

Scaling Up Early Warning Systems Implementation Roadmap

Maldives 2023 - 2027



NDMA
NATIONAL DISASTER
MANAGEMENT AUTHORITY



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Maldivian Red Crescent

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01 Background

The Sustainable Development Goals (SDGs) and the Sendai Framework for Disaster Risk Reduction 2015-2030 identify strengthened early warning systems as a critical component of building the resilience to disasters and crises and, by extension, contributing to sustainable development.

Early warning systems (EWS) are key elements of disaster risk reduction and climate change adaptation, as they help reduce or avoid the detrimental impacts of hazardous events. To be effective, early warning systems need to be risk-informed, target communities most at risk, disseminate messages and warnings efficiently, ensure preparedness and support early action. Early warning systems must rely on a sound scientific and technical basis and focus on the most vulnerable people and sectors. This implies the adoption of a system-based approach incorporating all relevant risk factors, whether arising from the climate-hazards or social vulnerabilities, and from short-term or long-term processes.

Early warning systems include four pillars: 1) disaster risk knowledge, 2) observation, monitoring, analysis, and forecasting, 3) warning dissemination and communication and 4) preparedness and response capabilities.

Multi-sector and multi-stakeholder coordination, involvement of communities at risk, having an enabling institutional and legislative environment, clear roles and responsibilities, and adequate operational capacities, are essential for effective and consistent Early Warning Systems.

Early Warnings for All (EW4All) is a special initiative of the UN Secretary General, which aims to spearhead action to ensure every person on Earth is protected by early warning systems by 2027. Under the umbrella of EW4All, Maldives aims to scale up prior efforts and strengthen national early warning systems.

Maldives' vulnerability to disasters stems largely from its inherent geographical characteristics, which makes it the world's lowest-lying country. With inundation of its islands due to the rising seas being the primary risk factor that often gets global attention for the island nation, Maldives also faces several other hydrometeorological hazards due to climate change. The frequency and severity of storm surges, heatwaves, and extreme weather hazards have been on the rise and this has led to more recurring and severe monsoonal flooding, coastal erosion, and flooding due to sea surges in the islands. NASA projects that sea levels in the Maldives could rise by 0.76 metres by 2100 under the current high emission scenarios of the world. With 75% of the land in Maldives being merely 1 metre above the mean sea level, these are concerning projections for Maldives which require measures of adaptation, starting with the capability to warn about disasters for communities and people exposed to the highest risk. The need for reliable mechanisms of early warning systems which function through risk-informed processes is therefore imperative in any effort to improve preparedness for such events.



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1.1 Statutory requirements

The overarching legal instrument that mandates early warning with regard to disasters in Maldives is the Disaster Management Act (Law number 28/2015). Below are some of the instances where the law mandates early warning related responses for government agencies and other relevant stakeholders during disaster response.

Under the law where the roles of Ministries and State-Owned Entities are defined, Maldives Meteorological Services (MMS) is required to maintain a multi-hazard early warning system. It states under article 34, U) of the act:

“Meteorological Services shall maintain a multi-hazard early warning system to gather and maintain information regarding impending disasters in the Maldivian territory.”

Further, MMS is required to collaborate with the National Disaster Management Authority (NDMA) and other relevant institutions in disseminating disaster warning information as specified in article 34, V) which states:

“Meteorological Services in collaboration with National Disaster Management Authority and other relevant institutions should disseminate disaster warning information to the public when the Authority receives information on an impending disaster threat in the Maldivian territory.”

A further requirement to make the advisories available in English and other languages spoken majorly by foreigners residing in Maldives is made mandatory for Maldives Immigration under article 34, W) which states:

“Information and advisories made public during disaster situations should be made available in English and other major foreign languages spoken by the majority of foreigners residing in the Maldives by the agency mandated for immigration.”

The Act mandates it as a requirement for local councils to disseminate information in a disaster response situation as article 35, e), under the role of councils, states:

“(Councils shall) Put out (NDMA’s) advisories, disseminate and exchange information as per the multi-hazard early warning procedures during disaster response.”

The State Radio and television are required to be used in dissemination of early warning during and ahead of a potential disaster. Article 51, C) of the Disaster Management Act states:

“State radio and television shall be included as a communication resource to be used for early warning and disseminating disaster information.”

The above statutory requirements are mandated by the Disaster Management Act of Maldives which was enacted in 2015. The primary agency to generate early warnings in a situation of a disaster is the Maldives Meteorological Service. However, the role of dissemination of this information is mostly under the mandate of the National Disaster Management Authority in collaboration with other government agencies.

02 Purpose & Objectives

This EWS Implementation Roadmap 2023-2027 serves as a strategic guide to drive initiatives spanning national to local levels, channel investments towards enhancing Early Warning Systems for more effective Disaster Risk Reduction (DRR), and facilitate the seamless integration of comprehensive early warning mechanisms. Organizations are encouraged to incorporate these actions into their operational frameworks, aligning with their primary and supportive responsibilities. This harmonization ensures the optimal utilization of resources across the spectrum from national to local levels.

The primary objective of this Roadmap is to provide the national and local governments with a structured blueprint for fortifying a people-centric Early Warning System in Maldives through targeted actions and resource allocation. This Roadmap stems from an extensive gap analysis of Maldives' EWS, which included the application of a Minimum Core Capability Checklist in the form of a workshop and a series of consultation meetings. This roadmap presents a set of recommended actions designed to prioritize investments in EWS and DRR, in accordance with Target G of the Sendai Framework for Disaster Risk Reduction and the Disaster Management Act of Maldives.

Collaboratively crafted with inputs from National Disaster Management Authority, Maldives Meteorological Service, Ministry of Homeland Security and Technology and the Maldivian Red Crescent, this Roadmap was developed with support from UNDRR. It provides a basis for coordinated efforts among diverse national and local agencies, channelling focused programming and resource allocation towards scaling up national early warning systems.

The recommendations presented herein are based on identified national gaps, priorities and needs and cover the four pillars as well as the interpillar domain of EWS:

Pillar 1: Disaster Risk Knowledge

Pillar 2: Detection, Monitoring, Analysis, and Forecasting

Pillar 3: Warning Dissemination, and Communication

Pillar 4: Preparedness and Response Capabilities

Additionally, the EWS Roadmap takes into account the cross-pillar domain, covering aspects around governance, stakeholder coordination, advocacy, monitoring and evaluation and financing for early warning systems. This holistic approach guarantees a comprehensive and well-rounded enhancement of Maldives' early warning infrastructure.



03 Methodology & Guiding Principles

The EW4All initiative in Maldives launched with the involvement of key stakeholders of government and the private sector. The national consultation that followed for two days discussed existing conditions and identified needs within the four pillars of EW4All and how these could be addressed.

A gap analysis exercise designed by the global pillar leads with a set of predetermined questions prompted to identify the requirements that are currently lacking for each pillar. The validation of the gap analysis was carried out at the national consultation and through circulating the document among the pillar leads via an online platform and through in-person consultations over the duration of months following the launch of the campaign (see Annex 1: The Gap Analysis).

This roadmap has been designed based on the gap analysis conducted at the EW4All national consultation as a mechanism to address the resulting gaps identified. While the data for the roadmap has been acquired from designated staff from each institution leading the pillars, emphasis was given to the specificity of shaping the outputs and activities which have been proposed as the most appropriate in order to address the gaps highlighted. The budgetary requirements for each activity in the roadmap are based on past experience of conducting similar activities and through desktop research on the activities which have not been undertaken in Maldives in the past. While the source for funding for most of the activities has not been identified, the roadmap is expected to assist in the identification of funding opportunities by streamlining need-based requirements into a single document. This Roadmap is a live document which will require revisiting and updating based on a monitoring and evaluation framework which is further discussed in section 5.



Source: Shaari

04 National Implementation Roadmap towards scaling up Early Warning Systems

PILLAR 1: DISASTER RISK KNOWLEDGE

Gap Identified	Associated Output	Output Indicator	Activities	Responsibility		Implementation Timeline				Budget, USD / LCU	Budget Source
				Lead	Support	Year 1	Year 2	Year 3	Year 4		
Gap 1.1 Absence of an up-to-date disaster risk profile for natural hazards	Output 1.1 Formulation of a national risk profile through comprehensive assessment and stakeholder engagement.	Published disaster risk profile study for natural hazards	Activity 1.1.1 Develop Methodology and process for conducting hazard & risk assessments, focusing on historical data (including updated hazard risk information), scientific models, and indigenous and local knowledge of natural hazards.	NDMA	ESCAP	x				N/A	UN SDG Fund Programme
			Activity 1.2 Conduct hazard assessment based on the above methodology.			x					
Gap 1.2 Absence of digitized hazard maps for the islands of Maldives	Output 1.2 Formulation of dynamic & multi-hazard digital maps for all vulnerable islands	Existence of multi-hazard digital maps for all vulnerable islands	Activity 1.2.1 Local consultancy to formulate a workflow along with data collection layers to digitize hazard vulnerability maps using GIS software that accounts for the existing multi-hazard maps for some sectors.	NDMA	LGA, MRC, MOHST, relevant UN agencies	x				\$10,000	Not Identified

			Activity 1.2.2 Activity 1.2.2 Develop a pool of trainers to undertake mapping exercise at national and island level	NDMA	LGA, MRC, MoHST		x	x	x	\$10,000	Not Identified
			Activity 1.2.3 Implement mapping activities and showcase all maps generated using an online tool that can be used for decision making.	NDMA	LGA, MRC, MoHST		x	x	x	\$700,000	Not Identified
Gap 1.3 Limitations in Tracking of hazardous events, losses and impact data criteria	Output 1.3 Upgrade the existing disaster losses and damages system and to make it publicly available	A publicly available database hosted online.	Activity 1.3.1 Operationalize a tracking system (database) for hazardous events and disaster losses and damages established, with data disaggregation aligned with SFDRR and UN SDGs that addressed the past challenges and constraints of a systems approach.	NDMA NBS	UN Agencies, Government Other Stakeholders		x	x	x	\$10,000	UNDP funding for database installation allocated / Operational funding source not identified
Gap 1.4 Absence of a risk Index of critical infrastructure & secondary risks associated with risks, in major populations.	Output 1.4 Develop Hazard and Risk Index of critical infrastructure and services in major populations.	Risk Index of critical infrastructure is regularly monitored and updated in major populations.	Activity 1.4.1 International consultancy to develop hazard assessment methodology and risk index for critical infrastructure that takes into consideration the coping capacities of communities	NDMA	LGA UNDP		x			\$10,000	Partly covered by UNDP
			Activity 1.4.2 Conduct and compile an analysis of potential impacts and stress-testing of critical infrastructure in major city level population centres	NDMA	All Stakeholders		x	x		\$50,000	Not Identified

Gap 1.5 Limited Integration of DRR and Risk Assessments into development plans	Output 1.5 Integrating DRR & Risk assessments into development plans	Development plans published with DRR integrated as a key priority	Activity 1.5.1 National platform / workshop to introduce the risk profile, defining responsibilities of government stakeholders in integrating risk drivers into development plans	NDMA	LGA UNDP		x	x		\$30,000	Partly covered by UNDP
			Activity 1.5.2 Conduct awareness activities and multi-hazard simulation drills at sectoral level to ensure risk assessment findings are incorporated into sectoral development plans of Ministries and State-Owned Enterprises.	NDMA	Government Ministries, SOEs		x	x	x	\$15,000	Not Identified
			Activity 1.5.3 Risk assessment results integrated into Island disaster management plans as well as Island Developmental Plans at the local councils through development of guidance.	LGA	NDMA, LGA		x	x	x	\$20,000	Not Identified
Gap 1.6 Gaps in translating warning messages to commonly used languages.	Output 1.6 Formulating a set of warning messages in commonly used languages for all potential hazards, to be used in disaster response.	Existence of a set of warning messages in commonly used languages in Maldives for all potential hazards, to be used in disaster response.	Activity 1.6.1 Consultancy to formulate translation of early warning messages in 4 commonly used languages in Maldives that builds on existing Moosun app and MET website.	NDMA	MMS, UNDP		x	x	x	\$20,000	Not Identified

