POLICYBRIEF

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Unrelenting catastrophic droughts and successive failed rainy seasons in the Greater Horn of Africa

What can we do better to protect millions of smallholder farmers and livestock keepers from extreme weather and climate crisis?

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Summary

- The Greater Horn of Africa (GHoA) is one of the world's most negatively impacted regions by climatic extremes and changes affecting millions, including smallholder farmers and livestock keepers.
- Addressing the impacts of devastating extreme weather events, climate variabilities, and changes in GHoA requires strengthening Climate Information Services (CIS), including in terms of Anticipatory Action, Early Warning Systems (EWS), and preparedness and early action for climate-resilient development, among others.
- Part of the recommendations and policy-related solutions to the devastating extreme weather events and climate crisis calls for countries to shift from delayed silos and reactive emergency management to proactive responses through effective joint investment, adoption, and implementation of multi-hazard early warning for all initiatives and programs aimed at enhanced regional preparedness and early action by the GHoA countries and the international development partners.
- These include: *(i) Strengthening disaster risk knowledge and management, (ii) Enhancing infrastructure, human and technical capacity for observing, monitoring, analyzing, and forecasting extreme weather and climate variability-related hazards, (iii) Improving communication and dissemination for better access, uptake, and use of a multi-hazard early warning, and (iv) Enhancing preparedness and coordinated early action by building regional, national, and community-level response capabilities of the GHoA countries*.
- There is a clear and urgent need to protect the lives of millions of people, including smallholder farmers and livestock keepers, from extreme weather and the climate crisis in the GHoA region.
- National governments, regional climate centers, and international development partners should support the enhancement and sustainability of infrastructure, as well as human and technical expertise in the region to take advantage of the advances in science and technology (i.e., use of digital decision support tools, ICTs, and broadcast systems) to ensure the availability and accuracy of CIS and EWS for enhanced service delivery for all, preparedness and early action at the national and sub-national levels.

ACPC African Climate Policy Centre
WORLD METEOROLOGICAL ORGANIZATION
IGAD ICPAC
CGIAR | AICCRA Accelerating Impacts of CGIAR Climate Research for Africa

Figure 1. Back-to-back rainy season failure and catastrophic droughts in the Greater Horn of Africa (GHoA) caused livestock to succumb, hunger to soar, and malnutrition rates to rise. Courtesy of ICPAC/WFP/VoA, 2022.

Introduction

The sixth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC) confirms that the Greater Horn of Africa (GHoA) is one of the most adversely impacted regions on the planet by extreme weather events, climate variability, and change.

Temperatures in the region are rising, with increased warmer nights and more intense daily heat waves. Droughts have also become more common in terms of frequency, intensity, and geographical coverage. According to subsequent Greater Horn of Africa Climate Outlook Forum (GHACOF) statements, rainfall in the region has become increasingly erratic, causing seasonal deficits and/or catastrophic flooding, as observed recently in Somalia and Ethiopia. Multiple extreme weather conditions and climatic hazards are almost expected to occur concurrently, resulting in compounded risks cascading across socioeconomic sectors. Consequently, several areas in Kenya, Somalia, and southern Ethiopia were "extremely dry" during the course of the extended seasons and experienced sharp increases in acute food insecurity, malnutrition, human death, and loss of millions of livestock (OCHA, September 2022). Therefore, natural disasters of these scales are becoming the 'new normal' in the region. The 62nd GHACOF forecasts supported this assertion when it predicted the October to December 2022 rainy season to be failed for the fifth consecutive time.

What is concerning here is that the drought-stricken regions of the GHoA, which had experienced the longest drought in 40 years, are once again bracing for drier-than-usual conditions during June-to-September (JJAS) 2023 season, particularly in the north despite the seemingly positive impact of the

March-May 2023 rains. Consequently, Djibouti, Eritrea, central and northern Ethiopia, western Kenya, northern Uganda, and much of South Sudan and Sudan are expected to receive insufficient rainfall (below-average rainfall) until the end of the season (Figure 2).

