

Government of the Islamic Republic of Afghanistan

CURRENT STATE OF EARLY WARNING SYSTEM IN AFGHANISTAN



AN OUTLOOK OF THE FLOOD EARLY WARNING SYSTEM 28 November 2020 © 2020 National Environmental Protection Agency of the Islamic Republic of Afghanistan and the United Nations Environment Programme.

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ACRONYMS

AF	Adaptation Fund
AKAH	Agha Khan Agency for Habitat
ALCS	Afghanistan Living Condition Survey
AMD	Afghanistan Meteorological Department
ANDMA	Afghanistan National Disaster Management Authority
ASDC	Afghanistan Spatial Data Centre
ATRA	Afghanistan Telecom Regulatory Authority
AU	Alarm Unit
AVPT	Avalanche Preparedness Team
AWS	Automatic Weather Stations
CBDRM	Community-based Disaster Risk Management
CBEWS	Community-based Early Warning System
CBFEWS	Community-based Flood Early Warning System
CDC	Community Development Council
CERT	Community Emergency Response Team
DA	Data Acquisition
DU	Data Upload
DCC	Disaster Coordinating Council
DDA	District Development Assembly
DDMC	District Disaster Management Committee
DDMP	District Disaster Management Plan
DoHRA	Directorate of Haj and Religious Affairs
DPP	Disaster Preparedness Plan
DRM	Disaster Risk Management
DRRD	Directorate of Rural Rehabilitation and Development
EWS	Early Warning System
FEWS	Flood Early Warning System
FFGS	Flash Flood Guidance System
GCF	Green Climate Fund
GEF	Global Environment Facility
GIRoA	Government of the Islamic Republic of Afghanistan
GLOF	Glacial Lake Outburst Flood
Ha	Hectare
HVRA	Hazard, Vulnerability, Risk Assessment
ICIMOD	International Centre for Integrated Mountain Development
ISDR	International Strategy for Disaster Reduction
JMC	Joint Warning Centre
Lidar	Light Detection And Ranging
MAIL	Ministry of Agriculture Irrigation and Livestock

ACRONYMS

MRRD	Ministry of Rural Rehabilitation and Development
MoPW	Ministry of Public Works
MoU	Memorandum of Understanding
NDMC	National Disaster Management Commission
NDRRP	National Disasters Risk Reduction Plan
NEWC	National Early Warning Committee
NGO	Non-Governmental Organisation
NSP	National Solidarity Programme
NWARA	National Water Affairs Regulation Authority
LOC	Local Operating Centre
00	Operations Centre
OIC	Officer In Charge
PDMP	Provincial Disaster Management Plan
PDMC	Provincial Disaster Management Committee
SART	Search and Rescue Team
SERT	School Emergency Response Team
SMS	Short Messaging System
SOP	Standard Operating Procedure
TWLMS	Telemetry-based Water Level Monitoring System
UNDRR	United Nations Office for Disaster Risk Reduction
UNDP	United Nations Development Program
UNEP	United Nations Environment Program
UNFCCC	United Nations Framework Convention on Climate Change
USD	United States Dollar
VDMP	Village Disaster Management Plan
WB	World Bank
WMO	World Meteorological Organization
WMP	Weather Monitoring Post
WRD	Water Resources Department
WWLMS	Wireless Water Level Monitoring System

EXECUTIVE SUMMARY



Figure 1:Deh Shar_Shughnan ©Haris Sherzad @UNEP

Early Warning System (EWS) is an approach adopted by the governments, communities and societies to reduce the risk of potential hazards and enhance resilience. EWS is the most costeffective and practical measure for disaster risk prevention. The United Nations International Strategy on Disaster Reduction (UNISDR) defines the Early Warning System as: "The set of capacities needed to generate and disseminate timely and meaningful warning information to enable individuals, communities and organisations threatened by a hazard to prepare and to act appropriately and in sufficient time to reduce the possibility of harm or loss."

Globally, an estimated 90 % of recorded major disasters caused by natural hazards from 1995 to 2015 were linked to climate and weather, including floods, storms, heatwaves, and droughts. As a re¬sult, direct disaster damage costs are exponentially increas¬ing, from USD 75.5 billion in the 1960s to over a trillion dollars for the 2007-2016 decade

As described at the 3rd International Conference on Early Warning, effective early warning systems must be people-centred and must integrate the following four inter-related key elements:

- 1. Risk Knowledge
- 2. Monitoring and Warning
- 3. Dissemination and Communication
- 4. Response Capability

For an effective CBEWS, it is crucial to consider all four elements defined for an Early Warning System. The communities and involved institutions: should have a good knowledge of the risks that are threatening them; should monitor the changes in risks and vulnerabilities of the communities; should disseminate and communicate the information and risks provide early warnings, and should have the response capability to reduce the risk once they receive the alerts

Afghanistan, a member of the World Meteorological Organization (WMO), is classified as the least developed country by the UNFCCC, has been devastated not only with the long-lasting civil

war but also by natural disasters. Since the 1950s, floods and droughts combined have caused over 5,000 deaths, affected over 21 million people. On the other hand, during this period, river floods and flash floods have inflicted an estimated more than 600 million USD economic losses, which is much higher than the losses imposed by the drought. From 1900 to 2010, the statistics of the fatalities show that more than 50 % of the total deaths due to the natural disasters were related to climate-induced natural disasters.

Hydrological and meteorological data collection and observation in Afghanistan started in the late 1940s, and the analysis started in mid-1950s. The hydrometric network expanded rapidly in the 1960s and 1970s, reaching a peak of 150 in 1980. Before 1979, Afghanistan had one of the most advanced meteorological monitoring systems in the region. Unfortunately, most equipment were rendered non-functional or destroyed due to years of conflict and war. Under the Taliban regime, Afghanistan's Meteorological Department was dissolved, and its weather records were destroyed.

Since 2001, there has been some rehabilitation of non-functional weather stations and installation of new stations. AMD has also been reinstated and is the lead agency in collecting, processing and reporting of weather data including temperature, precipitation and weather forecasts.

In Afghanistan, EWS is included in most of the national disaster-related policies and relevant plans, although there is still lack of a long term strategic early warning system plan.

Though the National Disaster Management Law enacted in 2012, does not explicitly mention the Early Warning System, it emphasises on possible natural and unnatural disasters and reduction of their risks. The development of EWS and its integration into development plans and public policies is one of the principal components of the five-year National Disaster Management Plan, which was developed in 2010. The Strategic National Action Plan (SNAP), developed in 2011, recognises the need for EWS. To help reduce disaster risks, SNAP proposes under strategic objective 3, the development of community-based early warning systems. The Afghanistan National Disaster Management Authority's Strategy, developed in 2015 for four years, proposes an assessment of the existing EWS and design and establishment of a multihazard and replicable EWS based on the results of the assessment

ANDMA and its technical partners have made efforts to identify hazard-prone areas of the country and better understand the associated risks to potential natural hazards. However, this risk knowledge remains at a larger scale of provincial levels. Flood and flash flood risks are monitored and forecasted by AMD and NWARA. Both organisations issue warning on flash flood and riverain flood, respectively. The issued warnings are disseminated through their respective websites and social media accounts. However, the country has no defined response plan to the issued warnings.

A systematic network of Early Warning System does not exist in Afghanistan. At the national level, flood risks are forecasted by AMD and NWARA, and warnings are disseminated to the public through their websites and social media accounts. The warnings remain at the scale of a province and do not provide detailed information at the local and watershed level, which is not

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