Project Title	Measuring Effectiveness of Early Warning Systems through Sendai Framework Monitoring	
Project Reference	CREWS/GlobalProj/02/Measuring Effectiveness	
Geographic coverage	Least Developed Countries (LDCs) and Small Island Developing States (SIDS)	
Timeframe	Two years	
Implementing Partner	United Nations Office for Disaster Risk Reduction (UNDRR)	
Summary of overall cost of the Project in USD	a. Project Amount :	504,000
	b. Implementing Partner fees :	65,520
	c. Total :	**569,520**
Additional Implementing Partners	World Meteorological Organization (WMO)	
Allocations requested by additional implementing Partners in USD	a. Project Amount :	170,000
	b. Implementing Partner fees :	22,100
	c. Total :	**192,100**
Total Project Amount in USD	761,620	
Main objective(s)	i. To strengthen contribution of (multi-hazard) EWS to the reduction in risks and losses through enhanced capacities to measure and monitor EWS effectiveness and incorporate feedback/learning (lessons learnt) into the EWS value chain. ii. To better support LDCs and SIDS in measuring the effectiveness of their (multi-hazard) early warning systems and improving them over time	
Project rationale	Target (g), one of the seven global targets of the Sendai Framework for Disaster Risk Reduction 2015-2030, aims to "substantially increase the availability of and access to multi-hazard early warning systems and disaster risk information and assessments to the people by 2030". It is supported by six of the 38 indicators of the Sendai Framework Monitoring (SFM) system developed by the Open-ended Intergovernmental Expert Working Group on Indicators and Terminology Relating to Disaster Risk Reduction (OIEWG) and endorsed by the General Assembly. Guided by technical guidelines[1] developed in 2017, the SFM was developed and launched in March 2018. As of today, there are approximately 92[2] countries that have reported on Target (g) of the Sendai Framework since its inception in at least one of the reporting years. Out of these 92 countries, 21 LDCs and 6 SIDS have reported back on Target (g). Three of those countries are both an	

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[1] Pages 155-176 for Target (g)): https://www.preventionweb.net/files/54970_techguidancefdigitalhr.pdf

[2] These include both validated (publicly available) and unvalidated (not publicly available) data within SFM

LDC and SIDS.

Based on the experience of implementing early warnings systems (EWS) initiatives under the Climate Risk and Early Warning Systems (CREWS) Initiative, there is a need to further explore how countries can better assess and monitor the effectiveness of their national EWS. The Target (g) methodology and associated indicators are reflecting the four components of an EWS as outlined in the OIEWG Report and the Technical Guidance Notes. While those indicators measure the availability of and access to EWS, they do not provide a measure on the quality/effectiveness of those. Therefore, it is suggested to develop a set of custom indicators for countries to choose from in the SFM system, in order for countries to measure, on a voluntary basis, the effectiveness of their MHEWS as per their own individual contexts. In addition to this, the proposed custom indicators could facilitate the measurement of other hazard EWS effectiveness, notably for those related to geo-hazards and biological hazards EWS, among others; therefore, securing coherence and a holistic reporting to SFM.

As part of the initiative, CREWS Implementing Partners will develop such a set of custom indicators to support countries to measure the effectiveness of their multi-hazard (including single and cluster -hazard) EWS. Those custom indicators will not only provide countries the possibility to measure the effectiveness of their EWS, but they will equally contribute to the Results Monitoring Framework of CREWS and its CREWS Core Programme Indicators. Currently, the Custom Indicators' list in the SFM system includes one general indicator on existence and effectiveness of EWS.

The custom indicators will be translated into the 6 UN Official languages and made accessible in the SFM system. Training materials will be developed, piloted, and will include an update of the e-learning course on the SFM system that has been developed together with the Asian Disaster Preparedness Center (ADPC) in Bangkok. EWS trainings will be rolled out targeting LDCs and SIDS in the Caribbean, Pacific and West Africa. In the current context, online e-trainings are recommended to the extent possible, which may be extended to an expanded audience as feasible.