Gap 1.7 Absence of a mechanism to understand the potential impacts of early warning messages in relation to the available historical data and risk assessments.	Output 1.7 Develop a mechanism to understand the potential impacts of early warning messages in relation to historical data & risk assessments.	Establishment of a guidance that triangulates potential impacts of early warning messages with available historical data and risk assessments conducted at specific communities.	Activity 1.7.1 Local consultant to develop and publish a disaster advisory guidance which integrates early warning messages with potential impacts at island level using historical data and risk assessments to prepare island communities for severe weather events	NDMA	MMS	x	x			\$10,000	Not Identified
			Activity 1.7.2 Strengthen response capacities in Island Disaster Management Plans by using potential impact information from historical data, risk assessments and early warning forecasts	NDMA	LGA			x	x	NA	NA
Gap 1.8 No standardized process developed for scientific and technical experts to assess and review the accuracy of risk data information.	Output 1.8 Formulate a Standardized Process for Scientific and Technical experts to assess and review the accuracy of risk data and information.	Standards Developed and published to facilitate reviewing of the accuracy of risk data and information.	Activity 1.8.1 Formulate a standardized process outlining the steps and criteria for scientific and technical experts to assess and review the accuracy of risk data and information.	NDMA/ NBS/ MoCCEE?	NBS MoCCEE	x				\$15,000	Not Identified
			Activity 1.8.2 Provide training and capacity-building programs to NDMA staff and relevant experts on how to effectively implement the standardized process.								
			Activity 1.8.3 Pilot the standardized process within NDMA to identify potential challenges, refine the process based on feedback, and ensure its practicality and effectiveness.	NDMA	LGA		x	x	x	NA	NA

PILLAR 2: DETECTION, OBSERVATION, MONITORING, ANALYSIS AND FORECASTING OF HAZARDS

Gap Identified	Associated Output	Output Indicator	Activities	Responsibility		Implementation Timeline				Budget, USD / LCU	Budget Source
				Lead	Support	Year 1	Year 2	Year 3	Year 4		
Gap 2.1 Absence of an overarching statutory instrument for the governance of the institutional setting of MMS.	Output 2.1 Formulation of the Meteorology Act.	Meteorology Act passed	Activity 2.1.1 Local consultant visit and revise already drafted Meteorology Act	MMS	MoCCEE, NDMA			x		\$30,000	Not Identified
Gap 2.2 Faulty observational infrastructure that is currently inoperable.	Output 2.2 Ensure more than 80% of the Automatic weather Stations (AWS) are operational and functional	More than 80% of AWS is operational and well-maintained at all times.	Activity 2.2.1 Purchase AWS spare parts and extra sets of spare sensors to operationalize the AWS and keep it fully functional.	MMS	MoCCEE, WMO, UNDP		x	x	x	\$168,000	Not Identified
Gap 2.3 Lack of marine hazard observation capacity.	Output 2.3 Establish a marine buoy network as a recep-tor for marine and relevant hydro-meteorological hazards	Wave and ocean current observation available	Activity 2.3.1 Establish a marine observation buoy network.	MMS	MoCCEE, MNDF, MMRI, WMO UNDP			x	x	\$3M	Partly covered by UNDP
Gap 2.4 Limited availability of Remote sensing Data.	Output 2.4 Expansion of the radar network currently in existence	Weather RADAR network down time reduced to less than 10% per annum	Activity 2.4.1 Install additional Radar to cover whole country	MMS	MoCCEE	x	x	x	x	\$1.9M	Bilateral, Italian Government Grant aid fund

Gap 2.5 Limitations in Multi Hazard Forecasting Capacity.	Output 2.5 Enhancing and refreshing the capacity of staff for the interpretation of Numerical Weather Prediction products	Improved forecasting of weather and extreme events	Activity 2.5.1 Organize refresher training programs to operational forecasters	MMS	MoCCEE	x	x	x	x	\$655,112	Not Identified
Gap 2.6 Limited Impact Based Forecasting Capacity.	Output 2.6 Establishment of Impact Based Forecasting	Implementation of IBF in at least 3 atolls/regions of Maldives	Activity 2.6.1 Review existing work and capacity development on the area, Improve Numerical Weather Prediction (NWP) Capacity, Get detailed Digital Elevation Models of required islands and map critical infrastructure.	MMS	NDMA MLSA Maldives Hydrographic Service ESCAP UNDP		x	x	x	\$2.86M	Not Identified
Gap 2.7 Limitations in warning services & Multi Hazard Early Warning Operations	Output 2.7 Enhance Common Alerting Protocol (CAP) system & Moosun mobile app system	CAP alerts available in WMO Alert Hub and Moosun app running free of bugs	Activity 2.7.1 Consultancy for Enhance CAP system and Moosun mobile app system	MMS	MoCCEE NDMA		x	x		\$40,000	Not Identified

PILLAR 3: WARNING DISSEMINATION AND COMMUNICATION

Gap Identified	Associated Output	Output Indicator	Activities	Responsibility		Implementation Timeline				Budget, USD / LCU	Budget Source
				Lead	Support	Year 1	Year 2	Year 3	Year 4		
Gap 3.1 Lack of direct observation of warnings and risks associated by all stakeholders.	Output 3.1 Develop a single platform to deliver and monitor multi hazard early warning information using standard practices which is to be utilized by all responsible stakeholders at all levels	Piloting and adoption of a Multi Hazard Early Warning System (MHEWS) platform	Activity 3.1.1 Seek technical support to establish an advanced Multi-Hazard Early Warning System (MHEWS) platform in the Maldives for the delivery, monitoring, and seamless integration of hazard and risk information	MoHST	All stakeholders	x				\$35,000	Not Identified
			Activity 3.1.2 Design, development and implementation of a central MHWES platform Making a reference to Output 4.1 , which may contain similar content as this activity	MoHST	All stakeholders	x	x	x		\$200,000	Not Identified
			Activity 3.1.3 Capacity building and training of stakeholders, public awareness on using MHWES platform	NDMA	All stakeholders			x		\$35,000	Not Identified

Gap 3.2 Absence of a National Multi Hazard Early Warning Dissemination and Communication Centre	Output 3.2 Establish a National Multi Hazard Early Warning Dissemination and Communication Centre fully equipped and operated round-the-clock (24/7) by qualified operators	Ensure warnings are monitored and disseminated round-the-clock by qualified operators	Activity 3.2.1 Revise mandate of current national emergency operations centre to work round-the-clock to ensure multi hazard warning dissemination and communication to all responsible stakeholders and public	NDMA	All stakeholders	x	x			\$100,000	Not Identified
			Activity 3.2.2 Establish an Authorized Alerting Team for alerting warnings to all relevant responders	NDMA	All stakeholders	x	x			\$30,000	Not Identified
Gap 3.3 Lack of integration, interoperability and availability of EWS related information between public agencies (G2G), public and private agencies (G2B/B2G)	Output 3.3 Prioritize information sharing by revising current Disaster Management (DM) Act (28/2015) and signing memorandum of understand (MoU) with relevant authorities	Ensure climate-based information is interchanged and used effectively between public agencies (G2G), public and private agencies (G2B/B2G) to speed up warning dissemination	Activity 3.3.1 Review current weather, water and climate events related information available and the relevant data sharing methods and policies implemented in between public agencies	MoHST	All stakeholders	x	x			\$30,000	Not Identified
			Activity 3.3.2 Execute a memorandum of understanding (MoU) with the public agencies to guarantee the sharing and dissemination of EWS related information to the relevant entities	MoHST	All stakeholders		x	x	x	\$35,000	Not Identified

			<p>Activity 3.3.3 Develop protocols for sharing information with private agencies or revise the current DM act to cater private agencies needs for speedy warning dissemination and communication</p>	MoHST	All stakeholders		x	x	x	\$35,000	Not Identified
			<p>Activity 3.3.4 Conduct interviews and engage in meetings with private agencies to pinpoint deficiencies in the sharing of EWS related information and address those gaps</p>	MoHST	All stakeholders	x	x			\$35,000	Not Identified
<p>Gap 3.4 Limited use of Common Alerting Protocol (CAP) for exchanging multi hazard emergency alerts and public warnings over all kinds of Information Communication Technology (ICT) networks</p>	<p>Output 3.4 Adoption of Common Alerting Protocol (CAP) by all responsible agencies to deliver early warnings and alerts to all people and communities at risk, and up to global scale through the use of different technologies</p>	<p>Ensure consistent warning messages are disseminated simultaneously over multi-channel early warning systems, increasing warning effectiveness while simplifying the warning task.</p>	<p>Activity 3.4.1 Review status of installation and operation of Emergency Communication equipment, current guidelines and local Standard Operating Procedures (SOP)s on how to use and integrate Common Alerting Protocol CAP to information systems, sirens and Frequency Modulation (FM) broadcast stations (if any) and share the documents with relevant stakeholders</p> <p>(Making a reference to Output 4.2, which may contain similar content as this activity)</p>	MoHST	NDMA and All stakeholders	x				\$35,000	Not Identified
			<p>Activity 3.4.2 Provide training and awareness programs for stakeholders to enable them to seamlessly integrate and utilize information from the Common Alerting Protocol (CAP), ensuring uniform dissemination and communication practices across the Maldives</p>	NDMA	All stakeholders		x			\$40,000	Not Identified

Gap 3.5 Insufficient utilization of location-based short message service (SMS) technology to efficiently reach individuals in high-risk areas via mobile networks	Output 3.5 Implementation of geo-located mobile early warning services using cell broadcast and/or location-based short message service (SMS)	Ensure relevant information reach people at the right time, in the right place	Activity 3.5.1 Establish or upgrade the necessary telecommunications infrastructure, including cell towers and network coverage, to ensure broad access across the country. Note: Need clarification from CAM/PSM: Cell broadcasting build on the JICA/GCF-supported digital terrestrial television broadcasting (DTTB) system	CAM	Mobile Network Operators, MoHST, NDMA, MMS	X	X	X	X	\$800,000	Not Identified
			Activity 3.5.2 Collaborate closely with mobile network operators to coordinate the deployment of cell broadcast and location-based short message service (SMS) services	CAM	Mobile Network Operators, MoHST, NDMA, MMS	x	x	x		\$100,000	Not Identified
			Activity 3.5.3 Ensure compliance with telecommunications regulations and standards for broadcasting emergency alerts and revise regulations if needed	CAM	Mobile Network Operators, MoHST, NDMA, MMS	x	x	x		\$50,000	Not Identified
Gap 3.6 Insufficient utilization of new technologies for effective warning dissemination and communication	Output 3.6 Deployment of new technologies Identification of technologies that may assist in effective warning dissemination and communication	Ensure latest technologies are implemented for effective warning dissemination and communications in an nitrated manner	Activity 3.6.1 Develop report on current warning dissemination technologies implemented in the Maldives for dissemination and communication at national, regional, council and island level, including community-based groups	MoHST	CAM, NDMA, MMS, MRC, community-based groups	x	x			\$35,000	Not Identified

			<p>Activity 3.6.2 Develop guideline on warning dissemination technologies in Maldives and methods that can be applied on the last mile to inform and instruct community at risk</p>	MoHST	CAM, NDMA, MMS, MRC, community-based groups	x	x			\$30,000	Not Identified
			<p>Activity 3.6.3 Scale up existing climate apps for data integration, by use of National Digital ID system to disseminate warnings allowing validated 2-way communications</p>	MoHST	All stakeholders	x	x	x		\$100,000	Not Identified
			<p>Activity 3.6.4 Scale up Moosun app and integrate with other related apps in the government, such as Madhadhu app, eFaas app, disasterwatch mobile app etc.</p> <p>Making a reference to Output 2.7, which may contain similar content as this activity</p>	MoHST	All stakeholders	x	x	x		\$100,000	Not Identified
			<p>Activity 3.6.5 Develop report on suitable telecommunication and other technologies that may assist in effective warning dissemination and communication, along with cost programmes for their deployment.</p> <p>This includes; implementation and usage of Smart lampposts, Smart sirens in islands, usage of large electronic displays (tailored to the different needs of specific groups).</p> <p>In addition, this includes telecom and other technologies which can be utilized to automate systems for rapid response in situations with limited reaction time, such as; Automatic stop of transport, activation of red lights in traffic.</p>	CAM	MoHST, NDMA, MMS	x	x			\$35,000	Not Identified

			Activity 3.6.6 Roll out of recommendations derived from the telecom review report mentioned in Activity 3.7.5 and ensure they are addressed.	CAM	MoHST, NDMA, MMS			x	x	\$100,000	Not Identified
Gap 3.7 Lack of systematic approach to use traditional warning channels for last-mile stakeholder groups	Output 3.7 Develop guidelines and strengthen policy to use traditional warning dissemination channels	Cover all parts on the country, emphasizing on last-mile stakeholder groups	Activity 3.7.1 Assess current traditional early warning devices available and ensure availability of systems in all areas of the country. This should include identifying means to integrate these devices with latest technologies and alerting systems and sensitising the communities of the use of both in a holistic manner. This includes ensuring the traditional warning channels are located in an area that covers the whole island etc.	CAM	MoHST, NDMA, MMS	x	x			\$100,000	Not Identified
			Activity 3.7.2 Procurement, installation and maintenance of traditional warning dissemination channels such as sirens, public address (PA) systems, satellite phones, signs, flags, etc.	CAM	MoHST, NDMA, MMS		x	x	x	\$700,000	Not Identified
			Activity 3.7.3 Develop guidelines to strengthen policy (Disaster Management Act) on usage of Outdoor Mass Notification Systems such as sirens, public address (PA) systems signs, flags at island level. Ensure clear actors are mentioned to strengthen the policy	CAM	MoHST, NDMA, MMS	x	x			\$35,000	Not Identified
			Activity 3.7.4 Roll out, run test drills and monitor usage of traditional warning dissemination channels for last-mile stakeholder groups	CAM	MoHST, NDMA, MMS			x	x	\$65,000	Not Identified

