2026 rains have broken record highs in most parts of Kenya, Ethiopia, and Uganda ahead of the planting window causing widespread flooding and disruption of socio- economic activities. These climate hazards interact with other stressors, including conflict, displacement, climate-related epidemics and pandemics, weak institutions, environmental degradation, and chronic poverty, especially in fragile and conflict-affected contexts in parts of Kenya, South Sudan, and Sudan.

Acute disasters related to droughts, floods and storms often lead to post-traumatic stress disorder (PTSD), grief, and acute stress reactions. Prolonged crises from drought, flood, and food insecurity can trigger chronic anxiety, depression, and hopelessness, while displacement and social disruptions often result in family stress, domestic violence, and substance misuse

Pastoral and agro-pastoral systems and communities across the Horn of Africa's semi-arid to arid lands remain at the frontline of these climate shocks, resulting in:

- Reduced livestock productivity and low crop yields.
- Food insecurity and livelihood losses.
- Resource conflicts and displacement.
- Increased cases of mental and psycosocial health[1]

Pastoral and agro-pastoral households, institutions, and regional systems need climate information, risk-informed policy, and coordinated governance to make timely decisions that protect livelihoods and food security. Despite growing climate risks, early warning systems remain under-utilized, and institutional coordination at national and regional levels remains limited (WMO, 2023; UNFCCC, 2023).

Climate shocks are no longer isolated emergencies; they function as systemic risks, undermining food systems, destabilizing livelihoods, intensifying humanitarian crises, and eroding development gains.

1. The impact of climate shocks exposure to depressive and suicidal ideations among female population in Kilifi rural areas, Kenya.

https://www.sciencedirect.com/science/article/pii/S235239642500218X#:~:text=There%20is%20evidence%20that%20climate,depressive%20and%20suicidal%20behavioural%20outcomes

Traditional disaster response mechanisms remain heavily dependent on post-crisis emergency aid, which is often slow, costly, and insufficient relative to the scale of need. Recent regional climate assessments and disaster risk analyses consistently show escalating hydro-meteorological extremes (Figure 1) and compounded vulnerability dynamics across Eastern Africa (WMO, 2023; IPCC, 2022; UNDRR, 2023).

Recent loss data illustrates a high scale of impacts. In the Greater Horn of Africa, pastoral communities lost more than 13 million livestock between late 2020 and the end of 2022 due to prolonged drought (FAO, 2023). African countries are also estimated to lose 2-5% of GDP annually to climate extremes, with some governments diverting up to 9% of public budgets to climate response (WMO, 2023).

In 2025, around US $7 billion was required for 34 Million targeted people in Eastern Africa, yet only 34% was funded (OCHA, 2025).

Despite limited concrete assessments across Eastern Africa there is a staggering protection gap of over 80% protection gap with notable variations across sub-regions showing that the region needs US$ 27 million per year. These trends support a shift toward blended, anticipatory pre-financing, and risk management as a panacea.

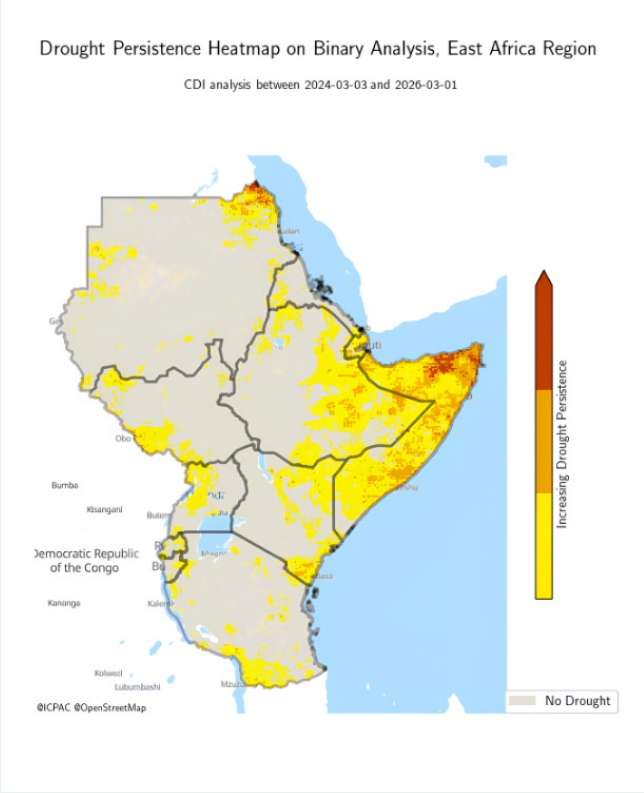
2. Moving from Reactive Response to Anticipatory Disaster Risk Financing and Management