As part of this CREWS initiative, the capacities of National Meteorological and Hydrological Services (NMHSs) and National Disaster Management Offices (NDMOs) in LDCs and SIDSs will be strengthened to enhance the effectiveness of their MHEWS over time through monitoring and incorporation of feedback and lessons learnt, identification of the main gaps. This will in turn inform the identification of priority areas for policy and practice changes (e.g. development/revision of Standard Operating Procedures (SoPs); EWS plans or policies) as well as prioritized investments to address them. There are no previous or ongoing initiatives by the CREWS Implementing Partners on this issue.

| Project design | a. Project components and activities | **Outcome 1: 2020 State of Climate Services report focusing on Climate Information and Early Warning Systems as a baseline.**

In response to Decision 11 of the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement at the 24th Conference of the Parties (COP24)) to the United Nations Framework Convention on Climate Change (UNFCCC), the "*State of Climate Services*" report provides a global overview of the status of capacity to generate high-quality and tailored climate services to support adaptation planning and decision making in climate-sensitive sectors. At the same time, it can help countries, funding agencies and development partners assess which are the steps needed to address gaps in the climate services value chain to achieve improved adaptation and development outcomes at country level. It also identifies in a systematic way current gaps and needs at all levels, serving as a basis for more effective investments.

The inaugural 2019 *State of Climate Services* eport, which was launched at COP25 in Madrid, focused on agriculture and food security, noting that agriculture is one of the top adaptation priorities of Parties to the UNFCCC.

The 2020 *State of Climate Services* Report will focus on climate information and EWS.

The Report will provide a vast body of knowledge through its case studies to support the identification/selection of indicators (Outcome 1). Furthermore, the Report will define a baseline for future CREWS reporting, climate information and EWS gaps and needs for guiding CREWS programming, as well as provide visibility and outreach for CREWS.

Output 1.1 Case studies and identification of indicators commonly used for tracking of EWS effectiveness.

Broad Activities:

1.1.1 Drafting of case studies on real-world operational EWS at country/regional level

1.1.2 Identification of most commonly used indicators for tracking EWS's effectiveness

Output 1.2 Global and regional baselines of EWS capacities.

Broad Activities:

1.2.1 Data collection and analysis of EWS' status at global and regional levels |

1.2.2 Baseline of EWS capacities at global and regional levels

Output 1.3 Outreach

Broad Activities:

3.3.1 Production of a video

3.3.2 Production of a a poster and banner

Outcome 2: Custom indicators have been developed and are available for measuring the effectiveness of national (single-, cluster- and multi-hazard) early warning systems (for use within the Sendai Framework Monitoring system)

Sendai Framework global Target (g) indicators are primarily based on the four key elements of MHEWS, which currently do not measure the effectiveness of EWS. A set of custom indicators will be developed to help countries assess the effectiveness of their single-, cluster- and/or multi-hazard EWS.

Output 2.1: Custom indicators developed

Broad Activities:

2.1.1 Consultations and individual interviews with partners and countries that have strong expertise in EWS including the International Network for Multi-Hazard Early Warning Systems (IN-MHEWS) which unites such key partners.

2.1.2 Literature review of available resources, EWS assessments, including the report under Outcome 1, etc.

2.1.3 Development of draft custom indicators for pilot testing and peer/expert review.

2.1.4 Pilot testing of proposed custom indicators in CREWS beneficiaries (on-going projects).

2.1.5 Final review and consolidation of the proposed set of custom indicators to be incorporated in SFM.

Output 2.2: New custom indicators on EWS available on the online SFM system in all UN languages

Broad Activities:

2.2.1 Finalised menu of custom indicators uploaded on the SFM system on both the training and real environments

2.2.2 Translation of custom indicators from English to all other UN languages and made available on the SFM system

Outcome 3: Increased capacity of targeted countries to regularly monitor their early warning systems, understand assessment results and inform decision-making/to propose improvements through the use of custom indicators – Target (g)

Based on the custom indicators developed under Outcome 1, UNDRR's Global Education and Training Institute (GETI) in Incheon will develop and pilot the required training materials which will include an update of the e-learning course that has been developed with ADPC. This update will expand on how countries can use the monitoring information to improve their policies, systems and mechanisms. EWS trainings will be rolled out targeting the LDCs and SIDS in the Caribbean, Pacific and West Africa. In the current context, online e-trainings are recommended to the extent possible, which may be extended to an expanded audience as feasible.