Gap 3.8 Limited inclusion accessibility and engagement of community-based groups; representing women, children and youth, migrants, elderly and disabled persons during regulation formulation and implementation process for warning dissemination and communication	Output 3.8.1 Ensure active inclusion, accessibility and engagement of community-based groups; including women's organizations, youth clubs, migrant associations, elderly support networks, and disability advocacy groups	At Least 75% active engagement from each relevant group to lower risk and impact. To calculate the percentage of Community-Based Groups Actively Engaged= (Total Number of Relevant Groups/ Number of Engaged Groups) ×100	Activity 3.8.1 Identify and list community-based groups representing women, youth, migrants, elderly individuals, and disabled persons in the target area. Gather contact information and establish initial communication channels.	NDMA	MoHST, CAM, MMS, MRC, community-based groups	×					\$30,000	Not Identified
			Activity 3.8.2 Conduct outreach campaigns to introduce warning dissemination and communication and its objectives. Organize information sessions, workshops, or community meetings to explain the importance of early warning systems and their involvement in the process.	NDMA	MoHST, CAM, MMS, MRC		×	×			\$35,000	Not Identified
			Activity 3.8.3 Create advisory committees or working groups that include representatives from each identified community-based group. - Define the roles, responsibilities, and objectives of these committees in the warning dissemination framework development process.	NDMA	MoHST, CAM, MMS, MRC, community-based groups		×	×	×		\$30,000	Not Identified
			Activity 3.8.4 Collaborate with the advisory committees to co-create warning dissemination strategies that address the unique vulnerabilities and needs of their respective communities.	NDMA	MoHST, CAM, MMS, MRC, community-based groups		×	×	×		\$30,000	Not Identified
			Activity 3.8.5 Establish accessible communication channels to keep community-based groups informed and engaged. This may include dedicated websites such as use of MHEWS, or social media groups.	NDMA	MoHST, CAM, MMS, MRC, community-based groups			×	×		\$20,000	Not Identified

			Activity 3.8.6 Training Community Emergency Response Teams (CERTs) on incorporating Risk Communication and Community Engagement (RCCE) and principles of Accountability to Affected Populations (AAP) into planning and response, to enable the island level group to work effectively with the public to build resilience.	NDMA	UNICEF	×	×			\$85,000	UNICEF support to rolling out in two islands
Output 3.9 Ensure that warning dissemination and communications are accessible and responsive to the diverse needs of community-based groups	Ensure accessible transmission of early warning related information to all community-based groups	Activity 3.9.1 Evaluate the extent to which warning dissemination and communication processes cater to the needs of diverse community-based groups. This assessment should consider factors such as language, format, physical accessibility, and cultural sensitivity.	NDMA	MoHST, CAM, MMS, MRC, community based groups	×	×			\$35,000	Not Identified	
		Activity 3.9.2 Identify the languages spoken within the community by migrants and prioritize languages based on the demographics of community-based groups. Translate warning messages and materials into the selected languages, ensuring accuracy and cultural relevance. Making a reference to Output 1.6 , which may contain similar content as this activity	NDMA	MoHST, CAM, MMS, MRC, community based groups	×	×			\$70,000	Not Identified	
		Activity 3.9.3 Ensure that cell broadcasting systems support multiple languages and can deliver messages in the chosen languages	CAM	MoHST, NDMA, MMS, MRC		×	×		\$100,000	Not Identified	
			Activity 3.9.4 Conduct accessibility testing of cell broadcasting messages to ensure that they are easily understandable and usable by individuals with disabilities, such as those who are blind or have low vision	CAM	MoHST, NDMA, MMS, MRC, community based groups		×	×		\$100,000	Not Identified

			Activity 3.9.5 Promote the use of accessible devices and apps that can receive and display cell broadcast messages effectively. Provide guidance and support for community members in selecting and configuring accessible devices	CAM	MoHST, NDMA, MMS, MRC, community-based groups		x	x		\$20,000	Not Identified
			Activity 3.9.6 Develop accessible warning materials that will be distributed widely and are available in accessible formats for individuals with disabilities and migrants.	NDMA	MoHST, CAM, MMS, MRC, community-based groups		x	x		\$20,000	Not Identified

PILLAR 4: PREPAREDNESS AND RESPONSE CAPABILITIES

Gap Identified	Associated Output	Output Indicator	Activities	Responsibility		Implementation Timeline				Budget, USD / LCU	Budget Source
				Lead	Support	Year 1	Year 2	Year 3	Year 4		
Gap 4.1 Absence of - Impact Based Forecasting & Warning Services (IBFWS) - Global Multi-hazard alert system (GMAS)	Output 4.1 Development of IBFWS Services and GMAS In Maldives	Establishment of IBFWS ad GMAS	Activity 4.1.1 Development of Orientation module and CAP Standard SOP for IBFWS	MMS	MRC, NDMA	×	×			\$5000	Not Identified
			Activity 4.1.2 Dissemination of IBFWS orientation and SOP to first responders operating in the Maldives	MRC	MMS, NDMA		×			\$2,000	Not Identified
Gap 4.2 Absence of standardized Common Alerting Protocol (CAP)	Output 4.2 Development of SOP for CAP	Establishment of Standard Operating Procedure for CAP	Activity 4.2.1 Development of CAP SOP in consultation with response agencies to include hazard specific messaging	MMS	NDMA, MRC	×	×			\$15,000	Not Identified
			Activity 4.2.2 Dissemination of CAP SOP to relevant authorities and First Responders	MMS	NDMA, MRC		×			\$2000	Not Identified
Gap 4.3 Limited integration of EW4All into Island Disaster Management Plans (IDMP)	Output 4.3 Integration of E4Wall into IDMP Process	Full integration of EW4all into IDMP Process	Activity 4.3.1 Develop EW4all module /Component into IDMP Process	NDMA	MRC	×				N/A	N/A

Gap 4.4 Absence of Early Action Protocol (EAP) in Maldives	Output 4.4 Development of EAP In Maldives	Early Action Protocol (EAP) developed	Activity 4.4.1 National EAP development with multi stakeholder engagement	MRC	NDMA	x	x			\$35,000	Not Identified
			Activity 4.4.1 Develop a comprehensive Forecast Based Financing (FBF) Process	NDMA, MRC	Min of Finance	x	x			\$35,000	
			Activity 4.4.3 Stakeholder exercise on EAP implementation	NDMA	MRC		x	x			
Gap 4.5 Limited/Absence Social Protection Policies Integrated into DRR	Output 4.5 Development and integration of Social Protection Policies into Anticipatory and Preparedness Action Plans	Integration of Social Protection Policies into existing Anticipatory and Preparedness Plans	Activity 4.5.1 Desktop review of existing Social Protection Policies in emergency response in Maldives.	NDMA	Ministry of Social and Family Development (MoSFD) MRC	x	x			\$4000	Not Identified
			Activity 4.5.2 Dissemination of existing guidelines and policies around Social Protection in emergencies to response agencies.	NDMA	MoSFD, MRC	x	x			\$2000	Not Identified
Gap 4.6 Limited Coverage of local preparedness Capacity via national CBDRM Programme (in terms of the number of islands)	Output 4.6 Expansion of National CBDRM Programme	Increase Local Preparedness Capacities with development of Island Disaster Management Plans (IDMP) and Response Plans nationwide	Activity 4.6.1 Implementation of CBDRM Programme to 50 islands: - develop IDMP and Response Plans using multi hazard risk assessment	MRC	NDMA	x	x	x	x	\$350,000	Not Identified

			Activity 4.6.2 Development of Community Emergency Response Teams (CERT) in 50 Island Communities nationwide	NDMA	MRC	x	x	x	x		Not Identified
			Activity 4.6.3 Yearly Preparedness activities (simulation exercise) Activities via Community Emergency Response Teams (CERT) in 50 Island Communities.	NDMA	MRC	x	x	x	x		Not Identified
Gap 4.7 Absence /Limited Protocols/procedures for evacuation of last mile operators	Output 4.7 Development protocols for evacuation of last mile operators	Protocols/ Procedures developed & integrated into the CBDRM Process (IDMP, Response Plans)	Activity 4.7.1 Develop protocol and integration for evacuation of last mile operators into CBDRM Programme (IDMP, DM Plans)	NDMA	MRC, MNDF	x	x				Not Identified
			Activity 4.7.2 Dissemination of protocol/ procedures in place for evacuation of last mile operators to government authorities, local governance and first responders	NDMA	MRC, MNDF	x	x			\$2000	Not Identified
Gap 4.8 Gaps in public awareness on hydro meteorological and geophysical hazards, and warning systems	Output 4.8 Development of a National Education Programme	Climate Literacy/ Education Programme developed	Activity 4.8.1 Develop a Climate Literacy Education Programme (Focus on hydro meteorological and geophysical hazards and warnings systems)	MRC	NDMA, MMS	x	x			\$37,500	Not Identified
			Activity 4.8.2 Roll out of Education Programmes as part of School Curricula targeted for Teachers, Students and Parents in 50 island communities	MOE	NDMA, MRC, MMS			x		\$3752	Not Identified

			Activity 4.8.3 Printing IEC Materials and dissemination in 50 Island Communities via CBDRM Programme	MRC	NDMA, MOE, Councils			x		\$3750	Not Identified
			Activity 4.8.4 Development of digital platform with online resources, educational messaging on hydro meteorological and geophysical hazards and warnings systems	MRC	NDMA		x	x		\$43,500	Not Identified
Gap 4.9 Absence of Standardized Protocols of monitoring & evaluation of emergency response	Output 4.9 Development of a Standard protocol/ procedure to monitor & assess emergency response	Establish Standard Protocol/ procedure to review Emergency Response capacity	Activity 4.9.1 Local consultancy to develop Standardized Protocol to review emergency response post disaster	NDMA	MRC	x	x			\$7,000	Not Identified
Gap 4.10 Limited assessment carried out on institutional Operational capacity needs on Preparedness and response actions	Output 4.10 Execution of institutional operational capacity on Preparedness and Response Actions of EW4all Partners and key government Authorities	Institutional operations capacity assessed of EW4All Partners & key government authorities on Prepared-ness and Response Action	Activity 4.10.1 Local consultancy to develop Assessment Process on institutional Operational Capacity on Preparedness and response action	NDMA	MRC	x	x			\$10,000	Not Identified
			Activity 4.10.2 Dissemination of Assessment process of Institutional Operational Capacity for Government Ministries and SOEs.	NDMA	MRC		x			\$2000	Not Identified

			Activity 4.10.3 Carryout institutional Operational Capacity Assessment for EW4All Partners and Key Government Authorities identified on Preparedness and response action.	NDMA	MRC		x	x	x	N/A	
Gap 4.11 Limited integration of UN humanitarian response plans into anticipatory action & preparedness plans prepared.	Output 4.11 Integration of UN humanitarian response plans into the National Anticipatory action/ preparedness plans (eg CBDRM programme)	National Anticipatory action/ preparedness plans integrated with UN humanitarian response plans.	Activity 4.11.1 Local consultancy to integrate UN humanitarian response guidelines into the existing CBDRM framework of NDMA.	NDMA	MRC, UNDRR		x	x		\$5,000	Not Identified

INTER-PILLAR: GOVERNANCE, COORDINATION, ADVOCACY M&E AND FINANCING FOR EWS

Gap Identified	Associated Output	Output Indicator	Activities	Responsibility		Implementation Timeline				Budget, USD / LCU	Budget Source
				Lead	Support	Year 1	Year 2	Year 3	Year 4		
Gap 5.1 Absence of a data exchange mechanism backed by statutes	Output 5.1 Development of interagency protocols for data exchange of monitoring systems based on open-source data and platforms and baseline data necessary to produce data products for all priority hazards.	Publication of interagency protocols/SOPs for data exchange, including guidelines for data sharing, data storage, and data access.	Activity 5.1.1 Establishment of interagency working groups to facilitate collaboration in data exchange efforts.	MoCCEE	NDMA, MMS, MoHST, MRC,	x	x			N/A	N/A
			Activity 5.1.2 Comprehensive analysis of existing regulations, laws, and statutes related to data exchange for monitoring systems.	MoHST	NDMA		x			\$5000	Not Identified
			Activity 5.1.3 Development of interagency protocols/SOPs for data exchange, including guidelines for data sharing, data storage, and data access.	MoHST	NDMA, MMS, MRC, MoCCEE		x			\$10,000	Not Identified

