Regional Consultations Sub-Saharan Africa

Mid-Term Review of the Implementation of the Sendai Framework
Thematic area on Multi-Hazard Early Warning Systems

**Background**

In 2022, UNDRR focused on Target G for the implementation of the Sendai Framework 2015-2030: “to substantially increase the availability of and access to multi-hazard early warning systems and disaster risk information and assessments to the people by 2030”. Target G was also the topic of the International Day for DRR. With the announcement of an ambitious target on EWS for all initiatives of the UN Secretary General, 2022 marks also an important crossroad to ensure that every person on Earth is protected by an early warning system in the next five years.

As part of the Mid Term Review of the Sendai Framework for DRR, UNDRR Regional Office for Africa UNDRR sent out a questionnaire dedicated to MHEWS at regional and continental level. The questionnaire was sent in September 2022 to all RECs, AUC and other regional organizations working on the topic. The questionnaire focused on a regional perspective on actions taken, challenges ahead and key observations made by the organizations since the start of the implementation period and in anticipation for the future, focusing on three different perspectives. First, a retrospective review of progress made from 2015 to date; second, on new and emerging issues for DRR and EWS; third, a prospective review for reaching Target G until 2030 beyond.

The following report summarizes the insights given by the following organizations:

- African Centre of Meteorological Application for Development (ACMAD)
- AGRHYMET Regional Centre
- African Union Commission (AUC)
- Economic Community of East African States (ECCAS)
- Economic Community of West African States (ECOWAS)
- Indian Ocean Commission (IOC)
- Intergovernmental Authority on Development (IGAD)
- Southern African Development Community (SADC)

The focus of the questionnaire was on the following themes:

1. The 4 elements of MHEWS (Picture 1);
2. People centred approach;
3. Governance (clear mandates, implementation capacities, budget allocation and monitoring and learning), collaboration and investments.
Retrospective Review of Progress Made from 2015 to date:
The first round of questions aimed at **summarizing the progress made** so far in making early warning systems more impactful and accessible. Organizations shed light on **key achievements and challenges in the last seven years**.

The 4 elements of MHEWS

The successful implementation of Multi-Hazard Early Warning Systems (MHEWS) is tracked through the realization of four interrelated elements necessary for effective end-to-end early warning system. These four pillars rely on the use and improvement of (1) Risk Knowledge, (2) Monitoring and Warning, (3) Dissemination and Communication and (4) Response Capabilities (figure 1).

When asked to recall which of these pillars were the most **important in improving MHWES** since 2015, most organizations named Risk Knowledge, including regional and national risk profiling, mapping, and assessments (AUC, ECOWAS, ACMAD, IOC, IGAD). For example, IOC mentioned the increase in multi-hazard understanding in island states, highlighting that, since 2015, member countries have integrated better risk assessment of geological hazards chemical hazards such as marine pollution from oil spills and biological hazards such as epidemic diseases.

**On Pillar 2** (monitoring and forecasting), AGRHYMET and ECOWAS recounted the ongoing need for the development of new approaches for monitoring and forecasting of specific issues, such as nutritional and food security, natural events like floods and weather changes in general. ACMAD additionally highlighted the necessity for such services to be established on a regional and continental level and IOC stressed the need to develop those services at the regional level. Regional services should be developed for agriculture, water, and health to inform decision making and to develop early warning systems.
IOC and ACMAD documented the improvement in Pillar 3 (Dissemination and communication) with the use of climate information portal where climate information and the seasonal forecast are posted (IOC) or the establishment of a regional platform for DRR in West Africa as important aspects of implementation (ACMAD).

SADC identified pillar 4 (Response Capabilities) as the most important sector so far, with implemented projects, such as the SADC Emergency Rooms, the SADC Standby Force, the establishment and operationalization of the SADC Humanitarian and Emergency Operations Centre (SHOC), to name a few. IGAD also flagged the joint efforts for an African roadmap, that led to the establishments of situation rooms in the region. AUC, as well as ECOWAS, specified that MHEWS were improved through regional capacity building for early action and increased coverage. ECCAS did not report on the progress made and referred to the lack of resources for implementation. IOC highlighted the emergence of national disaster response centers upgrading their institutional, legislative and policy frameworks to align them to regional processes.