Output 3.1: Training package on monitoring and reporting of global Target (g) indicators and national custom indicators developed.

Broad Activities:

3.1.1 Development of training materials on Target (g) EWS effectiveness custom indicators and the application of M&E information outputs.

3.1.2 Updating of the e-learning course on the SFM system to incorporate updates in Target (g) EWS effectiveness custom indicators.

Output 3.2: Pilot testing of training package on global Target (g) indicators and national custom indicators.

Broad Activities:

3.2.1 Organization of two (2) training sessions in different regions to pilot the training package on Target (g) custom indicators

3.2.2 Special focus on enhancing or setting up of a recommended multi-sectoral institutional framework at the national level to inform the EWS governance and to guide priorities for programming, institutional capacity development and resources allocation.

Output 3.3: Regional trainings on Target (g) reporting and on measuring effectiveness of EWS undertaken.

Broad Activities:

3.3.1 Organization of three (3) regional trainings in the Caribbean,

		Pacific and West Africa on reporting on Target (g) and on measuring effectiveness of EWS (i.e. the use of custom indicators).
Organization and operating procedure	a. Institutional framework	Outcome 1 and 2 of the project will be implemented with WMO in the lead and with UNDRR and WB/GFDRR contributing to the development of the custom indicators. UNDRR will ensure that the developed custom indicators are holistic, multi-hazard and linked to the SFM. Outcome 3 will be under the leadership of UNDRR. Training packages will be developed by UNDRR GETI and three regional trainings will be undertaken under the leadership of the three UNDRR Regional Offices for Africa, Asia and Pacific, and Americas and Caribbean. The regional trainings for LDCs and SIDS will ensure the participation of and uptake by NMHSs and NDMOs.
	b. Monitoring and evaluation system	UNDRR's and WMO's monitoring and evaluation systems and the project logical framework will be used to monitor progress and achievements of the project against the expected results (outcome and output indicators). Project reviews will take place annually and will include reporting of outputs and maintaining progressive records. The annual reviews will be performed in accordance with the CREWS Project Performance Monitoring and Evaluation Framework.
Project viability and sustainability	a. Main identified risks	Operational risks: • Only NDMOs and NMHSs for each LDC and SIDS attend the regional trainings; it is important to have participants from both institutions and associated agencies, such as water management, geophysical/marine services, health departments, etc. involved. Additional to this it is suggested to secure the participation of regional coordination EWS groups for other non-climate-related hazards. • While this project could be undertaken fully virtually, physical meetings would be of great benefit to enhance collaboration towards the SFM. Financial risks: The financial risk of this initiative is low. Should there be continued travel restrictions throughout the project than the funding currently budgeted for physical meetings and travels might not be utilised for

		the testing of training package and regional trainings.
	b. Critical assumptions	For the project to be successful, the following assumptions are critical: • Engagement by the IN-MHEWS to discuss, develop, review and endorse custom indicators to measure effective EWS; • Engagement from NMHSs and NDMOs to participate in the regional trainings and in the reporting on both global and custom indicators; • While an on-line training module will be developed, physical meetings would be an advantage to foster the closer linkages between the NMHSs and NDMOs.
	c. Judgment on the project sustainability	Sustainability of the project will be ensured due to the annual reporting of Governments to the SFM system. Furthermore, any follow-up CREWS initiative can uptake the learning outcomes from the Governments SFM and incorporate those to any future projects.
Indicators + Work Plan	Project indicators	See the logical framework and Work Plan, which can be found in Annex 2.
Budget		Annex 1