Traditionally, disaster responses in Eastern Africa have relied heavily on post-crisis mobilization. While life-saving, this model is increasingly costly, unsustainable, and insufficient relative to the scale of climate volatility witnessed in fragile and conflict affected areas of Eastern Africa.

A paradigm shift now emphasizes anticipatory risk financing and management, which combines early warning, pre-arranged finance, and pre-agreed early actions. AA is being mainstreamed across disaster risk management value chains in Eastern Africa to ensure lives are protected, investments are safeguarded, and development gains are sustained. AA ensures pre-agreed interventions are implemented before a forecasted hazard occurs, based on scientific trigger thresholds. AA depends on three core components namely; reliable early warning systems; pre-agreed early actions; and pre-arranged financing (Figure 2).

AA interventions may include:

- Early cash transfers before drought or flood impacts intensify.
- Livestock support (vaccination, feed, destocking).
- Pre-positioning of food and medical supplies..



A drought persistence heat map showing intensity of drought across the East Africa Region for the monitoring period between 3rd Dekad March 2024 and 1st Dekad March 2026. (Source: EADW)

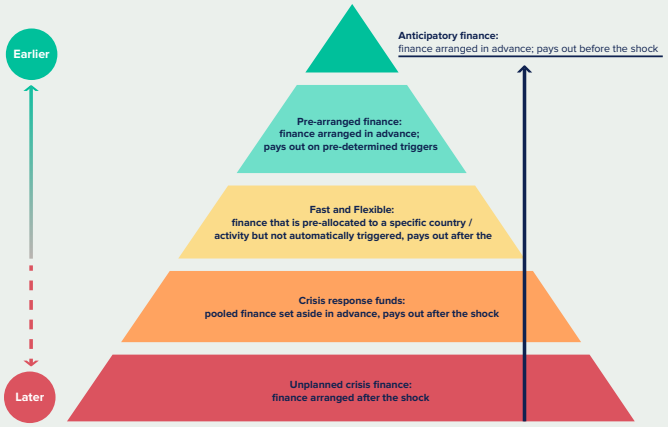


Figure 2: Anticipatory Financing Triangle (Source : welthungerhilfe.org)

Anticipatory financing focuses on humanitarian interventions taken before a predicted hazard hits to mitigate its impact. Anticipatory Actions are proactive, faster, and more efficient than traditional post-disaster responses. It requires forecast-based triggers (early warning), pre-arranged financing, pre-agreed action plans (early action). Benefits include speed & efficiency, systemic shift, locally-led action that promote ownership and catalyze investment and localization.

Evidence shows that when AA is linked to early warning and pre-arranged financing, outcomes include reduced livelihood losses, lower humanitarian needs and costs, faster response times, and improved food security (IFRC, 2020; OECD, 2023; OCHA, 2023}. Scaling anticipatory risk financing, nonetheless requires sustained investment in impact based forecasting, planning, and financing systems.

The integrated system approach will provide timely and predictable finance that can significantly reduce humanitarian needs, protect livelihoods, stabilize public finances, build community resilience and safeguard development gains (OECD, 2023; ARC, 2024; UNDRR, 2023}.