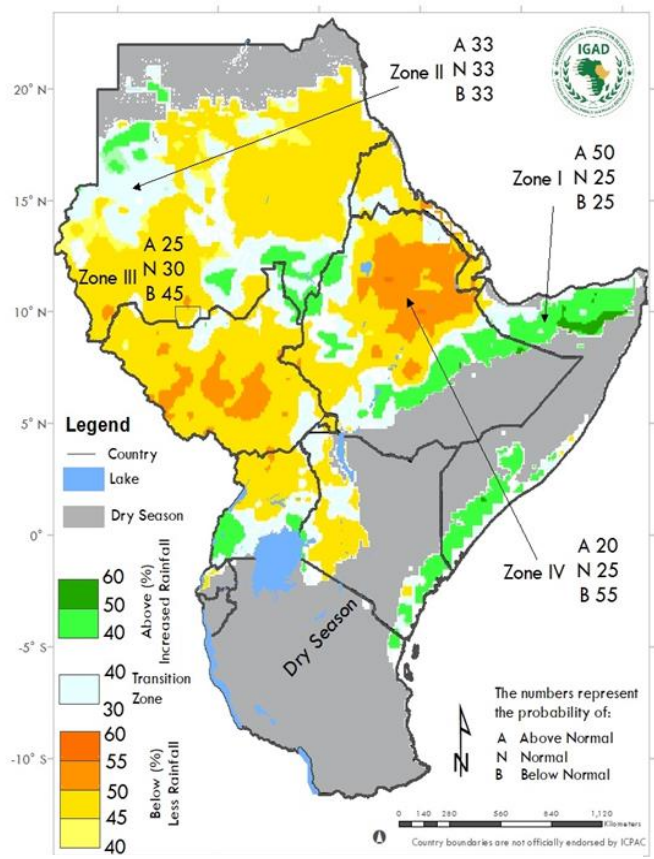

Figure 2. Probability forecast of mean surface temperature for June-to -September 2023. Courtesy of GHACOF 64.

The implications of drier-than-usual conditions are significant to the northern GHoA regions, as they received more than 50% of their annual rainfall between June and September. Depressed rainfall coupled with warmer-than-usual temperatures (e.g., Figure 3) is likely to affect crop and livestock productivity, with an increased risk of crop failure, a hastened decline in pasture and water availability, livestock death, and increasing food and nutrition insecurity in the region. The IGAD food insecurity overview brief also indicated that 55.45 million people were in IPC Phase 3 or above in seven of the eight IGAD member states except for Eritrea.

The State of the Climate in Africa Report 2022 (WMO, 2022) indicates that the 2021 long-term drought was disastrous enough to cause significant socioeconomic losses in the region, including reduced crop harvest, water scarcity, death of people and livestock, and unprecedented levels of malnutrition (Table 1).

The Intergovernmental Authority on Development (IGAD) also raised the alarm in April and May 2022 and predicted that over 50 million people in the region could, in one way or the other, suffer from acute food insecurity and advised member states to adopt "a no-regret strategy." The actual impacts of the unrelenting catastrophic droughts and successive failed rainy seasons in the GHoA, however, could go beyond the immediate and short-term effects to undermine the longer-term economic, environmental, and social gains. These unrelenting and recurrent catastrophic effects of the extreme events, if not averted, or if these climate crises have not been handled appropriately, the region will fall way short of fulfilling the UN's Sustainable Development Goals (SDGs), the Paris Agreement and Sendai targets and Africa's goals stated in its development blueprint to achieve inclusive and sustainable development (Agenda 2063 – The Africa We Want).

To respond to such challenges at the regional level, the IGAD revised its regional Disaster Risk Management (DRM) strategy to align it with the priorities and targets of the global Sendai Framework for Disaster Risk Reduction (SFDRR) 2015-2030 and the African Union Programme of Action. In December 2021, the IGAD also drafted a regional road map for Anticipatory Early Actions to ensure early warnings are effectively translated to preparedness and early actions through the development of Standard Operation Procedures at the national level and pre-financing of risk reduction measures based on the principle of impact-based forecasts and forecast based actions.