ANNEX 1: Budget

Project Outcomes & Outputs	Total in USD	UNDRR in USD	WMO in USD
Outcome 1: State of Climate Services Report focusing on Climate Information and Early Warning Systems as a baseline			
Output 1.1: Case studies and identification of indicators commonly used for tracking of EWS effectiveness (contributing to 2.1)	23,650		23,650
Output 1.2: Global and regional baselines of EWS capacities	20,000		20,000
Output 1.3: Outreach	6,350		6,350
Sub-Total Outcome 1	**50,000**	**0**	**50,000**
Outcome 2: Custom indicators have been developed and are available for measuring the effectiveness of national (single-, cluster- and multi-hazard) early warning systems (for use within the Sendai Framework Monitoring system)			
Output 2.1 Custom Indicators developed	136,000	16,000	120,000
Output 2.2: New custom indicators on EWS available on the online SFM system in all UN languages	42,000	42,000	
Sub-Total Outcome 2	**178,000**	**58,000**	**120,000**
Outcome 3: Increased capacity of targeted countries to regularly monitor their early warning systems, understand assessment results and inform decision-making/to propose improvements through the use of custom indicators – Target (g)			
Output 3.1: Training package on monitoring and reporting of Target (g) indicators developed	15,000	15,000	
Output 3.2: Pilot testing of training package on Target (g) indicators	117,000	117,000	
Output 3.3: Regional trainings on Target (g) reporting and on measuring effectiveness of EWS undertaken	284,000	284,000	
Sub-Total Outcome 3	**416,000**	**416,000**	**0**
Project Management	30,000	30,000	
Project Management	**30,000**	**30,000**	**0**
Subtotal: components	674,000	504,000	170,000
Project support cost (13%)	87,620	65,520	22,100
Grand total	**761,620**	**569,520**	**192,100**

Annex 2: Simplified Logical Framework and Work Plan

Outcomes/Output	Indicator	Means of Verification	FY 2020			FY 2021		
			Q2	Q3	Q4	Q1	Q2	Q3
Objective								
i. To strengthen contribution of (multi-hazard) EWS to the reduction in risks and losses through enhanced capacities to measure and monitor EWS effectiveness and incorporate feedback/learning (lessons learnt) into the EWS value chain. ii. To better support LDCs and SIDS in measuring the effectiveness of their (multi-hazard) early warning systems and improving them over time	NDMOs and NMHS reporting back on Target (g) in a multi-hazard and holistic perspective	SFM Statistics						■
Outcome 1: State of Climate Services Report focusing on Climate Information and Early Warning Systems as a baseline								
Output 1.1: Case studies and identification of indicators commonly used for tracking of EWS effectiveness (contributing to 2.1)	Number of case studies on real-world EWS operational at country/regional level finalised. Most commonly used indicators for tracking EWS effectiveness identified.	2020 State of Climate Services Report	■	■	■			
Output 1.2: Global and regional baselines of EWS capacities	Baselines of EWS capacities at global and regional levels finalised.	2020 State of Climate Services Report		■	■			
Output 1.3: Outreach	Video, poster and banner finalised	WMO website			■	■	■	■

Outcome 2: Custom indicators have been developed and are available for measuring the effectiveness of national (single-, cluster- and multi-hazard) early warning systems (for use within the Sendai Framework Monitoring system)								
Output 2.1: Custom indicators developed	Proposed custom indicators related to EWS finalised.	1) Documentation on proposed custom indicators related to EWS available.		■	■	■		
Output 2.2: New custom indicators on EWS available on the online SFM system in all UN languages	Custom indicators accessible to LDC and SIDS.	1) Custom Indicators made accessible via Sendai Framework Monitoring System. 2) Custom indicators translated into 6 UN official languages.		■	■	■		

Outcomes/Output	Indicator	Means of Verification	FY 2020			FY 2021		
			Q2	Q3	Q4	Q1	Q2	Q3
Outcome 3: Increased capacity of targeted countries to regularly monitor their EWS, understand assessment results and inform decision-making/to propose improvements through the use of custom indicators – Target (g)								
Output 3.1: Training package on monitoring and reporting of global Target (g) indicators and national custom indicators developed.	Training package (for online and on-site training) on new Target (g) methodology and proposed custom indicators available for trainings.	Off-line training material and training portal available.				■	■	
Output 3.2: Pilot testing of training package on global Target (g) indicators and national custom indicators.	Training package pilot tested at the national level in 2 regions.	Reports of tests undertaken available.					■	■
Output 3.3: Regional trainings on Target (g) reporting and on measuring effectiveness of EWS undertaken.	3 regional training undertaken in Pacific, Caribbean and West-Africa (LDC & SIDS country only).	1) Reports of regional trainings undertaken available. 2) # of NDMOs and NMHSs attending the trainings.						■