Advances and innovations in climate services for adaptation, the case of Eastern Africa

Enhance Multi-Hazard Early Warning Systems, Effective Climate Services and **Disaster Risk Management to inform Resilient Investment and Achieve Water GGAs**

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About ICPAC



- The IGAD Climate Prediction and Applications Centre (ICPAC) is a specialized Climate Centre of IGAD and designated RCC by WMO serving 11 countries in Eastern Africa.
- Provides climate services and applications such as DRR, water and food security.



• Established in 1989 as the Drought Monitoring Centre, Nairobi (DMCN), changed to IGAD Climate Prediction and Applications Centre (ICPAC) in 2007

• ICPAC is a WMO Regional Climate Centre (WMO-RCC) for Eastern Africa.

ICPAC Service and thematic areas





Water Resources

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Climate Information and Co-production

Definitions Climate Services

- Climate services are the provision and use of climate data, information, and knowledge to assist decision-making.
- Effective climate services will facilitate climate-smart decisions that will, for example, mitigate the impacts of climate-related disasters, improve food security and health outcomes, enhance water resources management, and bring better outcomes in disaster risk reduction.
- Effective climate services are the use of climate data and information to help people and \bullet organizations make decisions that support climate adaptation and mitigation. They can help people understand and respond to climate change, and can be used in many different ways, such as: Planning vaccination programs, Planting drought-resistant seeds, Establishing new renewable power plants, and Assessing sea level rise ipacts.

To be effective, climate services require:

- Appropriate engagement: Between the provider and recipient of the service
- Effective access: To enable inclusive communication and timely action
- Long-term climatic information: Used in planning to prevent maladaptation

Hazards and disasters in Eastern Africa





Flooding in EA due to Elnino and IOD conditions

2020/ 2022

2023

Persistent LaNina Conditions leading to longest drought duration over EA



Flood impacts



The Horn of Africa region is experiencing heavy downpours and floods linked to the El Nino weather phenomenon, killing dozens of people and causing large-scale displacement, including in Somalia, where the rains have destroyed bridges and inundated residential areas.

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Advances and innovations in early warning systems Introduction of objective climate forecast El-Nino forecast, advisories and preparedness

Advances and innovations in early warning systems

East Africa Hazards Watch

https://eahazardswatch.icpac.net

ICPAC

Advances and innovations in early warning systems

ICPAC regional multi-hazard early warning situation room

- Multi-Hazard monitoring center of ICPAC
- **Coordinate early warning information sharing** • with member state focal institutions
- Improvise indicators and thresholds for various hazards
- Capacity building on forecasting, hazard monitoring and anticipatory action
- **Supporting African Union Situation Room**

Advances and innovations in early warning systems

Impact Based Forecasting and Anticipatory Actions

- Advancing weather to impact forecast require data on \bullet exposure, vulnerability and impacts (loss and damage).
- Machine learning provides an opportunity to analyze and \bullet automate these processes.
- Provides an opportunity to define hazard scenarios and \bullet associated thresholds for activation of anticipatory actions.

Impact Based Forecasting – Disaster Risk Decision Analysis Tool

Advances and innovations in early warning systems Impact Based Forecasting and Anticipatory Actions

- Timely and actionable early warnings yield
- a substantial return on investment by
- preventing and mitigating potential
- damages of disasters.
- More investment and partnership are
- needed in expanding infrastructure,
- systems and capacity in the region and

Summary

- Climate change means unprecedented need for climate services
- There has been progress in Climate Services supporting climate action but big gaps remain
- Adaptation funding must be better informed by climate services

Thank you!

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