Gap 5.2 Lack of legislation to provide protection of personal information collected through early warning system.	Output 5.2 Develop regulations to provide protection of personal information collected through early warning systems in compliance with international standards and local legal frameworks.	Existence of a published regulation to provide protection of personal information collected through early warning system.	Activity 5.2.1 Conduct a comprehensive review of existing data protection laws and regulations to understand the current legal framework, and identify gaps and inconsistencies regarding personal information collected through early warning systems.	MoHST	NDMA, MMS, MRC, MoCCEE		x			\$30,000	Not Identified
			Activity 5.2.2 Draft regulations specifically tailored to address the protection of personal information collected through early warning systems.				x	x			
			Activity 5.2.3 Develop and implement a public awareness campaign to inform the public about the new regulations and their rights and responsibilities regarding personal information.				x	x			
Gap 5.3 Lack of coordination in the form of testing broad multi-stakeholder forecast-based plans and protocols.	Output 5.3 Development of a mechanism to ensure coordination between stakeholders in formulation and implementation of forecast-based plans and protocols.	Existence of a validated and published coordination framework that outlines how different stakeholders will collaborate in the formulation and implementation of forecast based plans and protocols.	Activity 5.3.1 Local consultancy to identify and map all relevant stakeholders, including government agencies, non-governmental organizations, community groups, and private sector entities involved in forecast-based plans and protocols and to conduct a comprehensive needs assessment to understand the specific requirements, concerns, and expectations of each stakeholder in the context of forecast-based plans and protocols.	NDMA	All Stakeholders		x			\$20,000	Not Identified

			<p>Activity 5.3.2 Develop a coordination framework or mechanism that outlines how different stakeholders will collaborate in the formulation and implementation of forecast-based plans and protocols.</p>	NDMA	All Stakeholders		x				
			<p>Activity 5.3.3 Conduct joint tests and simulations of forecast-based plans and protocols to evaluate their effectiveness in real-world scenarios and identify areas where coordination can be improved.</p>	NDMA	All Stakeholders		x	x			
<p>Gap 5.4 Absence of sustainable financing mechanism for the continuity of early warning systems over the long term.</p>	<p>Output 5.4 Establish mechanisms to mobilize funding for the continuity of EW4All and early warning systems in general.</p>	Existence of a validated continuity framework and plan of action for EW4All.	<p>Activity 5.4.1 Local consultancy to conduct a thorough analysis of the current financial landscape for early warning systems, including existing funding sources and their limitations.</p>	NDMA	MoCCEE			x	x	\$10,000	Not Identified
			<p>Activity 5.4.2 Establish partnerships with the private sector, civil society organizations, and international organizations to leverage additional resources and expertise for early warning systems. Encourage collaboration and knowledge-sharing to enhance the effectiveness of financing mechanisms.</p>	NDMA	MoCCEE		x	x	x	N/A	N/A

Gap 5.5 Absence of well-defined objectives for early warning systems to be monitored and evaluated against to measure the progress and overall effectiveness.	Output 5.5 Establishment of defined objectives for early warning systems to be monitored and evaluated against, to measure the progress and overall effectiveness.	Existence of defined objectives for early warning systems to be monitored and evaluated against, to measure the progress and overall effectiveness.	Activity 5.5.1 Define clear objectives for early warning systems in alignment with national disaster risk reduction goals and priorities.	NDMA	MoCCEE, MoHST, MRC UN agencies	x					N/A	N/A
			Activity 5.5.2 Establish an interagency coordination mechanism that brings together relevant government agencies, experts, and stakeholders to coordinate the implementation of early warning system performance and activities.	MoCCEE	UNRC, NDMA, MoHST, MRC	x	x	x	x	\$30,000	Not Identified	

05 Implementation Structure and Approach

5.1 Coordination mandate

The overall coordination of this roadmap will be undertaken by the Ministry of Climate Change, Environment and Energy, with the support of the UN Resident Coordinator with support from the organizations leading the pillars of the EW4All initiative. Lead representatives and alternative representatives will be designated from the institutions leading each pillar, to coordinate effectively. Coordination meetings between the pillar leads shall take place quarterly and these meetings shall be organized and chaired by the Ministry of Climate Change, Environment and Energy, with the support of the UN Resident Coordinator as required.

The purpose of the quarterly meeting is to take stock of the progress on the activities listed in the pillars. A timeline of progression for each pillar and inter-pillar activities of the roadmap will be kept up to date by the pillar leads.

The representative leads for each pillar during the formulation of this roadmap have been listed below.

Pillar	Pillar leading agency	Representatives	Designation
Pillar 1: Disaster knowledge	National Disaster Management Authority	Faroosha Ali	Director - Emergency Management
Pillar 2: Detection, observation, monitoring, analysis and forecasting of hazards	Maldives Meteorological Service	Ahmed Rasheed	Director Meteorology
		Ibrahim Humaid	Seismologist
Pillar 3: Warning dissemination and communication	Ministry of Homeland Security and Technology	Mohamed Sharif Ahmed	Project Coordinator
Pillar 4: Preparedness and Response Capabilities	Maldivian Red Crescent	Ibrahim Shameel	Manager, Programmes & Services

5.2 Co-Leads and Implementing entities

The co-leads for the initiative are:

- Ministry of Climate Change, Environment and Energy
- United Nations Resident Coordinator's Office

The main implementing entities for the Roadmap are the institutions leading each pillar, and the co-leads of the programme, as follows:

- National Disaster Management Authority
- Maldives Meteorological Service
- Ministry of Homeland Security and Technology
- Maldivian Red Crescent
- Relevant UN entities

Additional key implementing partners vital for the effective execution of the EW4All Roadmap include:

- Ministry of Defence and National Security
- Local Government Authority (LGA)
- Ministry of Housing, Land and Urban Development
- Maldives National Defence Force (MNDF)
- Maldives Police Service (MPS)
- Maldives Association for Tourism Industry (MATI)

5.3 Investment & funding arrangements

This section highlights existing projects, project funding in the pipeline and projects which are set to commence in the near future, for the four pillar leads of the EW4All initiative and their relevant partners.

5.3.1 National Disaster Management Authority

There are a total of 10 key ongoing projects and programmes at NDMA, as follows:

- 1. Maldives Urban Resilience Development Project (MURDP)** is financed by the World Bank. The project commenced in 2019 and is estimated to end by 2026. The aim of the project is to enhance urban services and strengthen resilience in selected cities in Maldives. The various components in this project include construction of Sewerage Treatment Facility at Hulhumalé, Storm water Drainage Improvement and Rainwater Storage, Establishment of Disaster Emergency Operations Centre at National Disaster Management Authority (NDMA) and also financing a number of technical and analytical studies to strengthen sustainable urban development.
- 2. UN SIDS Joint Programme** commenced in 2022 and concludes in March 2024. This component of the programme is implemented by UNDP and UNESCAP. The component implemented by UNDP in the programme seeks to establish new regulations, coordination mechanisms, and standard operating procedures at the island community level. This will empower local communities to take the lead in building resilience against climate-induced disasters, benefiting various population groups, including vulnerable ones. Under this programme UNESCAP is strengthening national and sub-national capacity for DRR and CAA in Maldives. This includes developing an updated risk profile of Maldives based on high-resolution climate projection information and geospatial techniques to provide technical advisory to the Government on strengthening existing data and information products and support evidence-based policy making for DRR and CCA and design interventions. To ensure that the stakeholders are well-equipped to use and apply the developed database and update the modelling results, hazard, vulnerability, and risk maps, UNESCAP is planning to enhance the institutional capacity of the stakeholders and youth through a series of training programmes.

3. **The Emergency Warning Broadcast System (EWBS)**, funded by Japan, commenced in 2019 and is estimated to end by 2025. This project involves sending out early warning messages through mass-broadcasting mediums that include the television and radio broadcast platforms throughout Maldives reaching communities reached through mainstream media. The key aim of the project is to maximize the reach of early warning messages thus enhancing response time and effectiveness of disaster response throughout the country.

4. **Backup Communication System** project's main objective is to provide a backup system of communication in times of disaster in the form of an early warning and emergency redundant communication network. In the past, disasters have stretched the capacity of the established mobile phone networks in Maldives and had congested the network cells causing disruption of communication in critical times. This backup system ensures such outages are no longer a risk for disaster response.

Fire Aid Project is being financed by the United Kingdom commenced in 2022 and is estimated to end in 2023. Under the project, fire response equipment was provided from the United Kingdom to Maldives enhancing the capacity of the Maldives National Defence Force's Fire and Rescue service department in attending fire related emergencies.

5. **Strengthening Preparedness and Resilience through Inclusive Community Governance in the Maldives (SPRING)** is a project financed by USAID which commenced in 2022. The project is set to come to a close by 2024. This is a partnership between NDMA, MRC and ADP to conduct hazard vulnerability workshops and formulate island disaster management plans across 7 islands in Maldives.

6. **National Disaster Risk Reduction and Climate Change Adaptation Strategy** development project is funded by the UNDRR and has the objective to formulate the national DRR strategy for Maldives through comprehensive consultation with all key stakeholders and through research. The project commenced in 2023 and is set to end in 2024. This project is funded by UNDRR.

7. **Pumps for Resilience Project** is a Government of Maldives initiative which commenced in 2022. It is set to come to a close in 2024. The project involved providing local governments at the island level with the equipment and training to ensure local communities have the capacity to act as first responders during incidents of flooding.



Source: NDMA

5.3.2 Maldives Meteorological Service

Maldives Meteorological Service's capacity improvement projects currently in the pipeline include:

- 1. Upgrade of weather sensors in 5 weather observation stations** to make them compliant as per WMO Global Basic Observation Network (GBON) standard. This project is financed under WMO Systematic Observation Financing Facility (SOFF) while the Implementing entity is UNEP, with advisory support from Finnish Met Institute (FMI) and BMKG (Indonesia Met).
- 2. Enhancement of Computation capacity of MMS** (high-performance computing system to run high resolution Numerical Weather Prediction models) and to pilot Impact Based Forecasting (IBF) in one island (tentatively Fuvahmulah). This project is financed under USAID Climate Adaptation Project, with technical and implementation partner as RIMES (Regional Multi-Hazard Early Warning System for Asia and Africa)
- 3. Implementation of the X-band RADAR network (4 RADARS), financed by a grant aid project of the Government of Italy.** The project is currently at the stage of selecting a technical and implementing partner by a competitive bidding process either from Maldives or an Italy based company.
- 4. Enhancing Weather and Climate Resilience in RIMES Member States through Capacity Building on Impact Forecasting** project funded through the ESCAP Trust Fund for Tsunami, Disaster and Climate Preparedness and implemented by RIMES from 2016 to 2018 and further extended 2020 to Q1 2024. The project aims to strengthen impact-based forecasting capacities of MMS, and to facilitate the annual national Monsoon Forums. As a cyclical, regular processes that develop a culture of preparedness – these Monsoon Forums facilitate cooperation between sectors to ensure that early warnings and seasonal forecasts result in risk-informed actions that protect lives and livelihoods.

- 5. Tsunami Preparedness Capacity Assessment for the Indian Ocean Basin** is a newly commissioned study financed through the ESCAP Trust Fund for Tsunami, Disaster and Climate Preparedness for 2024. Led by UNESCO-IOC, the technical capacity of the Intergovernmental Coordination Group for the Indian Ocean Tsunami Warning and Mitigation System (ICG/IOTWMS), of which MMS is a member, will be assessed to understand the progress made since the 2004 Indian Ocean Tsunami and to identify the tsunami warning system gaps that remain. ESCAP will supplement the comprehensive technical assessment with a summary for policy makers for the South Asian Association for Regional Cooperation to strengthen tsunami preparedness.



Source: NDMA

5.3.3 Ministry of Climate Change, Environment and Energy

There are 4 key ongoing related projects and programmes under the Ministry's portfolio, as follows;

1. Capacity Building for Improved Transparency of Climate Change Mitigation and Adaptation Actions in the Maldives (CBIT Maldives) is financed by GEF.

The project commenced on 1 August 2022 targeted to complete on 31 July 2025. This project aims to strengthen institutional capacity for tracking mitigation and adaptation actions and establish a climate finance tracking system in the Maldives.

2. Indian Ocean ISLANDS – Maldives – Implementing Sustainable Low and non-Chemical Development in SIDS (ISLANDS) is financed by GEF. The project commenced on 1 Dec 2022 and is targeted to complete on 31 Dec 2027. This project will focus on strengthening institutional mechanisms and capacity to manage hazardous waste. The Indian Ocean Child Project is one of five (5) child projects that is part of a GEF funded UNEP led global programme entitled “Implementing Sustainable Low And Non-Chemical Development in SIDS” (“the GEF ISLANDS Programme”) The GEF ISLANDS Programme also contains a global coordination, knowledge management and communication child project, which will share knowledge and experiences across all regions to address challenges posed by chemicals and wastes common to all SIDS and to stimulate inter-regional cooperation on these issues.