People-centered approach
MHEWS are most impactful when they follow a people-centered approach, and warnings and information are accessible to all communities affected. Since the start of the Sendai Framework implementation period in 2015, African regions have worked on improving the access of people to MHEWS and were asked to reflect on the progress.

AGHRYMET noted the improvements in risk communication and early warning through social media. The AUC saw that more countries provide disaster risk information, and an institutional and operation framework for MHEWS in Africa has been established. On a regional level, according to the AUC, are aiming at increasing availability of MHEWS. IGAD developed an in-house hazard monitoring system and a MHEWS situation room at ICPAC together with UNDRR and AUC, and ECOWAS set up a flood forecasting mechanism and is working towards setting up a MHEWS situation room. Other regional platforms mentioned by ACMAD to boost availability are ‘MyDewetra’, which is an open-source web-based system for real-time monitoring and forecasting of natural hazards, and the ACMAD web portal on the continental RCC website. SADC named the establishment of their SADC Climate Services Centre as a tool to improve monitoring and forecasting, and the establishment of the accompanying annual Southern Climate Outlook Forum for the dissemination of information to users. ECCAS and IOC pointed to progress made on the national level. For example, as reported by IOC, countries are upgrading their communication systems to make information more timely available to the population by developing mobile application to be accessible to all.

Investments, governance and collaborations
To make MHEWS available and impactful, investment in initiatives and programmes is needed. Organizations reported on the investment trends in MHEWS in Africa. AGRYMET hightailed that there has been substantial investment in the technological field of weather forecast. IOC highlighted the increase in training, equipment and the focus on regional capacities of regional Climate Centers. Instead, AUC sees higher investments in disaster response, with a slow paradigm shift towards investment in risk management. Overall AUC as well as ECCAS and IGAD, lament that the investment is still too low for all targets of SFM related to EWS to be achieved.
In the ECOWAS and IOC region, most investment is mainly committed through bilateral and multilateral programmes, and ECCAS notes that investments are mostly combined between public and private. According to ACMAD, over the past three years investment has increased from 20% to above 50% in 2022 with the establishment of the Continental Multi-Hazard Advisory Center supporting the situation room at AUC. IGAD noted, that investments are still largely going to international organizations for the implementation of projects, and more financial resources are needed directly allocated to vulnerable communities.

Increased investments are crucial to achieving the SFM targets regarding early warning. But the complete and successful implementation further requires good governance, increased collaboration, and fruitful partnerships. Reporting on the advances in the transboundary cooperation for MHEWS, organizations noted governance improvements in various sectors, such as weather and flood forecasting, as well as food security (AGHRMET), high-level engagement in DRR meetings and workshops between meteorological service and NDMAs (ECOWAS and IOC) and regional governance (IGAD), for example through the EDF 11 engagement (SADC). Four organizations (AGHRYMET, AUC, ECCAS and IGAD) still reported that governance overall is too weak and needs further improvement, to avoid duplications of efforts (ECCAS).

**New and Emerging Issues for DRR and Early Warning Systems**

Organizations were asked on their observations on changes in contexts and environments relevant to their work and changes in their understanding of the issues at hand. These questions also included a first outlook on the changes for the remaining implementation period until 2030 and beyond.

DRR needs to be able to respond to new emerging issues and MHEWS should reflect the reality of the risk landscape. The most important context changes, which were named by nearly all organizations are Covid-19 and possibly other pandemics and epidemics to come. AGHRYMET, ECOWAS and AUC additionally named the rising insecurities and vulnerabilities as new challenges, and AUC and ACMAD pointed to the geopolitical challenges, such as the Ukraine crisis. IOC mentioned the issue of maritime safety i.e. the safety to navigation as well as chemical hazards related to oil spills and plastics. Another important factor for anticipating the future according to the AUC, ECOWAS, ECCAS, IOC, IGAD and SADC includes the overall increase in number and intensity of natural disasters, like fires and droughts due to climate change. ECCAS and SADC noted that not only the circumstances are changing, but also the level of preparedness and awareness for these issues at authority level. Additionally, IGAD flagged the improvements in dissemination of information through technological advancements, that is changing perception and possibilities for DRR within the population.

Countries are tasked with responding to a number of cascading and interrelated systemic risks to protect their population. When asked how their understanding of the systemic nature of risks has changed, also in light of the Covid-19 pandemic and the increasing effects of climate change, there are regional differences visible. The AUC and SADC overall reported, that Covid-19 increased awareness of risks and their systemic nature and ECOWAS saw this translate into changed and adapted behavior of the population and new projects to connect climate change
and other risks such as food security. In contrast, IGAD reported that missing capacities of institutions at national, regional, and local levels are limiting a real trend towards tackling systemic risks.