The integrated mechanism proposed in this article calls for governments and development partners to advance financial preparedness and anticipatory risk governance through three mutually reinforcing mechanisms: Anticipatory Action (AA), climate and disaster risk insurance, and disaster risk financing.

Integrated, these can attract significant finances from multilateral, public and private sources towards comprehensive DRR and strategic resilience investment in Eastern Africa.

Inputs, activities and outcomes for desired impact are highlighted in the theory of change (Figure 3).

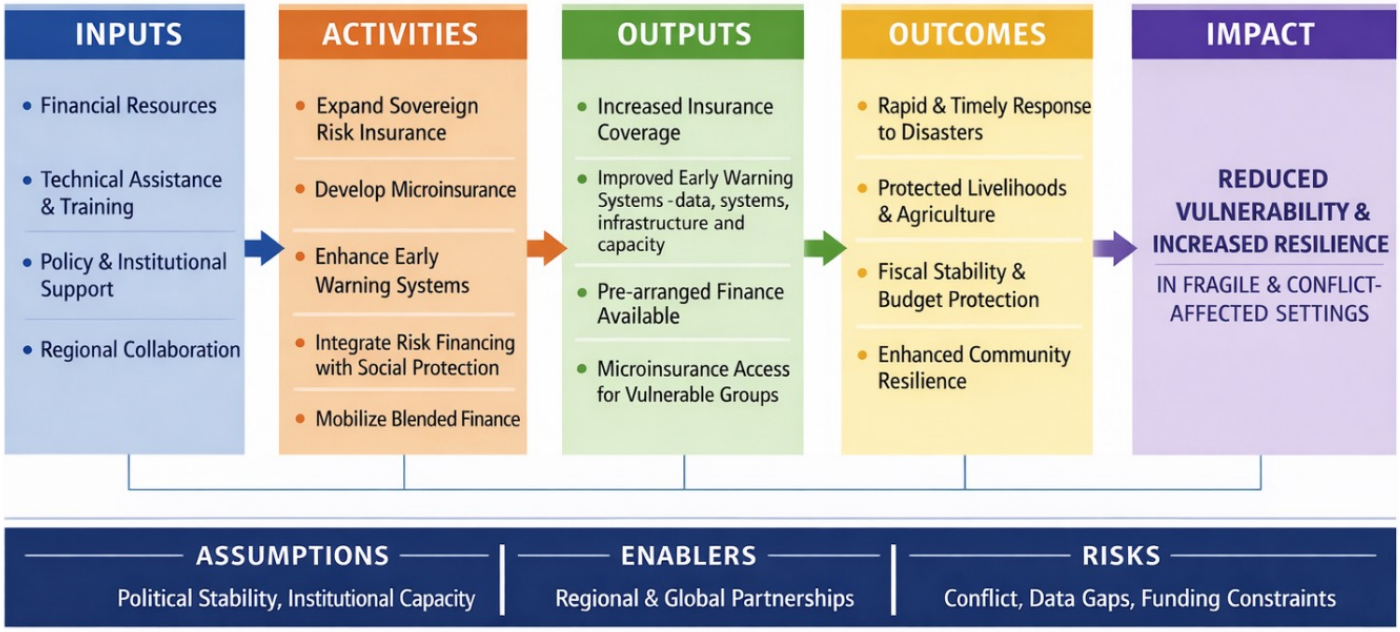


Figure 3: Theory of Change for integrated anticipatory disaster risk financing and management.