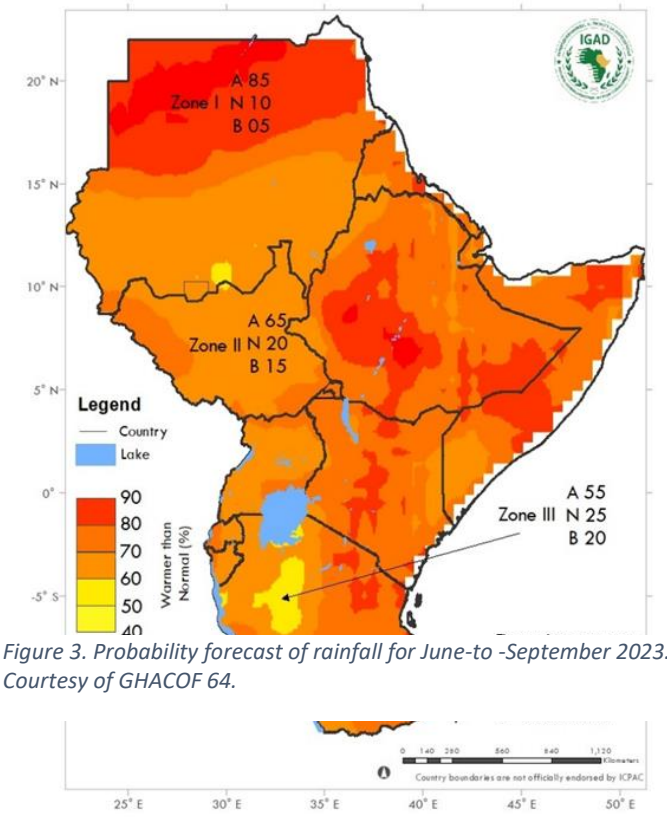

Figure 3. Probability forecast of rainfall for June-to -September 2023. Courtesy of GHACOF 64.

Furthermore, the IGAD Climate Projection and Application Centre (ICPAC), in collaboration with the Accelerating Impacts of CGIAR Climate Research in Africa (AICCRA) and other key partners, organized a "Joint Multi-stakeholder Anticipatory Action Workshop" on the sidelines of (GHACOF 64) in Ethiopia to establish a regional guiding framework for the implementation of Anticipatory Action and multi-sectoral and muti-hazard early warnings for enhanced preparedness and early action in member states.

This effort also aligns with the 'Early Warnings for All Initiative (EW4All)' – formally launched by the UN Secretary-General in November 2022 at the COP27 meeting in Sharm El-Sheikh – an initiative spearheaded by the World Metrological Organization (WMO) and the United Nations Office for Disaster Risk Reduction (UNDRR), along with the International Telecommunication Union (ITU) and the International Federation of Red Cross and Red Crescent Societies (IFRC).

Despite the recurring catastrophic droughts, multiple failed rainy seasons, and the efforts of regional climate prediction centers and NMHS, the number of WMO members in Africa providing early warnings to vulnerable populations is alarmingly low (WMO, 2022).

Figure 2 demonstrates that only 4% of African nations reached 67-100% of their vulnerable populations during a riverine flood. In the event of an extreme event such as a flash flood, this proportion dropped to 1%. These call for more robust support from national governments, regional stakeholders, and development partners for CIS and EWS initiatives throughout the GHoA region.

Table 1. Number of people affected by drought and flooding in the few months of 2021. Source: WMO (2022) State of the Climate in Africa Report

Country	Months in 2021	Affected people
Burundi	May-July	▪ 33,000 people were displaced due to major flooding caused by the rising water level of Lake Tanganyika
Ethiopia	May-June	▪ 16.8 million people experienced a crisis or worse (IPC Phase 3 or more) due to drought in the short (MAM) rainy season
Kenya	July-October	▪ About 2.1 million people in Arid and Semi-arid Land (ASAL) counties experienced acute food insecurity (IPC Phase 3 and above) due to drought
Somalia	October-December	▪ Nearly 3.5 million people endured acute hunger (IPC Phase 3 or worse) due to drought.
South Sudan	May-December	▪ 835,000 people affected by flooding

