



ACTIONS FOR DEVELOPMENT OF EARLY WARNING SYSTEM IN SOMALIA

TECHNOLOGY DESCRIPTION

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Early warning systems are a crucial component of disaster prevention and planning and constitute a substantial part of climate monitoring and forecasting technology. The system is intended to systematically provide timely and pertinent information to affected communities prior to the occurrence of a disaster, so that they may be better equipped to make decisions and undertake appropriate actions. The system's efficacy and efficiency are highly dependent on the numerous entities and agencies operating at different governmental levels working in tandem. These institutions include, for instance, those that help with emergency preparation, hazard mitigation, and hazard detection, monitoring, and forecasting. Additionally, operational procedures, financial, policy and regulatory frameworks, planning and budgetary support are required for the system. The early warning system's goal is to alert the public to impending natural hazards so that those who are most at risk are aware of their possible effects and may take necessary action to limit harm. An early warning system must include four interconnected aspects to be successful and complete: (i) risk knowledge, (ii) monitoring and warning services, (iii) distribution and communication, and (iv) response capacity. Meteorological and hydrological data are the initial step toward developing high-quality weather, flood, and drought predictions.

CURRENT TECHNOLOGY READINESS LEVEL OR COMMERCIAL READINESS INDEX

Several early warning structures have been established in Somalia. The National Multi-Hazard Early Warning Centre was established in Mogadishu in 2020, and it was given responsibility for coordinating disaster risk management efforts across the nation. The centre has assumed leadership roles in state, local and municipal emergency management initiatives. One of its key responsibilities is to regularly generate climate-related information products, such as predictions for temperature and rainfall, early warnings for cyclones and floods, and estimates for the spread of diseases and desert locusts. Additionally, SWALIM, an information management initiative run by the UN Food and Agriculture Organization in Somalia, offers frequent updates on water resources with an emphasis on early warnings for drought and flood risk. To help with flood management in Somalia, SWALIM has also created the Flood Risk and Response Management Information System (FRRMIS). To enhance and assist decision-making in sustainable natural resource management, planning, disaster preparedness, response and resilience building, humanitarian and development organisations largely rely on SWALIM information and early warning. Somalia is classified as a least developed member of the World Meteorological Organization. Early Warning technology in Somalia is developing and poor nationwide (Omar and Mohamed, 2022). The collecting and analysis of hydrometeorological data has just recently resumed. Somalia has inadequate institutional and technological capacity to provide correct hydrological information and timely early warnings. Alerts and early-warnings are produced by the donor-driven FEWSNET, FSNAU and FAOSWALIM programs.



CLIMATE RATIONALE OF THE TECHNOLOGY

Somalia is extremely susceptible to a wide range of natural disasters, including those that are known to be associated with climate change, such as heat waves, drought, and flash floods. Natural disasters have become more common and complicated in Somalia over the past several decades, and their effects have had a big influence on the nation. The two natural cyclical catastrophes that commonly afflict the nation and cause recurring losses of people, crops, and cattle are floods and droughts (Ahmed et al., 2022). Early Warning Systems (EWS) are key elements of climate change adaptation and disaster risk reduction and aim to avoid or reduce the damages caused by hazards. The detection, analysis, and prediction phases of EWS are followed by warning distribution, responsible decision-making, and implementation. Droughts, tropical cyclones, floods, storms, tsunamis, severe thunderstorms, forest fires, drought, and other natural disasters can all be detected early with such systems.

AMBITION OF THE TECHNOLOGY

SCALE FOR IMPLEMENTATION AND TIME-LINE

The country endeavours to enhance and broaden the institutional and technical facets of the early warning system with the purpose of enhancing readiness for prospective disasters. Some of the targets established for the dissemination and diffusion of early warning systems are explained below. The ambitions are aligned with Somalia's NDC which aims to establish effective early warning systems and disaster risk management policies to improve resilience to extreme weather events. These ambitions also align with the Somalia National Adaptation Programme of Actions (NAPA) whose proposed adaptation activities include strengthening the National-level disaster management agency responsible for coordination during emergencies through the development of early warning systems and drought management and emergency preparedness plans.