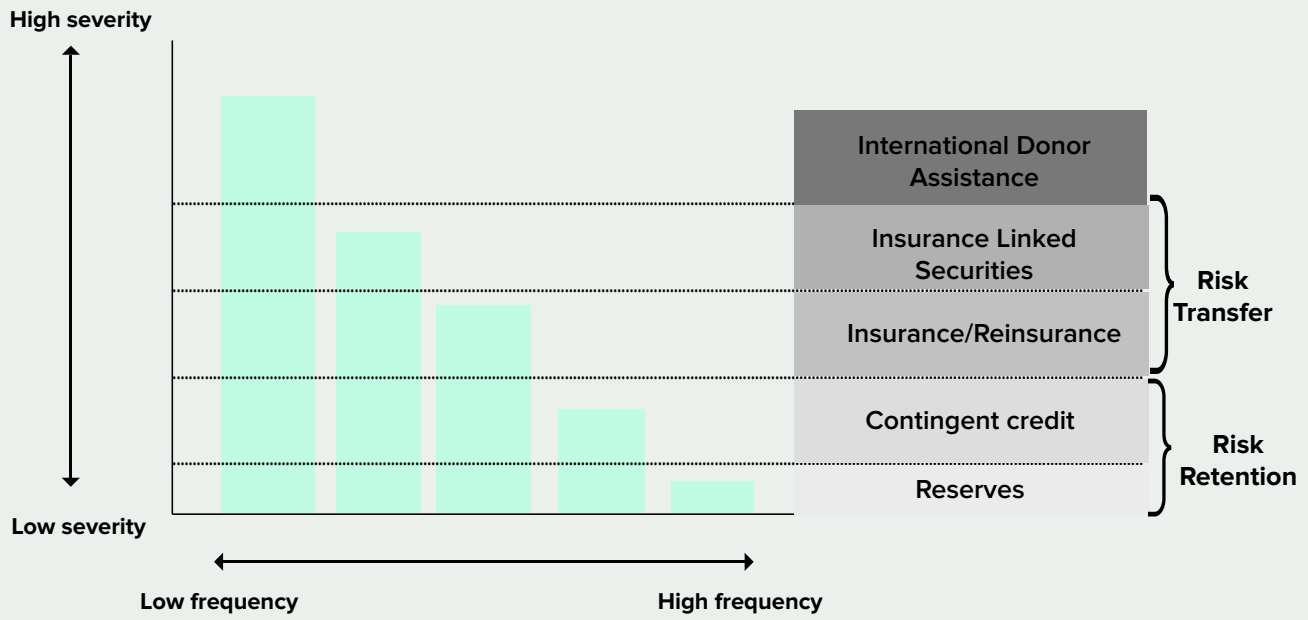


Figure 4: Risk Layering and Disaster Financing Strategy

3. Climate and Disaster Risk Financing and Insurance as Enablers for DRR and Resilience

To finance action before or immediately after climate shocks, CDRFI is essential for rapid access to funds. Core instruments include:

- Sovereign parametric insurance (payouts triggered by predefined climate indicators).
- Regional risk pooling (risk sharing across countries to lower premiums).
- Contingency funds and emergency credit.
- Micro-insurance and livelihood protection.
- DRR and resilience investments (e.g., water systems and climate-resilient agriculture).

When integrated with AA, these tools enable forecast-based financing that can be triggered before disaster impacts peak (ARC, 2024; World Bank, 2021; GFDRR, 2022).

Furthermore, it bridges the humanitarian and development divide (Figure 4).