Lastly, organizations were asked about the most pressing issues and context changes they see arising in the period until 2030 and beyond, which should be considered in taking MHEWS action. The answers signaled emerging context issues, as well as needs for enhanced commitment and challenges for successful implementation.

AGHRYMET and SADC flagged the rise in insecurity on the continent and the continuing influence of pandemics, such as Covid-19 as arising context issues. ECCAS noted that the rise in climate refugees will add to these insecurities and pose challenges for many countries. AUC, as well as ACMAD, documented the increasing needs for, and challenges that come with implementing interoperable early warning systems and transboundary risk management. ACMAD additionally sees the operationalization of interfaces for biophysical and socio-economic data for early warning and early action, and targeted investment for these platforms as a task that will occupy DRR for the upcoming years. The AUC additionally names risk informed development and anticipatory action for impact-based forecasting as emerging issues and ECOWAS adds ‘enhancing response capabilities and information dissemination and communication to end users’. Organizations therefore see the comprehensive and collaborative planning and implementation of early warning and anticipatory action as main challenges arising in working in DRR.

Prospective review for reaching Target G until 2030 and beyond:
Organizations were tasked to reflect on the potential opportunities, challenges, and threats in achieving all aspects of Target G of the Sendai Framework in the remaining implementation period, as well as the future beyond. Additionally, organizations were given space to highlight key actions for the successful reaching of Target G.

Specifically asked on the most essential opportunities and challenges for transitioning from traditional early warning systems to impact-based forecasting in the future, a range of opportunities and challenges were reported. Initiatives and efforts that are seen opportunities included improving dissemination mechanism of weather forecast products (AGHRYMET), enhancement of technical capacities and collaboration with technical partners (ECOWAS), risk profiling and vulnerability assessments that provides more data and information (IGAD, SADC) and following a systemic and holistic approach to disaster risk as well as improved risk governance (AUC). ACMAD names new information technology and high political awareness as other circumstances that can pose opportunities for early warning systems. SADC also calls for the implementation of standardized tools and methodologies for vulnerability assessment and impact assessment to capitalize on the opportunities.

Challenges within the implementation of early warning system are: inadequate financing (AUC, ECOWAS), limited institutional and personnel capacities (ECOWAS), limited interinstitutional and international sharing of data and information, limited digitalization of data (AMCAD) and potential technical problems such as internet connection, stability of power, availability of IT
facilities (ECOWAS) according to the answers given. Regarding external challenges, ACMAD names ongoing and new pandemics and conflicts disrupting the flow of finance and other resources into impact-based forecasting as most important. Finally IOC named the need to strengthen coordination and collaboration amongst national institutions, regional level as well as peer learning.

Any improvements in Early Warning Systems should follow the people-centered approach. Organizations were asked about opportunities and challenges in granting more people access to early warning.

Opportunities can be created through the active involvement of stakeholders, DRR actors, climate experts, researcher, and academia, CSOs in the process and the creation of knowledge and awareness among key actors (ECOWAS) or the inclusion of traditional and religious leaders who are effective channels for quick communication of advisories and warnings (ACMAD). SADC highlights the role of the youth in mainstreaming DRR and EWS into the daily life and nurture a culture of awareness. External factors such as improved forecasting and monitoring methods or new information technologies can additionally boost accessibility, according to ACMAD and IGAD. ECOWAS suggest an opportunity in the dissemination of information to the people and the communities at risk, with SADC focusing on more unconventional methods of dissemination.

Challenges within the process of planning and implementation of successful and accessible early warning systems include the following: The fragmentation and duplication of efforts in operationalizing early warning systems (AUC, ACMAD), limited local capacities for the implementation of early warning (ECCAS), especially ‘reaching the last mile’ and problems in acting in anticipation (IGAD), lack of training to enhance local competencies (ECCAS, IOC) and the lack of data available and unclear roles and responsibilities between RECs and national governments (ECOWAS).