- Establish 18 new meteorological observatories in 18 regions nationwide.
- Setup a network of two hundred automated weather stations and the associated communication infrastructure.
- Establish Flood Warning and Drought Warning Systems in High-Risk Areas.
- Establish a national meteorological centre.
- Strengthening the current mechanism for communicating hazards information

The timeline for implementation is 2024-2032.

EXPECTED IMPACTS OF THE TECHNOLOGY

The following are the expected outcomes from the development of an early warning system in Somalia.

- Enhanced technical capacity, with more than 1000 trained human resources related to early warning issuance at regional centres in Somalia.
- Improved mechanisms for early warning communication and dissemination of vital information from about 18 new centres thus strengthening preparedness and adaptation to natural disasters such as floods and droughts.
- Enhanced institutional capacity in early warning resulting from the reinforcement connections with partner organizations and important stakeholder groups, and establishment of one national meteorological centre and 18 regional centres.



- Enhanced emergency preparedness, response, and risk management from accurate early warning information.
- Enhanced protection of human lives and reduction in property destruction by 60% through proper timing of disaster response.

POLICY ACTIONS FOR TECHNOLOGY IMPLEMENTATION

EXISTING POLICIES IN RELATION TO THE TECHNOLOGY

The development and enhancement of early warning systems have been recommended by NDP 9 2020-2024, Recovery and Resilience Framework (RFP) National climate change policy, NAP Framework and Updated NDC submitted to UNFCCC in 2021. The report was informed by Adaptation Baseline Assessment 2020 and Somalia's National and Sub-national adaptation plans and policies, including, NAPA 2013, Initial National Communication 2018, National climate change policy which provides for a climate change adaptation strategy and a climate change risk mitigation plan for Somalia. The National Water Resource Strategy (2021-2025) intends to address climate variability and its effects on water resources by implementing strategies for adaptation, mitigation, and recovery. The strategy delineates the approaches, which comprise fortifying early warning systems and enhancing hydro-meteorological monitoring and supporting data and information management systems.

PROPOSED POLICIES TO ENHANCE TECHNOLOGY IMPLEMENTATION

To enhance implementation of early warning system in Somalia, policies in the following areas will be necessary.

- Provisions for increased budgetary allocations for early warning systems' development in relevant departments at both regional and national levels.
- Develop recurring programs for need-based training to professional staff from national meteorological, climate change, and disaster risk management institutions.
- Provisions for organizing specialised workshops for staff development and training in early warning systems
- Formulate policies to establish collaborations with non-governmental organisations such as WMO, and other regional and international meteorological networks.
- Provisions for public-private partnerships to involve the active community organisations that are already in place to assist with emergency preparedness.

COSTS RELATED TO THE IMPLEMENTATION OF POLICIES

Policy/Strategy	Cost (USD)
Provisions for increased budgetary allocations for early warning systems' development in relevant departments at both regional and national levels	1,100,000
Develop recurring programs for need-based training to professional staff from national meteorological, climate change, and disaster risk management institutions	51,000
Provisions for organizing specialised workshops for staff development and training in early warning systems	11,000
Formulate policies to establish collaborations with non-governmental organisations such as WMO, and other regional and international meteorological networks	51,000
Provisions for public-private partnerships to involve the active community organisations that are already in place to assist with emergency preparedness	37,000
Total	1,250,000



References

Omar, A. A., Hassan, S. M., & Mohamed, M. J. (2022). Drought Effects in Somalia and Solution Proposals. *Omar, AA, Hassan, SM & Mohamed, MJ (2022). Drought Effects in Somalia and Solution Proposals. African Journal of Climate Change and Resource Sustainability, 1(1), 13-25.*

Ahmed, M. A., Mohamed, M. H., Parvin, M. M., & Ilić, P. (2022). The recurrence of natural disasters in Jowhar, middle Shabelle region, Somalia: The causes and impacts. *Journal of Environmental Protection, 13(9), 657-670.*

USEFUL INFORMATION

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LINKS TO TNA REPORTS

<https://tech-action.unepccc.org/country/somalia/>

<https://moecc.gov.so/policies-and-strategies/>

<https://moa.gov.so/department-of-irrigation-and-early-warning/>

<https://sodma.gov.so/>