3. The Digital Maldives for Adaptation, Decentralization and Diversification (DMADD) Project is financed by the World Bank. The project commenced in 2022 and is estimated to end by 2027. The aim of the project is to support the use of digital technologies to decentralize, diversify and to adapt to climate change. The project objective is to enhance the enabling environment for the digital economy in Maldives, to improve identification for in-person and remote service delivery, and to leverage data and analytics for a green, resilient, and inclusive development. It is designed around four components, and the proposed activities are conceived following the country's priorities and funding needs in the medium term.



Source: Hippo-pix

- 4. The ‘eFaas’ National Digital Identity Project in the Maldives**, as launched in 2021 and funded by the government, aims to establish a comprehensive digital identity service without replacing existing government-issued IDs. It’s designed to offer secure digital identification based on current government documents, allowing users to control data sharing among organizations and government agencies through a consent-based approach. This move towards digital identity aims to enhance transparency, empowering users and supporting the nation’s digital shared about them, between various organizations and government agencies. The project will support the ongoing efforts towards empowering citizens and other users while building a digital Maldives.
- 5. Maldives Resilient Reef Ecosystem And Economy For The Future (MALDIVES RREEF)** project aims to establish sustainable financing mechanisms to support coral conservation and facilitate the development of, and investment in, projects and businesses that sustainably contribute to the resilience of coral reefs and the communities living on these atolls. Phase 1 of the project is set to carry out feasibility studies and data collection activities to establish baselines and inform the development of activities and implementation in the following phases that will follow.

5.3.4 Maldivian Red Crescent

MRC has 2 ongoing projects which can link to components around EW4All Initiative, as follows:

- 1. Strengthening Preparedness and Resilience through Inclusive Community Governance (SPRING)**, a joint project with National Disaster Management Authority (NDMA), Asian Disaster Preparedness Center (ADPC) supported by USAID Bureau of Humanitarian Assistance.
- 2. Enhancing Resilience Planning and Strengthening Community Preparedness (ERCP)** in the Maldives supported by USAID Bureau of Humanitarian Assistance. This project will be implemented in close coordination with the National Disaster Management Authority.

Both projects highlighted above complement elements of the Community Based Disaster Risk Management (CBDRM) Programme of NDMA where MRC will aim to reach 17 Island communities. Key outcomes include development of island disaster management plans, capacity building training on emergency response, first aid and PSS as well as Community Emergency Response Team (CERT) engagement and development and climate awareness campaign. The project involves close coordination and involvement of other key stakeholders in the area.

MRC in partnership with International Federation for Red Cross Red Crescent Societies (IFRC) will be implementing a project 'Strengthening Urban Youth Climate and Resilience Programming' focusing on Youth Led Climate Action where MRC is aiming to roll out the Youth Adapt (Y-Adapt) Programme in 3 administrative bases of MRC. The project focuses on 3 key areas of intervention through youth led initiatives.

- 1. Increase in temperature.**
- 2. Flooding and coastal erosion**
- 3. Climate change and human health**



Source: MRC

06 Monitoring and Evaluation

The monitoring of the roadmap activities will be carried out through quarterly coordination meetings as described in section 5.

Monitoring reports on the progress of the activities shall be prepared by the Ministry of Climate Change, Environment and Energy with the support of the UN Resident Coordinator as required. These reports will assess progress, identify constraints, evaluate risk and inform the policy makers on the implementation progress of the Roadmap.

Evaluation will be conducted at timelines determined by the respective funding modality. Evaluation of progress of the roadmap will be reviewed on an annual basis by the Chair and Pillar leads.



Source: UNRCO

07 Annex

To be included once the gap analysis is finalized.





NDMA
NATIONAL DISASTER
MANAGEMENT AUTHORITY



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Maldivian Red Crescent



WORLD
METEOROLOGICAL
ORGANIZATION



UNDRR
UN Office for Disaster Risk Reduction



Scaling up Early Warning Systems: Checklist for Gap Analysis

Early warning is an important enabler of disaster risk reduction. It can prevent loss of life and reduce the socio-economic impacts of disasters. To be effective, early warning systems need to actively involve the people and communities at risk from a range of hazards, facilitate public knowledge and awareness of risks, disseminate messages and warnings efficiently and ensure that there is a constant state of preparedness and early action is enabled.

This Checklist is structured around the four key elements of effective early warning systems - 1) Risk Knowledge, 2) Detection, Monitoring, Analysis & Forecasting, 3) Dissemination & Communication and 4) Preparedness to Respond - as well as a cross-pillar element. The tool aims to provide a simple list of the main elements, components and products or services that national governments can refer to when developing or evaluating early warning systems, or when verifying that crucial procedures are in place. It is not intended to be a comprehensive manual, but instead a practical tool to ensure that the major elements of a functional and effective early warning system are in place within and across Pillars.

Many countries will have already conducted various types of gap analysis on early warning. Please refer to these to avoid a replication of effort. This tool is available to fill information gaps, where needed, and allow for a holistic understanding of progress against the four pillars and at the inter-pillar level.

The application of the tool would consist of the following actions:

1. Identifying the key products / services of the checklist or answering the questions of the checklist by selecting the availability level that applies.
2. Substantiating responses by providing evidence and relevant resource links where feasible.
3. Highlighting gaps based on stakeholder experience and available documentation.

It is important to ensure that the checklist is compiled based on the feedback of a diverse and inclusive group of stakeholders.

With regards to Pillar 2 on Detection, Monitoring, Analysis & Forecasting, the Checklist provides only an indicative list of questions. As Pillar lead, WMO conducts a dedicated consultation process with constituent agencies (National Hydro-meteorological Services) through which the relevant information is sourced accordingly. Therefore the Pillar 2 checklist provided here is for demonstration purposes only and not intended to be filled in through an additional process.

Ultimately, the Pillar and Cross-pillar Checklists provide a basis to assess needs and priorities to scale-up EWS at national level, as part of a gap analysis exercise. This would then provide the basis to formulate national EW4All implementation roadmaps that outline the steps, actions, support and funding needed to bridge the gaps and implement EWS according to national priorities.

Core Capability for Early Warning Systems: Cross-cutting

EW4ALL Outcome	Question	Self-assessed availability	Description
Outcome 1: Governance, policy and legislation	Is there a clear institutional, policy and legislation framework in place for the development and implementation of early warning systems?		
Outcome 1: Governance, policy and legislation	1.1 Is there national legal and institutional framework in place that provides a basis for implementation of early warning systems and ensures the execution of subsequent early and anticipatory action?	Available	<i>DM Act Part V, Clause 34(U) to (W) states that Establish and maintain a multi-hazard early warning system, disseminate disaster warnings to the public, and ensure information availability in multiple languages during disaster situations.</i>
Outcome 1: Governance, policy and legislation	1.2 Does the institutional or legal framework cover the academia, technical-scientific actors, the private sector, and CSOs and their roles and responsibilities?	Available	<i>National DM steering committee can appoint experts of various sectors as members of the committee. It can also form sub committees and appoint experts to advise the DM steering committee. Experts is regarded as academia and scientific and technical actors DM Act also provides roles and responsibilities of private sector and CSO in DM</i>
Outcome 1: Governance, policy and legislation	1.3 Are there national policies in place that provide guidance for the development and implementation of early warning systems?	Partially available	<i>DM act states an end to end early warning should be established</i>
Outcome 1: Governance, policy and legislation	1.4 Are agreements and interagency protocols established for data exchange of monitoring systems based on open source data and platforms and baseline data necessary to produce data products for all priority hazards? (CREWS custom indicator)	Not available	
Outcome 1: Governance, policy and legislation	1.5 Is there a system for cross-border exchange of warnings with neighbouring countries, through bilateral / multilateral agreements for all priority hazards? (CREWS custom indicator)	Available	<i>Maldives has partnerships with Meteorological Organizations at regional level, is a member of WMO, IOTWS and RHIMES Panel on tropical cyclone (PTC) for Indian ocean region</i>
Outcome 1: Governance, policy and legislation	1.6 Do EWS policies and legislation address issues related to equity, social inclusion, and gender in the development and implementation of early warning systems?	Available	<i>Maldives Constitution as the supreme law of the land promotes gender equality and non discrimination through its bill of rights DM Act states that the state should not discriminate anyone in matters relating to DM</i>
Outcome 1: Governance, policy and legislation	1.7 Does EWS legislation provide for the protection of personal information collected through early warning systems?	Not available	<i>No specific EWS legislation exists</i>
Outcome 2: Coordination	Is there effective coordination between relevant agencies and stakeholders?		
Outcome 2: Coordination	2.1 Has a stakeholder mapping been conducted to identify key stakeholders and their roles and responsibilities in the development and implementation of early warning systems?	Partially available	<i>Stakeholders mappings has been undertaken in areas related to DM and CC</i>
Outcome 2: Coordination	2.2 Is there an institutional framework that clearly defines the roles and responsibilities of government agencies, civil society organizations, and other stakeholders involved in the development and implementation of early warning systems?	Partially available	<i>Government approved mandates of NDMA and MMS will describe their roles and responsibilities in relation to EWS</i>
Outcome 2: Coordination	2.3 Are there multi-stakeholder platforms, such as working groups or committees, to facilitate coordination and collaboration among stakeholders involved in early warning systems?	Partially available	<i>DM steering committee can act as a multi-sector platform</i>

Outcome 2: Coordination	2.4 Are representatives of key communities (including women, persons with disabilities, youth, rural communities, etc.) included as stakeholders in the development and implementation of early warning systems, and their views and perspectives taken into account in decision-making processes?	Not available	
Outcome 2: Coordination	2.5 Have broad multi-stakeholder forecast-based plans and protocols been tested during the course of the last year to increase local capacities in EAP development, readiness and pre-positioning activities (e.g., civil society base, logistics, cash)?	Not available	
Outcome 3: Communication and advocacy	Is there targeted communication, outreach and advocacy to promote the benefits of EWS at national and local level?		
Outcome 3: Communication and advocacy	3.1 Is there a national communication plan or strategy that outlines the target audiences, key messages, communication channels and activities to be implemented in promoting early warning systems?	Not available	
Outcome 3: Communication and advocacy	3.2 Are awareness-raising activities and campaigns conducted to inform the public, relevant stakeholders, and decision-makers about the importance of early warning systems and their benefits?	Partially available	<i>No specific plan. But community based disaster risk management programmes conducted by NDMA and Maldivian Red Crescent will cover awareness raising components</i>
Outcome 3: Communication and advocacy	3.3 Are key stakeholders - including government agencies, civil society organizations, private sector, local communities and volunteers - engaged to build consensus and support for the implementation of early warning systems?	Partially available	<i>Early warning messages are shared amongst key government sectors such as the education sector.</i>
Outcome 3: Communication and advocacy	3.4 Is communication with the media established to increase awareness and understanding of early warning systems and their role in promoting disaster risk reduction and anticipatory action?	Partially available	<i>Media engagement workshops/activities has been undertaken but requires more capacity building to promote role of media in awareness raising, drr and preparedness</i>
Outcome 4: Planning and finance	Is there a medium-term plan for the development and implementation of early warning systems that takes into account changing environmental and socio-economic conditions?		
Outcome 4: Planning and finance	4.1 Are adequate financial resources allocated for the development and implementation of early warning systems and early action at national level? Do they reach the last mile?	Partially available	<i>Government provides budget allocation for MMS and NDMA to ensure early warning messages are generated and disseminated. Requires more investment to ensure it reaches last mile</i>
Outcome 4: Planning and finance	4.2 Are sustainable financing mechanism in place to ensure the continuity of early warning systems over the long term?	Not available	
Outcome 4: Planning and finance	4.3 Is there engagement with a range of stakeholders, including civil society organizations, the private sector, and international organizations, to leverage additional resources and ensure that the planning and financing of warning systems reflect diverse perspectives and needs?	Not available	
Outcome 4: Planning and finance	4.4 Is there a mechanism to track finance for anticipatory action in the national budget?	Partially available	<i>MoF has rolled out programme budget to government agencies which can track activities. Budget tagging has also been proposed</i>
Outcome 4: Planning and finance	4.5 Are mechanisms in place for mobilizing financial and other resources for the development and implementation of early warning systems, including through public-private partnerships and other innovative financing mechanisms (resilience dividends approach)?	Not available	
Outcome 4: Planning and finance	4.6 Has transparency and accountability in the planning and financing of early warning systems been ensured, including by providing publicly available information on budget allocation, expenditures, and results achieved?	Partially available	<i>MOF publishes budget related statistics and data.</i>
Outcome 5: Monitoring & Evaluation	Is there a clear mechanism for monitoring and evaluating the effectiveness of early warning systems?		
Outcome 5: Monitoring & Evaluation	5.1 Are there clear and well-defined objectives for early warning systems to be monitored and evaluated against?	Not available	
Outcome 5: Monitoring & Evaluation	5.2 Are there performance indicators that can be used to monitor and evaluate the effectiveness of early warning systems. These indicators should be specific, measurable, and relevant to the objectives of the early warning systems	Not available	
Outcome 5: Monitoring & Evaluation	5.3 Is there a reliable and consistent system for collecting data on early warning system activities, including data on the use of early warning messages, response rates, and system performance?	Not available	
Outcome 5: Monitoring & Evaluation	5.4 Are there regular reports on the performance of national early warning systems, including information on the use of warning messages, response rates, and system performance against performance indicators?	Not available	
Outcome 5: Monitoring & Evaluation	5.5 Are there mechanisms in place to collect authoritative and objective feedback from relevant stakeholders regarding the effectiveness of early warning systems across different sectors?	Not available	

