



# Towards Forecast based Preparedness Action (ForPac)

Photo by John Bundi-KRCS



**ICPAC**  
IGAD Climate Prediction  
& Applications Centre

# ForPac OVERVIEW

Droughts and floods remain a major threat to lives and livelihoods in sub-Saharan Africa due to the high exposure and vulnerability of populations. Existing early warning systems (EWS) are improving but remain insufficient. **ForPAC** aims to improve forecasts of extreme rainfall, flooding and drought, over to co-produce new forecast products over 'seamless' lead times (days to months) and improve the use of forecasts by integrating into operational Early Warning Systems (EWS) using a systematic anticipatory approach of Forecast based Action (FbA).

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## Drought Early Warning System (DEWS)

Kenya has a well developed DEWS which is largely based on real time monitoring data. ForPAC is exploring the potential for a more anticipatory and proactive DEWS using forecast information by providing tailored, timely information to inform key decision making processes.



## Flood Early Warning in Nairobi County and Nzoia River basin

Nairobi currently lacks historical flood risk information including flood hotspots, vulnerability and exposure, impacts, damages, costs, timely and reliable flood warnings at actionable lead time. There are currently no flood EWS and clear decision-making and preparedness action protocols. ForPAC will demonstrate the potential for flood risk mapping and forecasting in Nairobi, including guidance and recommendations for mandated agencies.

The **Nzoia River basin** lacks longer lead time forecasts, probabilistic flood forecasts and the existing flood forecasting model is not flexible for longer lead time and probabilistic forecasts. There is also a weak understanding of climate drivers of heavy rain and flood events for Nzoia. ForPAC will demonstrate the use of probabilistic flood forecasting over extended lead times.



## Kenya Red Cross Society risk management processes and systems

Internationally the Red Cross movement has been active in developing Forecast based Action initiatives and pilots. ForPAC is working closely with Kenya Red Cross Society to identify opportunities for improved forecasts and skill information to inform their risk management systems. These opportunities include Multi-Hazards Contingency Planning and Early Action Protocols (EAPs) for flood and drought to support release of funds from their DREF FbF fund.



## Support to Objective Forecasting

ForPAC works to improve the reliability of the forecasting methods by supporting comparative analysis of the skill and quality of dynamical forecasting systems, that form the basis of ICPAC seasonal objective forecast. Discussion of the skill of each model now forms a key part of the new procedure, employed 3 times a year, for preparing the seasonal forecast.

## Key Outputs

- Optimized multi-model skill assessment for ICPAC objective forecasting
- Improved forecast procedures based on improved knowledge on weather/climate predictability, new tools and products
- Improved anticipatory flood/drought EWS and risk management practices
- Kenya and East Africa tailored UK Met Office Global Hazard Map
- Strengthened partnerships to deliver climate services
- Findings on strengthening EWS in Kenya aim at being scaled-out to the rest of the region





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## Delivering Climate Services to the Greater Horn of Africa



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ForPac is funded by UKRI and DFID through the 'Science for Humanitarian Emergencies and Resilience' (SHEAR) Research Programme. Grant number: NE/P000673/1