Source: WMO (2022) State of the Climate in Africa Report

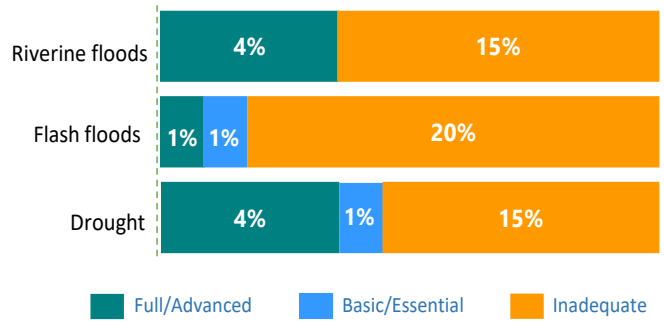

Figure 4. Number of WMO Members in Africa with early warnings available to the population at risk by hazard type (riverine floods, flash floods and drought). Note: For each hazard, the category Inadequate includes Members with no (0%) end-to-end early warning systems in place as well as Members with end-to-end early warning systems reaching no more than 33% of the population at risk; the category Basic/Essential includes Members with end-to-end early warning systems reaching 34–66% of the population at risk; and the category Full/Advanced includes Members with end-to-end early warning systems reaching 67–100% of the population at risk. Source: WMO (2022) State of the Climate in Africa Report.

Looking back, planning forward

It is not the first time the GHoA region has been hit by severe drought and flooding, and it is unlikely to be the last as climate change continues to disrupt global weather patterns. In the 2010-11 season, for example, the region endured what was then considered the worst drought on record, resulting in widespread famine and deaths. This was caused by a series of failed rains in Kenya, Somalia, and Ethiopia, which decimated people's coping mechanisms to the point where they could no longer produce enough food or keep livestock to sustain their families and themselves. In response, the international community banded together and vowed 'never again' for inadequate preparedness for drought risk management. Similarly, most of the national governments in GHoA's region acknowledged the need to address drought-related problems, leading to the establishment of drought management authorities such as the Kenya Drought Management Authority.

The 2020–2023 drought in the region was noted as the third longest and most widespread drought on record, after only the 2010–11 and 2016–17 droughts. Acknowledging the existence of the crises is the first step toward the solution, but this must be complemented by solid and sustained partnerships that integrate plans with actions. Moreover, strong coordination between relevant national and regional actors will enhance countries' capacities to prepare for and respond to drought better proactively. Therefore, a clear set of operating procedures during planning is key for governments to respond before disaster rather than functioning with delayed silos and reactive ways that would not adequately minimize the loss of livelihoods and assets. It is also vital to identify roles and responsibilities for key stakeholders at all levels, from regional to national to local, as these will guide the activation of pre-defined responses and actions in the case of a crisis.

The region's protracted drought has highlighted the need for immediate investment in infrastructure technical and human capacity development of national and regional entities to improve forecast accuracy and build the knowledge base on long-range forecasting. Hence, CIS and EWS remain critical in limiting the catastrophic consequences of climate extremes events. According to the United Nations Secretary-General (UNSG) – António Guterres's speech at the launch of the 'Early Warning for All initiative' at COP27, "Countries with limited early warning coverage have disaster mortality eight times higher than countries with high coverage." Given that most African countries provide inadequate end-to-end early warning systems to their vulnerable people, the call for immediate and focused investment in EWS could help GHoA countries build resilience. Such investments include building the infrastructural and technical capacity for observing, analyzing, and projecting extreme climate events and improving information dissemination and communication to ensure that early warnings translate into early action.

The question here is – how can we combine our previous experiences with contemporary science and innovation to plan, prepare and reduce future losses to protect millions of smallholder farmers and livestock keepers from extreme weather and climate crisis? Part of the answer is to call on countries to strengthen their human and infrastructural institutional capacities. A strong enabling environment, a guiding policy framework, and inter- and intra-institutional collaboration

among critical climate service stakeholders – including scientists, experts, policymakers, media, and the private sector – is another solution to improve CIS and EWS at the national and regional levels. In this regard, the NMHSs and their regional partners, such as the ICPAC, AICCRA, WMO-Office for Africa, and the African Climate Policy Centre (ACPC), have convened high-level meetings to assess the early warning and early action processes related to the region's recurring droughts and floods. The goal of these meetings is, among others, to provide informed and actionable policy recommendations to prevent future climate-related losses.

Conclusion and policy recommendations

recommended for improved early warning for preparedness and early action in the GHoA and by IGAD member states:

Effective multi-hazard early warning initiatives and programs should be identified, supported, and promoted for enhanced regional preparedness and early action.

During COP27, the UNSG has called for enhanced efforts to implement early warning systems to protect all people on Earth by 2027. Given that the planning and management of droughts requires a paradigm shift from crisis management to risk management, this significant worldwide initiative needs quick support and implementation in the GHoA region. Similarly, adopting IGAD regional frameworks for early warning and early response

Figure 5. Four critical multi-hazard early warning system pillars by the Greater Horn of Africa countries to adopt, support, and promote multi-hazard early warning for all to enhance preparedness and early action in the GHoA region. Adopted from the action plan.