Outcome 5: Monitoring & Evaluation	5.6. Are there mechanisms in place to incorporate cross-pillar feedback from lessons learned and exercises undertaken to test and optimize the effectiveness of the EWS when developing risk assessments and developing/improving warning messages and operational forecasting processes and when developing/improving communication dissemination agreements and protocols among agencies, institutions and the public. (CDEMA combined)	Not available	
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Core Capability for Risk Knowledge: Itemised Checklist

EW4ALL Pillar 1 Outcome	Risk Knowledge Component (compliant with CDEMA checklist)	Associated product, system or service	Self-assessed availability	Link to source / data (if available)
Multiple	1. Are key hazards and related threats identified?			
Outcome 1: Production of RK	1.1. Characteristics of key hazards to which the country is exposed (e.g. geographical extent, magnitude, intensity, frequency, probability), including possible cascading hazardous events, are analysed, historical data evaluated and potential future risks assessed	1.1.a. Hazard assessments based on historical data, scientific models, ILK are conducted for top 5 hazards (or hazards responsible for 90% of past L&D); no less than 5 years old. 1.1.b. Methodology and process for conducting hazard & risk assessments for top 5 hazards (or hazards responsible for 90% of past L&D)	Partially available Not available	<i>The Risk profile of Maldives in outdated (developed with support of UNDP in 2006). Detail Island Risk Assessments of 9 islands available Local HVCA is being conducted through CBDRM program in local communities.</i> No standardized risk assessment methodology. However, methodologies can be found on previous risk assessments, eg DIRMAM 2009
Outcome 1: Production of RK	1.2. Hazard maps (dynamic and multi-hazard, when possible) are developed that identify the geographical areas/people that could be affected by hazards	1.2.a. Single-hazard maps with a technical format that allows overlaying different hazard and exposure maps, e.g. GIS; conducted for top 5 hazards, less than 5 year old	Partially available	NDMA through support of UNESCAP/UNDP is generating single hazard GIS maps
Outcome 1: Production of RK	1.3. Climate impact projections are developed (<i>Advanced capability, to be considered if relevant</i>)	1.3.a. Socio-economic and environmental impact analysis of climate projections for temperature, precipitation, wind patterns, sea-level change are developed at national and local level and updated every 5 years: e.g. impacts on health services, agri-food systems, displacement, etc. (aligned with UNFCCC reporting, NDCs, NAPs)	Available	Climate Risk Atlas of Maldives provides climate change projections
Outcome 4: Monitoring & Evaluation	1.4. Disaster impact data / losses and damages are tracked and recorded systematically, aligned with Sendai and SDG targets and indicators	1.4.a. Tracking system for hazardous events and disaster losses and damages established, with data disaggregated by sex, age, disability, sector & geography 1.4.b. Historical disaster impact data for all priority hazards by sector (e.g. geographical extent, magnitude, intensity, frequency, etc.) 1.4.c. All priority hazardous events are recorded and connected to loss and damage reports	Partially available Partially available Partially available	NDMA tracks and collects damage assessment on all household level emergencies. Data collected at NDMA are being uploaded to Desinventar (updated:2022), however data disaggregation is limited. Damage and Loss data through Desinventar provides info on previous events from 1990s to today.
Multiple	2. Are exposure, vulnerabilities, capacities and risks assessed?			
Outcome 1: Production of RK	2.1. Assessment and quantification of exposed people, services and critical infrastructure conducted and mapped for all relevant hazards, as well as of any compounding risks, at local level in both rural and urban areas and coastlines	2.1.a. Census / survey data on exposed people: less than 5 years old, granular, disaggregated 2.1.b. Inventories & databases of exposed infrastructure: less than 10 years old; granular, disaggregated 2.1.c. Inventories & databases of exposed agricultural land, assets, etc.: less than 10 years old; granular, disaggregated 2.1.d. Inventories & databases of exposed services: less than 5 years old; granular, disaggregated 2.1.e. Inventories & databases of exposed ecosystem services: less than 10 years old	Available Partially available Partially available Partially available Partially available	Multihazard risk atlas provides info on critical assets such as health facilities, harbors, etc Multihazard risk atlas provides info on critical assets such as health facilities, harbors, etc Multihazard risk atlas provides info on critical assets such as health facilities, harbors, etc Multihazard risk atlas provides info on critical assets such as health facilities, harbors, etc
Outcome 1: Production of RK	2.2. Data on exposure, vulnerability, impacts (loss and damage), harvested area, and production are collected, and risks are assessed in the agri-food sector (crops, livestock, forestry, fisheries, aquaculture) for top 5 hazards (hazards responsible for 90% of past L&D in the sector)	2.2.a. Database on disaster impacts and risks assessments for the agri-food sector; data is disaggregated (by crop, livestock, etc.) for past 5 years and updated annually; risk assessments updated every 5 years;	Partially available	NDMA has limited data on agricultural fields damages Agronat has limited data on damage on crops due to weather events
Outcome 1: Production of RK	2.3. Impacts to critical infrastructure and secondary risks associated with these impacts are evaluated, and risk management solutions considered to increase resilience	2.3.a. Impact assessment methodologies, including for the evaluation of vulnerability and coping capacity. 2.3.b. Analysis of potential impacts and stress-testing of critical infrastructure 2.3.c. Analysis of cascading risks to critical infrastructure and secondary impacts to the socio-economic system	Not available Not available Not available	
Outcome 1: Production of RK	2.4. Vulnerability factors such as gender, disability, access to infrastructure and services, economic diversity, societal inequalities and environmental sensitivities considered	2.4.a. Census and survey data on gender, disability, economic status, livelihoods, access to services, etc.: less than 5 years old, granular and disaggregated	Available	2022 Census report.
Outcome 1: Production of RK	2.5. Vulnerabilities of key economic sectors at national to local levels assessed	2.5.a. Survey data, historical records of past events, loss and damage databases, PDNA: less than 5 years old, findings compiled and validated by key stakeholders	Available	Events of past 5 years is could be retrieved from NDMA and the Desinventar.
Outcome 6: ILK for Risk Knowledge	2.6. Local and Indigenous knowledge (ILK) integrated into risk assessments	2.6.a. Statistical working system in place to collect, manage and analyse risk information and incorporate local and community level data; updated every 5 years. 2.6.b. Compilation of indigenous / local knowledge used by local communities to identify risks	Partially available Partially available	NDMA logs all events reported, collect damage assessments to residential hazards and utilize this for annual reporting NDMA conducts HVCA's based on community and traditional knowledge. 62 HVCA's conducted upto date
Outcome 1: Production of RK	2.7. Activities that increase or compound risks (e.g. urbanization and land use) identified and evaluated (<i>Advanced capability, to be considered if relevant</i>)	2.7.a. Reports assessing relevant risk drivers at national level: e.g. urbanisation, food production, infrastructure, demographics, land use patterns	Partially available	Drivers are broadly described in Risk Profile of (2006) but no specific reports on risk drivers
Outcome 3: Use of RK for EWS	2.8. Risk assessment results integrated into local risk management plans and warning messages in a clear and easy-to-understand language with attention to how different people access information	2.8.a. National and local DRN/M plans with a quantitative section on vulnerability, exposure and historical loss 2.8.b. Early warning systems messages, triangulated with hazard, vulnerability and exposure data	Partially available Partially available	DM Profile provides overall exposure vulnerability information and local DM plans in the 62 islands is developed using the HVCA tools NDMA can triangulate Damage assessment reports with early warning messages
Outcome 6: ILK for Risk Knowledge	2.9. Legislation and cultural norms assessed to identify gaps that may increase vulnerability	2.9.a. Risk and EWS perception studies	Partially available	NDMA can triangulate Damage assessment reports with early warning messages
Outcome 5: Stakeholder coordination	3. Are roles and responsibilities of stakeholders identified?			
Outcome 5: Stakeholder coordination	3.1. Key national government agencies involved in risk assessments are identified and roles defined through official / legal mechanisms	3.1.a. Agencies have assigned mandates, roles, responsibilities and technical focal points on EW	Available	DM act and NEOP assigns roles and responsibilities on EW to stakeholders. Hazard event logging and damage assessment guidelines are provided through Regulation by NDMA
Outcome 5: Stakeholder coordination	3.2. Legislation or government policy mandating the preparation of hazard, vulnerability and capacity assessments for all areas are in place	3.2.a. Official legislation, policy documents and mandates developed and endorsed	Available	Disaster Management Act 2015, Climate Emergency Act 2021, Strategic Action Plan (2019 - 2023)
Outcome 5: Stakeholder coordination	3.3. Responsibility for coordinating hazard identification and risk information assigned to one national organization with a view to consolidating approaches and monitoring linkages and cascading impacts	3.3.a. National focal agency with an official mandate on risk information	Available	NDMA under NDM Act
Outcome 5: Stakeholder coordination	3.4. Standardised process developed for scientific and technical experts to assess and review the accuracy of risk data and information	3.4.a. Team of experts trained in the collection, production, verification, use and dissemination of risk information	Not available	
Outcome 5: Stakeholder coordination	3.5. Process developed to actively engage rural and urban communities in local hazard and risk assessments taking into consideration the needs of all people (women, children, older people, people with disabilities, etc.)	(same as 2.4.a above)	Available	
Multiple	4. Is risk information consolidated?			
Outcome 2: Open Access to Risk Information	4.1. Central standardized repository (including but not limited to a Geographic Information System) established to store all event/disaster and risk information	4.1.a. Risk information database(s), server(s) and knowledge platforms: on top 5 hazards, updated every 5 years and servers serviced annually	Not available	
Outcome 4: Monitoring & Evaluation	4.2. National standards (where possible following international standards) established for the systematic collection, sharing and assessment of risk information and data, related to hazards, exposures, vulnerabilities and capacities (utilising a gender responsive process when possible)	4.2.a. National progress on Target G reported in the Sendai Framework Monitor for the past 5 years 4.2.b. Set of national statistical standards for risk information: collection, management, analysis, use and dissemination of risk data and information, updated every 5 years.	Partially available Not available	Included in the SFDRR reporting