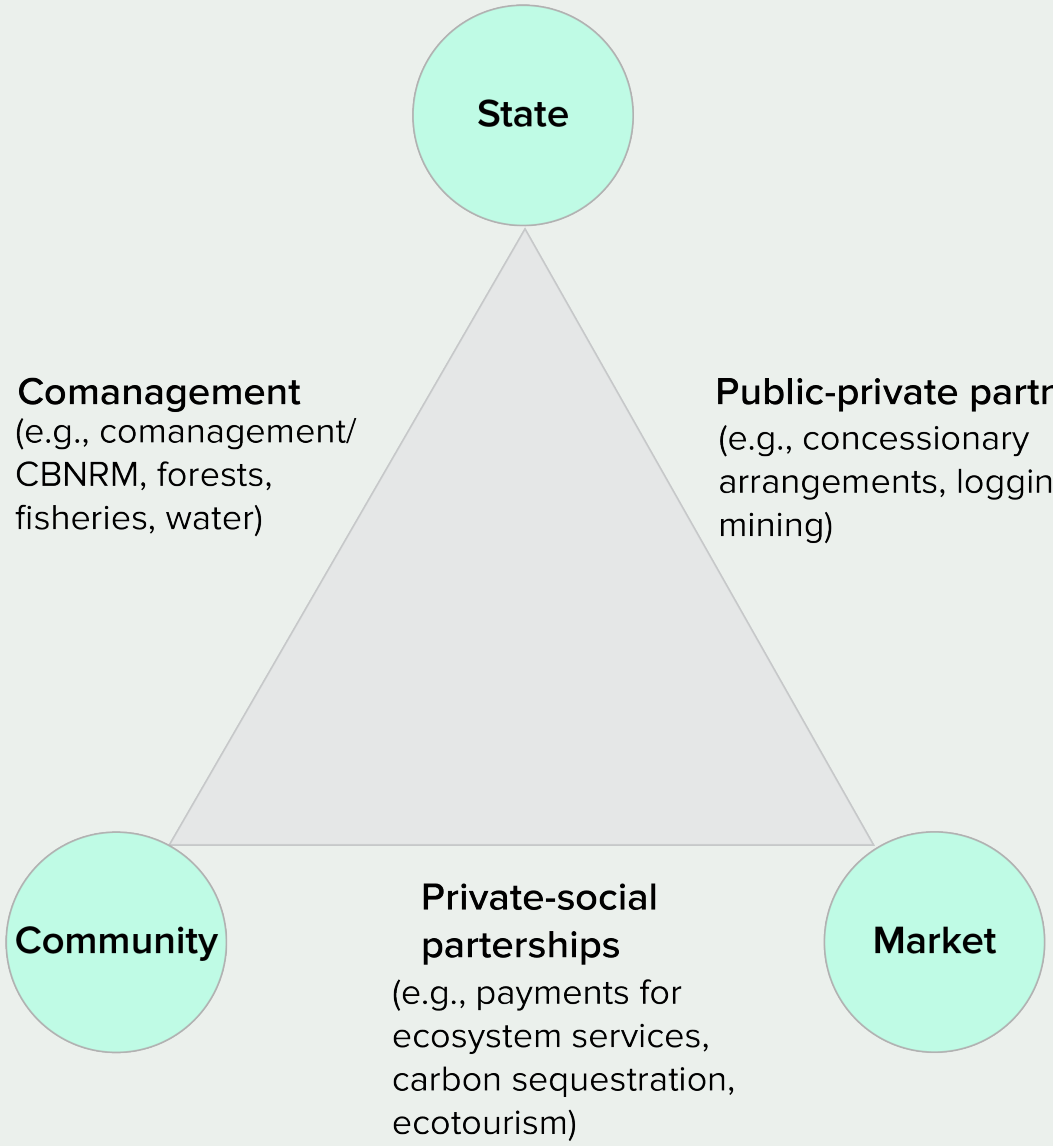


Figure 5:Institutionalization and Operationalization of Disaster Risk Governance

Institutionalization and operationalization require embedding disaster risk reduction (DRR) into permanent legal, policy, and administrative frameworks and implementing these frameworks through actionable, coordinated, and funded initiatives including public and private sector partnership. Effective governance moves beyond reactive, ad-hoc responses toward proactive, multi-sectoral strategies that align with the Sendai Framework's emphasis on reducing existing risk and preventing new ones. Strengthened institutions and coordination mechanisms at regional and national levels are required..

4. Regional Institutional Architecture

The transition toward anticipatory risk management in Eastern Africa is supported by institutions such as African Risk Capacity, the African Development Bank, IGAD Climate Prediction and Applications Centre (ICPAC), the World Bank, and the United Nations Office for the Coordination of Humanitarian Affairs (OCHA), which provide technical, financial, and policy support (ARC, 2024; AfDB, 2022; IGAD, 2024, World Bank, 2021).

