



## CREWS PROJECT PROGRESS REPORT

(July - December 2022)

<b>1. Project title</b>	<i>Reinforcing the capacities of meteorological and hydrological services and enhancing the early warning systems in Cambodia and Lao People's Democratic Republic (PDR) (CREWS Cambodia and Lao PDR)</i>	<b>2. Project reference</b> CREWS/RProj/08/South-East Asia
<b>3. Implementing Partners involved in the project</b>	World Meteorological Organization (WMO) World Bank (WB) United Nations Office for Disaster Risk Reduction (UNDRR)	<b>4. Regional/National Partners involved in the project</b> Ministry of Water Resources and Meteorology (MOWRAM), Cambodia National Committee for Disaster Management (NCDM), Cambodia Ministry of Labour and Social Welfare (MLSW), Lao PDR Ministry of Natural Resources and Environment (MONRE), Lao PDR
<b>5. Project Duration/Timeframe (from year - to year)</b>	2021 - 2025	<b>6. Total Funding Approved by Steering Committee (in US dollars), including fees</b>  US\$ 5,540,000
<b>7. Reporting focal point(s) from Implementing Partners</b>	<b>WMO:</b> Moyenda Chaponda <a href="mailto:mchaponda@wmo.int">mchaponda@wmo.int</a> <b>WB:</b> Keiko Saito <a href="mailto:ksaito2@worldbank.org">ksaito2@worldbank.org</a> <b>UNDRR:</b> Harold Rice <a href="mailto:Harold.Rice@un.org">Harold.Rice@un.org</a>	
<b>8. Project overview</b>	<p><b>Please include objectives, key project deliverables, leveraging, contextual information/statistics, significant events during the reporting period in bullet points. (max 250 words)</b></p> <p><b>Objective</b></p> <p>The CREWS Cambodia and Lao PDR project will enhance the capacities of national and regional stakeholders/institutions to provide hydromet, early action and response services to ensure that vulnerable populations in the two countries are covered by effective and inclusive risk-informed early warning services. To achieve the overall objective, the following five major outcomes have been outlined:</p>	

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1. Strengthened governance mechanism and enabling environment created for national and regional stakeholders
2. Enhanced capacity of National Meteorological and Hydrological Services (NMHSs) to provide forecasts and warnings
3. NMHS's information and communication technology and capacities strengthened
4. Enhanced preparedness and response capability to act upon warning and risk information to minimize impact of disasters on lives, livelihood and socio-economic systems
5. Improved integration of gender and vulnerable groups across the Early Warning – Early Action (EW-EA) value chain

#### **Leveraging**

The project leverages approximately USD 58 Million and links closely with the following initiatives/projects:

- [Building Resilience to High-Impact Hydro-meteorological Events through Strengthening MHEWS in Small Island Developing States \(SIDS\) and Southeast Asia \(SEA\)](#)
- [Mekong Integrated Water Resources Management Projects](#) (MIWRMP in Lao PDR and Cambodia)
- [Applying seasonal climate forecasting and innovative insurance solutions to climate risk management in the agriculture sector in Southeast Asia](#)
- [Strengthening the Development and Implementation of National Disaster Risk Reduction Strategies and Plans](#)
- [Lao PDR Southeast Asia Disaster Risk Management Project](#)
- [Southeast Asia Disaster Risk Insurance Facility \(SEADRIF\)](#)
- [Strengthening Climate Information and Early Warning Systems to Support Climate-Resilient Development in Cambodia](#)
- [Cambodia Water Security Improvement Project in Cambodia](#)
- [Disaster Resilience and Water Management in Cambodia](#)
- [Strengthening Agro-climatic Monitoring and Information Systems \(SAMIS\) to improve adaptation to climate change and food security in the Lao People's Democratic Republic](#)
- [Laos Climate Service for Agriculture \(LaCSA\) by FAO, CIAT and APCC](#)

#### **Key events during reporting period**

29th National Disaster Risk Reduction Forum Phnom Penh, 13<sup>th</sup> July 2022

The National Disaster Management Committee organized the 29<sup>th</sup> forum on disaster risk reduction to take stock on progress on implementing the national action plan on Disaster Risk reduction (NAP-DRR) utilizing guidance provided by UNDRR for conducting national voluntary reviews on the Sendai Framework Mid- Term review. World Bank and UNDRR has agreed to provide technical advice and support for NCDM to conduct a multi-stakeholder consultation, which started with initial retrospective analysis based on a survey distributed ahead of the National DRR forum, on the progress on reducing risk and losses from disasters. NCDM has produced an initial report consolidating progress reports received from line departments, government and non-government organizations. UNDRR and WB provided technical assistance (individual consultant) to analyse the data collected and provided advice on how to pursue a prospective review and propose recommendations on adjustments required for emerging risk, context shift and projected future risks. Cambodia produced a national voluntary report on the Sendai Framework which informed the Ministerial statement of the country delegation at the Asia Pacific Ministerial Conference on DRR. This included review of progress, analysis and recommendations for enhanced multi-hazard early warning systems and early action as part of the stock take and analysis on the priority fourth of the Sendai Framework. The report is available at: [Cambodia: Voluntary National Report of the MTR SF | Midterm Review of the Sendai Framework \(undrr.org\)](https://www.undrr.org/publications/cambodia-voluntary-national-report-of-the-mtr-sf-midterm-review-of-the-sendai-framework)

A one-day regional workshop for the Community-based flood management activities (CBFM) and Risk Mapping activities in Cambodia and Lao PDR, 18<sup>th</sup> August 2022

The one-day regional workshop for community-based flood management and risk mapping activities included 40 plus representatives from National Meteorological and Hydrological Services (NMHSs), National Disaster Management Organizations (NDMOs), disaster sub-committees, international organizations, NGOs and other stakeholders of Cambodia and Lao PDR together with the CREWS partners (WMO, World Bank, and UNDRR). The purpose of the workshop was to present and discuss the community-based approaches to flood management and risk mapping activities planned in the project. The CBFM and risk mapping activities are based on the WMO Associated Programme on Flood Management (APFM), and will improve in-country response to multi-risk information and warnings through increased coordination between NMHSs and NDMOs move towards translating and communicating hydromet impact-based warnings to vulnerable communities and enable early action

measures. More details of the workshop can be found via this [link](#).