Outcome 1: Production of RK	4.3. Standardized vulnerability data and information disaggregated by sex, age and disability	(same as 2.4.a. above)	Partially available	NDMA logs all events reported, collect damage assessments to residential hazards and utilize this for annual reporting
Outcome 1: Production of RK	4.4. Process established to maintain, regularly review, and update risk data, including information on any new or emerging vulnerabilities and hazards, with roles and responsibilities of stakeholders identified along with appropriate funding	(same as 4.2.a. above)	Partially available	NDMA logs all events reported, collect damage assessments to residential hazards and utilize this for annual reporting
Outcome 3: Use of RK for EWS	5. Is risk information properly incorporated into the early warning system?			
Outcome 3: Use of RK for EWS	5.1. Information on the geographical extent of hazards used to define safe areas and evacuation zones	5.1.a. Evacuation routes, maps and safe areas maps (including shelters) that use risk, vulnerability and exposure information, assessments, models, projections, and general knowledge (scientific and traditional)	Partially available	Disaster Management Plans developed in 62 islands have evacuation plans, routes and centers. But the maps are not digital.
Outcome 3: Use of RK for EWS	5.2. Risk information on vulnerable groups (hazard, exposure, differential vulnerability) used to identify and define evacuation routes and location of temporary shelters	(same as 2.4.a. above)	Partially available	
Outcome 3: Use of RK for EWS	5.3. Risk information on different types of assets, critical infrastructure, services and businesses reviewed to outline procedures to minimize damage or loss of such assets once a warning is issued	(same as 5.1.a. above)	Not available	
Outcome 2: Open Access to Risk Information	6. Is there open access to risk information nationally and at the local level?			
Outcome 2: Open Access to Risk Information	6.1. Up-to-date risk information is easily accessible by relevant stakeholders at the national level	6.1.a. National open-access platforms (websites, databases, etc.) used to store, access, share and disseminate up-to-date and anonymised risk information	Partially available	There is data sets available but the access is limited due to silo nature of working between agencies
Outcome 2: Open Access to Risk Information	6.2. Up-to-date local-level risk information is easily accessible by local authorities, communities and the public	Done at island level but not consolidated at the national level.	Partially available	There is data sets available but the access is limited due to silo nature of working between agencies
Outcome 7: Innovation for RK	7. Are innovations promoted for risk knowledge scale-up and improvement?			
Outcome 7: Innovation for RK	7.1. New or advanced technologies employed for the collection, production, analysis, dissemination and use of risk information	7.1.a. Any use of: remote sensing technologies, including geographic information systems (GIS) and open-sourced satellite information, in-situ data collection technology, digital-based (e.g. mobile or tablet-based) data collection technology and storage, cloud-based computing, digital communication tools and web or mobile-based apps	Not available	
Multiple	8. Does risk knowledge incorporate environmental dimensions?			
Outcome 1: Production of RK	8.1. Assessment and quantification of exposed species is conducted and mapped for relevant hazards	8.1.a. Geographic Information Systems (GIS) used to prepare vulnerability maps;	Not available	
		8.1.b. Statistical working system to collect, manage and analyse data on environmental vulnerabilities (updated every 5 years);	Not available	
		8.1.c. Inventories of vulnerable species and ecosystems, updated every 5 years	Partially available	Studies have been conducted by ministry of environment
		8.1.d. Hazard maps overlaid with biodiversity data	Not available	
Outcome 1: Production of RK	8.2. Historical data on hazards and their environmental impact has been collected	8.2.a. Digital databases of historical data on environmental impacts, covering last 20 years and updated annually	Not available	
Outcome 6: ILK for Risk Knowledge	8.3. Local and indigenous knowledge on environmental vulnerabilities is integrated into risk assessments	8.3.a. Risk assessments include local and indigenous knowledge about environmental vulnerabilities;	Partially available	At local when IDMP is conducted the indigenous knowledge is referred to
		8.3.b. Digital systems in place to enable communities to collect and report environmental data	Not available	
Outcome 5: Stakeholder coordination	8.4. Scientific community is engaged for analysis of environmental risks and vulnerabilities associated with climate change	8.4.a. Scientific reports and articles on the climate-biodiversity nexus are prepared	Not available	The ecological assessment on biodiversity & management published by ministry of environment
Outcome 3: Use of RK for EWS	8.5. Identified risks are included in environmental management plans and strategies	8.5.a. Environmental management plans and strategies cover climate-related hazards and associated risks	Available	Maldives Climate Change Policy Framework
Outcome 5: Stakeholder coordination	8.6. Partnerships with relevant stakeholders in environmental protection are established; these stakeholders have been engaged in the development of disaster risk reduction strategies	8.6.a. Relevant stakeholders engaged in environmental protection have assigned mandates, roles, responsibilities and technical focal points on disaster risk reduction	Partially available	The provision is there in the DM Act but need to be further elaborated.
Outcome 2: Open Access to Risk Information	8.7. Institutional arrangements and technical capacity are in place to exchange environmental hazard data between relevant stakeholders (NMHS, environmental agencies)	8.7.a. Institutional arrangements and digital infrastructure are in place to enable data exchange between relevant stakeholders	Not available	

Core Capability for Dissemination & Communication: Itemised Checklist

Key actors: National and local disaster management agencies; scientific and technical agencies such as meteorological and hydrological organizations, health authorities and geophysical agencies; military and civil authorities; telecommunication organizations (e.g. national telecommunication regulators, satellite and mobile-cellular network operators), media organizations (e.g. television, radio and social media) and amateur radio; businesses in vulnerable sectors (e.g. tourism, care facilities for older people, marine vessels); community-based and grassroots organizations; international and United Nations agencies

EW4ALL Pillar 3 Outcome	Component	Associated product, system or service	Self-assessed availability	Link to source / data (if available)
1. Are organizational and decision-making processes in place and operational?				
Outcome 1: Governance	1.1 Functions, roles and responsibilities of each actor in the warning dissemination process enforced through government policy or legislation at all levels and included in the warning communication strategies and standard operating procedures.	<ul style="list-style-type: none"> Direct observation of existing policies, legislation, protocols and mechanisms related to the procedures of alert. Interviews with key people associated with both political profile as technical mechanisms Interviews with key people associated to organizations of major groups (including community-based groups representing women, children and youth, people with disabilities, farmers etc) 	Partially available	<p>Available:</p> <ol style="list-style-type: none"> Disaster Management (DM) Act 2015 Climate Emergency Act 2021 Regulation on Humanitarian Damage Assistance during emergencies National Emergency Operations Plan (NEOP) NDMA has established hazard logging and incident reporting SOPs MM Act <p>Gaps:</p> <ol style="list-style-type: none"> The need to update MM Act to incorporate latest early warning dissemination policies and legislations Lack of observation of dissemination mechanisms included in the DM Act, such as: <ol style="list-style-type: none"> Implementation of dissemination protocol to cover all networks (NGOs, migrants, disabled etc) and establishing clear roles and responsibilities of actors in early warning dissemination process Establishing a National Multi Hazard Early Warning (EWS?) Platform, updating government policies on who will be responsible to maintain and coordinate the platform Lack of interviews with key people associated to organisations and major groups Lack of development and implementation of coordinated and integrated protocols to communicate timely dissemination
Outcome 1: Governance	1.3 Regular coordination, planning and review meetings between the warning issuers, the media and other stakeholders	<ul style="list-style-type: none"> Protocols for activation of the warning (if any) Records and reports of simulation exercises and drills. Women and men are both part of volunteer network trained and empowered to receive and widely disseminate early alerts to remote households and communities 	Partially available	<p>Available:</p> <ol style="list-style-type: none"> National Emergency Operations Plan Island Level DM Plans activates community response mechanism Hazard Vulnerability and Capacity Assessment's incorporates risk information to local development plans <p>Gaps:</p> <ol style="list-style-type: none"> Need to establish a volunteer network with strategies on how to train, empower and keep volunteers updated and coordinated with the latest means of dissemination Lack of a central digital system to allow regular coordination and management of all protocols to be utilized by the warning issuers, media and stakeholders. This includes regular management and retrieval of records and reports of simulation exercises and drills (currently not updated routinely)
Outcome 3: Inclusion and people-centered approach including through existing local networks.	1.4 Professional and volunteer networks exist to ensure that last-mile stakeholder groups, receive and disseminate warnings widely	<ul style="list-style-type: none"> Protocols for activation of the warning (if any) Records and reports of simulation exercises and drills. 	Partially available	<p>Available:</p> <ol style="list-style-type: none"> Sectoral level: Health Emergency and National Emergency Operations Plan (NEOP), Emergency Response Policies & Mechanisms at an institutional level. NDMA facilitate coordination and response efforts among various stakeholders National Level – First responders and critical service sectors/providers established Disaster Management Plans developed locally have evacuation plans, routes and centers which includes some last-mile stakeholders groups <p>Gaps:</p> <ol style="list-style-type: none"> Few volunteer networks are now involved to ensure last-mile groups receive the warnings widely Lack of professionals being trained to reach all stakeholders Lack of reach of early warning messages to NGO, migrants and disabled network due to lack of involvement of these networks during development and implementation of protocol for dissemination No standard reporting and simulation exercise protocol to cover all networks
Outcome 3: Inclusion and people-centered approach including through existing local networks.	1.5 Communication strategies evaluated and feedback mechanisms in place to verify that warnings have been received and to correct potential failures in dissemination and communication, leading to trust among and between stakeholders.	<ul style="list-style-type: none"> Two-way and interactive communication system allows for verification, so it can be determined that everyone has received warnings. Records and reports of simulation exercises and drills. Reviews on communication strategies 	Partially available	<p>Available:</p> <ol style="list-style-type: none"> Moosum App by MMS, Viber groups used for two-way communications Social Media Platforms (App, Viber, Twitter) <p>Gaps:</p> <ol style="list-style-type: none"> Lack of data integration between authorities to provide efficient feedback mechanism Lack of means to verify and validate interactions between reporters and their authenticity Team of experts needs to be identified and trained for the collection, production, verification, of information shared for dissemination of risk information Lack of efficient reporting feedback to verify that everyone has been received warnings Lack of drills and simulations related to this area
2. Are communication systems and equipment in place and operational?				
Outcome 2: Infrastructure networks and services	2.1 Understanding of last-mile connectivity to know which population groups can be reached by different services, including mobile-cellular, satellite and radio services	<ul style="list-style-type: none"> coverage data on mobile phone coverage, radio and TV coverage and household availability, complemented by baseline assessment to understand a country's situation 	Partially available	<p>Available:</p> <ol style="list-style-type: none"> Key hazards to Maldives are somewhat assessed and evaluated in multiple forms (e.g. DIRAM, Risk Profile) however most of the documents are outdated. Climate Risk Atlas of Maldives provides climate change projections Dynamic and Multi Hazard maps (GIS) are being developed through support of UNESCAP/UNDP <p>Gaps:</p> <ol style="list-style-type: none"> Lack of means to identify geographical areas that need special means of dissemination Lack of assessments in place to understand last-mile connectivity to which groups can be reached
Outcome 2: Infrastructure networks and services	2.2 Warning communication and dissemination systems reach the entire population, including seasonal populations and those in remote locations, through multiple communication channels (satellite and mobile-cellular networks, social media, flags, sirens, public address systems, etc)	<ul style="list-style-type: none"> Interviews with relevant institutions/NGOs/CBOs Reviews on communication strategies Two-way and interactive communication system allows for verification, so it can be determined that everyone has received warnings. 	Partially available	<p>Available:</p> <ol style="list-style-type: none"> MRC Island level organizations, utility providers, transport services Awareness programs, interviews with facilitators, and visibility campaigns including radio spots are used to promote and disseminate information <p>Gaps:</p> <ol style="list-style-type: none"> Most EWS are located in specific regions due to which dissemination process is not accurate enough Lack of use of call broadcasting Lack of involvement with Institutes/NGOs/CBOs Current applications require upgrade or integration between one another for accurate data dissemination 6% of the population without mobile phones and 14% without access to the Internet; need to consider traditional warning dissemination channels (e.g., shell sirens, loudspeakers) and use them for systematically

	2.2.1 Mobile early warning systems, in particular cell-broadcast system and/or location-based SMS system, in place to alert the population via mobile network	<ul style="list-style-type: none"> Record from Mobile Network Operators on using cell-broadcast and Location-based SMS. 	Available	<p>Available:</p> <ol style="list-style-type: none"> Social Media Platforms (App, Viber, Twitter) / Websites SMS sent to concerned authorities and focal points (Pass the message to the concerned sectors within their responsible organisation) NDMA / MNDF / PSM / TVM / MPS has allocated hotlines (Phone/Video Calls) to Pass message to public <p>Gaps:</p> <ol style="list-style-type: none"> Lack of use of cell broadcasting In need to use location based SMS efficiently to cover specific areas
	2.2.2 Agreements developed to utilize private sector resources where appropriate (e.g. mobile-cellular, satellite, television, radio broadcasting, amateur radio, social media) to disseminate warnings	<ul style="list-style-type: none"> Agreements with private sector entities. Multiple communication mediums for warning dissemination are used, encompassing those used or preferred by women. 	Partially available	<p>Gaps:</p> <ol style="list-style-type: none"> Partnerships with the media need to be enhanced so that the right information is provided at the right time; need for MoUs to promote partnerships for resource mobilisation Lack of use of CAP by authorities to share consistent information
Outcome 2: Infrastructure networks and services	2.5 Early warning infrastructure and systems are tested, maintained and upgraded to ensure resilience, redundancy, and functionality with back-up systems and processes in place.	<ul style="list-style-type: none"> Schedule of equipment maintenance including upgrading Record of communications systems including redundancies Record of communications infrastructure consultation with private sectors such as mobile network operators 	Partially available	<p>Gaps:</p> <ol style="list-style-type: none"> Impacts to critical infrastructure and secondary risks associated with these impacts are not being fully evaluated Council staff could be trained to undertake regular maintenance/functionality checks on EWS installed on islands (in the case of less complicated systems) Need to bring upgrades to current infrastructure as well as procure infrastructure to cover geographical areas which are currently not included
3. Are impact-based early warnings communicated effectively to prompt action by target groups?				
Outcome 4: Quality and trust	3.1 Common alerting protocol (CAP) adopted for warning messages to make sure alerts sent across the different channels are consistent in order to avoid confusion and reinforce the message.		Partially available	<p>Gaps:</p> <ol style="list-style-type: none"> Lack of awareness to authorities on integrating CAP to disseminate EW
Outcome 3: Inclusion and people-centered approach including through existing local networks.	3.3 Impact-based early warning messages should communicate risk clearly and provide advice on actions that can be taken to reduce risks	<ul style="list-style-type: none"> Records of early warning messages Records and reports of simulation exercises and drills. Interviews with key technical officers, NGOs/CBOs 	Not available	
Outcome 3: Inclusion and people-centered approach including through existing local networks.	3.4 In the case of events with a short timeframe for reaction (e.g. earthquake early warning), automated systems should be in place to mitigate impacts (e.g. automatic stop of transport, activation of red lights in tunnels, stopping elevators on the closest floor, opening of fire-truck gates, etc.	<ul style="list-style-type: none"> After action reviews Studies to determine how people access and interpret early warning messages. 	Not available	<p>Other gaps:</p> <ol style="list-style-type: none"> Global observing system - need automatic weather stations Remote sensing data - don't have capacity to manipulate big data and made predictions, simulation
Outcome 3: Inclusion and people-centered approach including through existing local networks.	3.5 Public and other stakeholders are aware of which authorities issue the warnings and trust their message		Partially available	<p>Gaps:</p> <ol style="list-style-type: none"> Lack of well-established Coordination Mechanism among stakeholders. Clearer roles and responsibilities should be enforced