Implementation in fragile settings remains difficult and requires multi-stakeholder participation (Figure 5) due to weak capacity, fiscal stress, governance disruptions, data gaps, and access constraints (World Bank, 2020; UNDP, 2022).

Still, early action in these contexts can prevent humanitarian escalation (OECD, 2023; OCHA, 2023). Progress remains uneven, and key barriers to scale include:

- Inadequate climate data infrastructure and data analytics for insurance.
- Absence of a dedicated regional facility to accelerate implementation.
- Limited insurance market development;
- Low financial inclusion.
- Fragmented humanitarian and development financing.
- Limited technical capacity to design climate risk insurance products.
- Limited incentives to derisk private investments targeting fragile settings.
- Policy and regulatory rigidity constrains the development and scaling of climate-smart innovations.

5. How Anticipatory Action Strengthens Disaster Risk Financing and Management

AA strengthens climate and disaster risk financing by shifting interventions from ex-post recovery toward ex-ante prevention and impact reduction. Forecast triggers enable rapid financing for early intervention. This yields measurable benefits, including reduced disaster losses, lower response costs, improved fiscal stability, protection of development investments, and stronger household resilience (IFRC, 2020; GFDRR, 2022; World Bank, 2021). Insurance and contingency finance provide liquidity, while AA guides when and how funds are used.

Under conservative-to-moderate implementation assumptions, integrated AA and CDRFI systems could generate approximately US$ 1.5-6.0 Billion in annual avoided losses and response-cost savings across Eastern Africa, with higher gains possible where coverage, trigger quality, and delivery capacity are strong. This estimate is consistent with the region's high climate-loss burden (often reflected in multi-percentage-point GDP impacts), large humanitarian financing gaps, and evidence that earlier action lowers the cost of late emergency response (WMO, 2023; OCHA, 2025; OCHA, 2023; GFDRR, 2022).

6. Potential Barriers to Scaling Anticipatory Disaster Risk Financing and Management

Without institutional strengthening, financing alone cannot deliver DRR and resilience. Priority barriers include:

- Limited institutional capacity to operationalize forecast- based systems.
- Limited integration between humanitarian and government financing.
- Weak climate data and modelling infrastructure in some countries.
- High insurance costs, regulatory gaps, and low public trust.
- Low access and buy-in for insurance premiums.

7. Policy Priorities for Anticipatory Disaster Risk Financing and Management in Eastern Africa

To strengthen DRR and resilience in fragile and conflict-affected settings, the following priorities are identified:

- Institutionalize AA within national disaster risk management and humanitarian coordination frameworks.
- Expand sovereign and regional risk insurance through pooled mechanisms and premium support.
- Use climate data to develop verifiable mechanisms for scaling social protection.
- Scale micro-insurance and financial inclusion for vulnerable households and small enterprises.
- Align humanitarian and development finance through forecast-based financing.
- Strengthen governance and public financial management to ensure transparent and accountable use of anticipatory funds.

8. Conclusion

Anticipatory climate and disaster risk financing, insurance, and management in Eastern Africa offers a paradigm shift from reactive crisis response to proactive risk governance. In fragile and conflict-affected contexts, this shift is particularly important.

Its effectiveness, however, depends on sustained institutional strengthening, regional cooperation, and integration across early warning, anticipatory action, financing, and response systems.

For Djibouti, Ethiopia, Kenya, South Sudan, Sudan, Somalia and Uganda scaling anticipatory risk financing and management is both a climate adaptation strategy and a foundation for long- term DRR and resilience, stability, environmental sustainability, and sustainable development.

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IGAD Climate Prediction & Applications Centre (ICPAC)
P.O. BOX 10304 - 00100 Nairobi, Kenya
Tel: 254-20-3514426

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