Early warnings and improved climate and weather information can help save lives, improve productivity, and create jobs if accompanied by preparedness and early action. In this regard, there have been some improvements in forecast skills, hazard monitoring, and generating early warning information at the NMHSs, regional economic communities, and regional climate centers. There is a clear need in the GHoA to adopt, support, and promote multi-hazard early warning for all initiatives for preparedness and early action programs and initiatives in the region to protect the lives of millions of people, including smallholder farmers and livestock keepers from extreme weather and climate crisis. Hence, the following are guidelines and protocols would support the region's attempts to transition from reactive crisis management to proactive DRR techniques to build community resilience. In this context, endorsement and effective implementation of the regional DRM plan and the IGAD roadmap for preventative measures can help drive the transition from reactive to proactive climate-induced risk management. Moreover, maximizing the uses of new and pre-existing innovative financing solutions and policies such as risk insurance, microfinance, contributions, public-private partnerships, market-based finances, and others are critical for fulfilling the four critical multi-hazard early warning system pillars of early warning for all initiatives, as summarized by Figure 5.

- Strengthening disaster risk knowledge and management in the GHoA countries to collect data and undertake risk assessments to increase knowledge on hazards, vulnerabilities, and trends.
- Enhancing capacity in the GHoA countries for detecting, observing, monitoring, analyzing, and forecasting extreme weather and climate variability-related hazards through the effective development of multi-sectoral risk monitoring and scaled implementation of warning services.
- Creating awareness through effective communication, developing innovative partnerships, contextualizing risk information early warnings to make them understandable and usable, and enhancing dissemination, access, uptake, and use of multi-hazard early warning.
- Enhancing preparedness and coordinated early response by building regional, national, and community-level response capabilities of the GHoA countries.

Effective and sustained partnership and cooperation should be strengthened to adopt and meet the objective of early warning for all initiatives (EW4All) in the region.

Since disasters from extreme weather and climate variability are not restricted to national borders, effective and sustained partnership and cooperation among all major national and regional stakeholders is vital to ensure that everyone in the GHoA is protected by early warnings by 2027. However, effective risk management requires coordination across sectors, systems, scales, and borders. Coordination mechanisms at the continental, regional, and national levels, on the other hand, must be appropriately designed in collaboration with concerned stakeholders. Scaling up successful pilots, such as the IGAD pilot on climate-smart technologies in arid parts of Kenya, to the region will also help transform the food systems in the GHoA, which has a long history of complex disasters.

NMHSs' capacity (infrastructure, technical and human) should be improved to enhance the region's CIS and EWS.

The upgrading and modernization of the observing network using automatic weather stations and automatizing the data collection, quality control, transmission, and archiving are among the priorities of NMHSs in the GHoA. Hence, national governments, regional climate centers, and development partners should support the enhancement and sustainability of the NMHSs' observational infrastructure as well as human expertise to take advantage of advances in science and technology (use of digital tools, ICT, and broadcast systems) to ensure the availability and accuracy of CIS and EWS for enhanced service delivery. By doing this, the capacity of NMHSs to monitor and forecast extreme events, disseminate and communicate disaster risk knowledge, and trigger communities for early action will be improved.

The development and implementation of the National Framework for Weather, Water, and Climate Services (NFWWCS) should be supported to promote informed decision-making, support socioeconomic progress, and strengthen national resilience to climate-related risks and consequences.

In this regard, the technical and financial assistance from AICCRA and its regional partners in co-developing or strengthening the NFWWCS in the GHoA is a step in the right direction.

The supports of financial institutions such as the World Bank to AICCRA and other national/regional programs are, therefore, critical to ensure the realization of 'Early Warning for All' in the GHoA. Other institutions should, however, embrace such and similar initiatives as they help protect communities against recurring disasters and support their ability to recover from the loss of their means of subsistence and livelihood.

FURTHER READING

- IPCC (2022). IPCC 6th Assessment Report – Impacts, Adaptation, and Vulnerabilities.
- World Meteorological Organization (2022). State of the climate in Africa 2021.

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