Minimum Core Capability for Preparedness to Respond: Itemised Checklist

EW4ALL Pillar 4 Outcome	Preparedness to Respond Component (compliant with CDEMA checklist, as well as CREWS and WMO)	Associated product, system or service	Self-assessed availability	Link to source / data (if available)
Outcome 1: Comprehensive Risk Management Policy, Laws and Strategies	Is there a process to review crisis/disaster risk management and climate adaptation laws, policies and/or plans?			
Outcome 1: Comprehensive Risk Management Policy, Laws and Strategies	Standard operating procedures are in place at country level: - Common Alerting Protocol (CAP) - Impact Based Forecasting & Warning Services (IBFWS) - Global Multi-hazard alert system (GMAS)	~	Partially available	- MMS's CAP Alerts SOP to include Preventative Measures (Supported by Other Agencies) - IBFWS development in Progress - to be linked to CAP SOP - GMAS Alerting - Carried out by different agencies. No national SOP. GAP: National level SOP on alerting systems integrating IBFWS & GMAS according to CAP Standard
Outcome 1: Comprehensive Risk Management Policy, Laws and Strategies	EWAA is integrated in district and community-level disaster risk management, climate, development and/or resilience planning (i.e. there are mechanisms to disseminate warnings and activate local plans ahead of extreme weather impacts)	~	Partially available	Partial mechanisms in place in community level to disseminate warnings and activate local plans Update: Alerting systems in place to communities via identified focal points / Councils.
Outcome 1: Comprehensive Risk Management Policy, Laws and Strategies	Broad multi-stakeholder forecast-based plans and protocols have been tested during the course of the last year to increase local capacities in Early Action Protocol (EAP) development, readiness and pre-positioning activities (e.g., civil society base, logistics, cash)	~	Not available	No Early Action Protocol in place. Some Island Communities have Early Action Activities identified via DM Plan - Linked with CBDRM Programme
Outcome 1: Comprehensive Risk Management Policy, Laws and Strategies	Social protection systems integrate anticipatory action and preparedness, and can respond effectively to the diverse needs and impacts on affected people, incl. marginalised groups.	~	Not available	To identify existing linkage of Socail Protection Systems on Preparedness - Are there any SOP's? GAP: National level SOPs linking SPS into preparedness
Outcome 2: Local preparedness capacities	Is there a mechanism to track how many warnings lead to the activation of early action protocols? Is there an increase year to year in this percentage?			

Outcome 2: Local preparedness capacities	Disaster preparedness, including plans or standard operating procedures, developed in a participatory manner, account for the needs of people with different vulnerabilities, and are disseminated to the community, practiced and underpinned by legislation where appropriate	<ul style="list-style-type: none"> Disaster preparedness plans - SOPs - Response plans Contingency plans Legislation Risk scenarios Emergency preparedness and response plans are disseminated 	Partially available	<p>DM act established including identification roles /responsibilities of government other organizations. Island Disaster Management Plans (IDMP) developed at some communities - No. of IDMP's developed to be verified, to verify reach of IDMP process/action points to communities. Reach of DM act/ roles and responsibilities to be measured</p> <p>Gaps: Awareness Process to Dissemination of existing SOPs/ DM's Plan / DM Process to communities (Add to Road Map)</p>
Outcome 2: Local preparedness capacities	Multi-hazard risk assessments utilized to develop and update disaster preparedness plans and design evacuation strategies (evacuation routes, demarcation of safe areas and location of temporary shelters, use of vertical evacuation if needed) (Source: WMO Checklist)	~	Partially available	<p>Island Disaster Management Plans (IDMP) developed at some communities. Guidance documents on the IDMP process developed by NDMA</p> <p>Gaps: DM Plans developed in 68 / 186 Islands (118 Islands have no DM plans)</p>
Outcome 2: Local preparedness capacities	Community's ability to respond effectively to early warnings assessed, particularly women and people in vulnerable conditions, and their capacities have been strengthened through training and equipping	~	Partially available	<p>Island Disaster Management Plans (IDMP) developed at some communities including establishment of CERTS and capacity building of CERTS. Not reflected across all Island communities. Other useful documents include National Emergency Operations Plan (NEOP)</p>
Outcome 2: Local preparedness capacities	Contingency planning developed in a scenario-based manner following forecasts or likely scenarios across different timescales (short-term, seasonal, long-term) and informed by climate projections and scientific research		Not available	<p>Gaps: Only 68 /186 islands have Disaster Management Plans in Island Communities</p>
Outcome 2: Local preparedness capacities	Anticipatory action and response options across time and geographical scales are linked to the provision of funding to support them	~	Not available	<p>Gaps: What are the response Funds available for communities.</p>
Outcome 2: Local preparedness capacities	Strategies implemented to maintain preparedness for longer return-periods and cascading hazard events	~	Not available	<p>Gaps: Updating of DR Country Profile Awareness / Dissemination process of country Profile for community</p>
Outcome 2: Local preparedness capacities	Protocols incorporated in the plans or standard operating procedures to reach emergency and health services that need to be ready to respond to events promptly		Partially available	<p>National Emergency Operations Plan (NEOP), MRC Disaster Risk Management Policy, Health Emergency Operations Plans (HEOP) developed. Additional protocols /manuals developed by First Responders required</p> <p>Gaps: Are Policies based on Hazards/Emergencies (To be reviewed)</p>
Outcome 2: Local preparedness capacities	Protocols established to evacuate last mile operators (e.g. local police, firefighters, volunteers, health services) who disseminate warnings to the public and decide public measures, including issuing orders for evacuation or shelter-in-place.		Not available	<p>Gap; No Protocols for evacuation of Last Mile Operators Define last mile operators for Island Communities Awareness/Dissemination of protocols to Communities</p>

Outcome 2: Local preparedness capacities	Regular exercises undertaken to test and optimize the effectiveness and inclusiveness/accessibility of the early warning dissemination processes, preparedness and response.		Partially available	Simulation exercise documented with inputs collected from participants from diverse backgrounds including men and women. Information/data required on frequency and effectiveness of emergency drills and tests, impacts of gender-differentiated response to previous disaster and analysis as well as vulnerable groups ability to respond to EW (women, migrants etc) Gaps: Standardized Documentation Process / Feedback
Outcome 2: Local preparedness capacities	Local governments have a plan to act on early warnings	~	Partially available	Island Disaster Management Plans (IDMP) developed at some communities. No. to be verified Additional Inputs from NDMA / LGA as required
Outcome 2: Local preparedness capacities	Public awareness and education on hazards, vulnerabilities, exposure and how to reduce disaster impacts built into school curricula from primary through university.		Partially available	Strategic national Action Plan for DRR & CC (provisional draft) developed by NDMA. Community awareness programmes carried out by keyactors such as MMS, NDMA, MNDF and MRC. SEOP programmes carried out by NDMA/UNDP supported by other actors Gaps: Awareness / Dissemination Process for Public awareness
	Public education provided to recognise hydro-meteorological and geophysical hazard signals and disease signs and symptoms in order to contribute to community surveillance and to allow and promote robust no-regret response measures.		Partially available	Strategic National Action Plan for DRR & CC (provisional draft) developed by NDMA. Community awareness Programmes carried out by key actors such as MMS, NDMA, HPA and MRC. No systematic approach Gaps: Awareness / Dissemination Process for Public awareness
	People educated on how warnings will be disseminated, which sources are reliable and how to respond.	~	Partially available	Alerts through MMS 'Moosun App' / Community communication groups, TV/Radio are known within majority of the community. Reach to public and it's effectiveness has not been measured Gaps: Awareness / Dissemination Process for Public awareness
	Is public awareness and education conducted? (Linkages to Pillars 1, 3 and cross-pillar)	Utilization of most effective media (e.g., established media, social networks, alternative media), complimented with locally used and trusted communication methods, to improve public awareness.	~	MMS, NDMA, MRC, MNDF utilizes their platforms for communication which are picked up by local media. Gaps: Reach of public and it's effectiveness is not measured Awareness / Dissemination Process for Public awareness
	On-going inclusive and accessible public awareness and education campaigns tailored to the specific needs of target groups (e.g., women, children, older people, illiterate and persons with disabilities).	~	Not available	Gaps: Reach of public and it's effectiveness is not measured Awareness / Dissemination Process for Public awareness

	Population at risk took action for a priority hazard when an alert was received	~	Partially available	Based on Alert level from MMS, some communities have taken proactive action. Not properly documented / advisory on preventive measures shared by NDMA/MRC/MNDF during potential extreme events Gaps: Standard documentation of Risk Action Taken including Lesson Learnts/Challenges faced Awareness / Dissemination Process for Public awareness on Risk Action upon received for Alert
	Women's organisations and e.g. organisations of persons with disabilities, lead public awareness and education campaigns for all priority hazards	~	Partially available	WDC or women's groups identified in IDMP in majority of communities as a key actor to fulfil community engagement for awareness and reaching marginalized groups
Outcome 2: Local preparedness capacities Is public awareness and response tested and evaluated?	Previous emergency and disaster events and responses analysed, and lessons learnt incorporated into preparedness and response plans and into capacity building strategies.		Partially available	Assessments carried out by NDMA, Island Disaster Management plans Developed by Communities, past lesson learnts on large scale disasters and reports developed and available. Review of public awareness strategies carried out by NDMA
	Public awareness strategies and programmes evaluated regularly and updated as required.	~	Not available	Gaps: Reach of public and it's effectiveness is not measured Awareness / Dissemination Process for Public awareness
	Drills and exercises conducted with first responders and community	~	Partially available	Community level simulation and exercises have taken place in communities under the CBDRM Programme of NDMA. Does not cover all island communities in the country
	Forecast-based plans and protocols have been tested during the course of the last year to assess the effectiveness of people-centred early warning dissemination processes, anticipatory actions, evacuation strategies and other preparedness and response actions	~	Not available	Gaps: Reach of public and it's effectiveness is not measured Awareness / Dissemination Process for Public awareness
Outcome 2: Local preparedness capacities	Relevant government departments and EWAA partners have conducted a review of existing assessments of institutional and operational capacity needs on preparedness, anticipatory actions and response	~	Not available	Gaps Limited assessment carried out on institutional Operational capacity needs on Preparedness and response actions
	Investments in forecast-based actions incorporate cash systems, supply chains, stockpiling and prepositioning	~	Partially available	NDMA carries out engagement with supply changes, stockpiling and pre-positioning. Partial level of Cash Distribution Setup for impacted personnel via NDMA Gaps Standard process for Cash System
	Existing anticipatory action frameworks and protocols and corresponding sources of pre-arranged financing have been documented	~	Partially available	National IDP Framework available. Other supporting documents from government parties required.

	UN Humanitarian Response Plans integrate Anticipatory Action and preparedness plans	~	Not available	
	Preparedness and anticipatory actions have been planned as part of/aligned with longer-term locally-led adaptation and resilience actions	~	Partially available	DM Plans list out Preparedness and Anticipatory Action. Gaps Monitoring Mechanism of DM Plan Implementation
Outcome 3: Financing and delivery mechanisms	Is the number of people reached through anticipatory action funding tracked via			
Outcome 3: Financing and delivery mechanisms connected to effective anticipatory action plans	There is funding reserved/allocated for anticipatory action in the national budget and/or other pre-arranged and reliable funding sources.	~	Partially available	There is an anticipatory fund at the Ministry of Finance but there are no activities tied to implementing this funding towards the direction of anticipatory action.
Outcome 3: Financing and delivery mechanisms connected to effective anticipatory action plans	Local and national anticipatory action plans exist/are in place.	~	Not available	
Outcome 3: Financing and delivery mechanisms connected to effective anticipatory action plans		~	Not available	

Attainment Level

Does not apply

Not available

Partially available

Available

Select