UNDRR asked organizations for their assessments on the needs, opportunities, and threats in regard to future investments for MHEWS. AGRHYMET flags the need for improving collaboration and partnerships at all levels and IGAD adds the need for an overall increased level of investment. ECOWAS agrees on the need for more financial capabilities, as well as technological infrastructure and human resources. SADC sees an opportunity in strengthening the relationships with the private sector for investment, through highlighting the benefits of MHEWS for business continuity and protection of private investments. IOC highlighted the need to build capacity for maintenance of equipment and harmonization of regional alert systems as well as the need for data exchange and strengthen dialogue and coordinate information flow.

These needs should be tackled, and the several opportunities were named as potentially helping. For example, the increased global awareness on hazards impact (AGHRYMET) and the recent advances in remote sensing and the potential use of social media (ECOWAS). These potential investments are not set in stone and might be threatened by internal and external factors. AGRHYMET named the insecurity, especially in the Sahel region and West Africa as potential threats, and the AUC lists the duplication of efforts in the planning and implementation process and a lack of institutional frameworks to manage transboundary risks as potentially endangering to investment trends. ACMAD worries that other priorities might overshadow DRR as an investment priority, when political agendas in countries with limited resources are
changing and ECCAS notes that few countries in the region understand the importance of investments of EWS.

The need for regional and continental cooperation and governance on transboundary risks have been mentioned as important but challenging for the successful implementation of MHEWS and early action. To know more about this part, UNDRR asked what organizations identified as key actions to improve governance and cooperation for the implementation of EWS pillars and transboundary cooperation.

AGRHYMET, AUC, ECOWAS and IOC agreed on an ongoing improving of collaborations and partnerships at all levels to be crucial, which might include the establishment of technical working committees for MHEWS and coordination meetings at continental and regional level (AUC). ECOWAS highlighted the need for overall strengthening of institutional capacities, with ECCAS noting a need for adequate training, especially on utilizing Public-Private-Partnerships. IGAD suggests using the RECs as platforms for support coordination to avoid overbearing LDCs. IOC noted the need for data exchange and strengthen dialogue for collaboration among agencies to facilitate and coordinate information flow. To tackle the lack of resources and capacities, ECOWAS also flags the need to ensure ongoing financing for EWS. ACMAD lists a number of key actions; to develop standard operating procedures and organize training and demonstration on those, as well as to include a user interface platform in the operating procedure.

Given space to report on additional measures found to be key in improving accessibility and impact of early warning, organizations reported an extensive list of ideas and input to be considered. AGRHYMET named the need to improve and fix power and network issues in remote rural areas, as well as improving communication tools and methods. The AUC flagged strengthened hazard detection, monitoring and analysis capabilities, risk dissemination and communication and the establishment of multi-hazard situation rooms for RECs and states. Adding to the need for more capabilities, ECOWAS asks for an increased engagement for more response capabilities in particular. ECOWAS also flagged the possibility to include traditional knowledge, as well as technological advances to build comprehensive and effective early Warning. For IGAD, raising awareness on the benefits and methods for anticipatory actions through UNDRR can pose another needed dimension of improving governance. ECCAS remarks the need for additional measures for adaptation and mitigation, in contrast to reactive responses. ACMAD lists main actions in the realm of improving communication and technological support for MHEWS implementation, including sufficient support for digitalization of multidisciplinary historical datasets to use in all aspects of early warning, development of interoperable and multidisciplinary information systems and improved access through interactive online platforms targeting vulnerable people, important local stakeholders, and important emergency management actors. Finally, IOC suggested a stronger specialized regional framework and policy and governance system.

The Way Forward
African organizations have flagged numerous challenges, but also opportunities ahead of the continent and its nations. In the future, strengthening capacities for the implementation of early
warning systems for all populations affected, and timely and comprehensive responses will be key in tackling existing and arising issues.

Achieving Target G of the Sendai Framework will save lives, but there is a rocky road ahead. Despite raised awareness at all levels, insufficient financing, difficulties in the successful coordination of efforts and competing priorities are threatening ongoing efforts. To make sure, populations vulnerable to natural disasters and the growing consequences of climate change are covered by early warnings, have access to information and plans on how to act in different scenarios, national and international efforts need to be strengthened.

The Mid-term review of the Sendai Framework is a timely opportunity to take stock of what has been achieved in the past and to identify gaps and needs for targeted actions. This exercise can only be successful through an understanding of the status quo. The answers given by the regional organizations serve as baseline for assessing the situation and should provide ground for ongoing discussion with all stakeholders involved in this important process.