*Community consultation in Cambodia for implementing community-based flood management, 19<sup>th</sup> August 2022*

Following the regional workshop, the WMO and local partners visited a local community of Chirou Ti Muoy Commune, to identify and collect information on community experience of existing early warning systems for Floods and community preparedness measures. Initially the commune chief welcomed the visiting team from ADPC, WMO and PADEK and thanked them for taking the time to come and visit their community. The commune chief informed the team that the commune is facing flood events yearly and there had major impacts to the community households, infrastructures and livelihoods (especially at the low-lying areas), and clearly articulated the challenges they face within the commune. A questionnaire developed before the meeting was presented to the group of participants and was complimented by an open discussion, which resulted in the group identifying potential areas for improvement in better managing the flood events. Some of the important recommendations for improving the management of flood events are highlighted below:

1. Have more volunteers from the villages (presently 18 in V2R) and provide trainings for using and disseminating the warnings from EWS-1294
2. Provide sandbags to reduce erosion at the bank of the Mekong River
3. Increase the health workers including equipment's and medicine for better first-aid treatments and awareness on hygiene and sanitation
4. Develop early warning system (for having advance warning of 1-2 days) and communication channels (through loudspeakers) for last mile connectivity within communities
5. Need of 9 boat engines for timely evacuation of vulnerable individuals during flooding events
6. Food assistance and need of more than 1200 Tarpaulins sheets for families at the safer evacuation site.
7. There should be regular meetings of the commune representatives, V2R groups and local authorities (PCDM) etc. to assess the preparedness and improve response coordination.
8. ADPC country representative requested to have the consulted community as one of the pilot areas for implementing the community-based flood management strategies mainly improving their existing capacities.

More details of the workshop can be found via this [link](#).

<https://filecloud.wmo.int/share/page/site/crews-cambodia-and-lao-pdr/document-details?nodeRef=workspace://SpacesStore/b65d5bc1-19f5-4371-9353-ebd08078ae41>

Validation Workshops for the Assessment of Early Warning System Status and Gaps in Cambodia and Lao PDR, 25<sup>th</sup> & 28<sup>th</sup> October 2022

The EWS assessment in Cambodia and Lao PDR aims to provide an update on current capacities in the country for producing and delivering multi-hazard early warning as well as identify residual gaps and needs. In particular, the assessment covers i) policy, legal and institutional framework for multi-hazard early warning, integrated water resource management (IWRM), climate change adaptation (CCA) and disaster risk reduction and management (DRRM), ii) EWS infrastructure, products and services, iii) recent/on-going/planned programs and projects, and iv) residual gaps and needs in the areas of risk knowledge, observation and monitoring, and risk communication. The assessment will also inform future activities of the CREWS Cambodia and Lao PDR Project as well as other initiatives. The validation workshop:

1. Provided an overview of the CREWS Cambodia and Lao PDR Project, and the assessment.
2. Gathered stakeholders involved in EWS, IWRM, DRRM, and CCA to discuss information needs and requirements vis-à-vis the available EWS data, products and services in each country.
3. Validate the outcomes of the assessment in the areas of:
  - Policy, legal and institutional framework for EWS, IWRM, DRRM and CCA in Lao PDR.
  - EWS infrastructure, products, services and their dissemination.
  - Current products and services of the Department of Meteorology and Hydrology (DMH) as well as the needs and requirements of agencies and end-users of hydro-meteorological data, products and services.
  - Recent/on-going programs or projects related to EWS, IWRM, DRR/DRM and CCA in Lao PDR.
  - Residual gaps, needs and approaches for overcoming these for priority programming.
4. Provide recommendations to CREWS Project and future EWS-related capacity development initiatives in the country/region.

The main ~~outseome~~ **outcome** of the assessment are the country reports that provide key recommendations to guide project implementation. The draft reports were shared recently and are under review. The assessment reports are expected to be finalized and formally published in Q1 of 2023.

CREWS - Cambodia & Lao PDR: Virtual Training on Nowcasting, 14 - 16 November 2022

An introductory training on Nowcasting of severe weather was conducted virtually for forecasters of Department of Meteorology (DOM), Cambodia and Department of Meteorology and Hydrology (DMH), Lao PDR. The training was conducted by the Regional Specialized Meteorological Centre (RSMC) Hong Kong, in support of the Severe Weather Forecasting Programme (SWFP)- Southeast Asia. The objective of the training was to introduce the forecasters to satellite-based and radar-based nowcasting products. An introduction of the Hong Kong Observatory’s Short-range Warning of Intense Rainstorms in Localized Systems (SWIRLS) was also made, as this is one of the tools planned to be implemented in the project. Some of the challenges faced by the two countries along with the training requirements were discussed and this will be addressed in the following quarters of the project cycle. The training was attended by 8 forecasters from DOM and 19 forecasters from DMH. In-country face-to-face trainings for both Cambodia and Lao PDR are planned to be held during Q1/Q2 of 2023. Details of the virtual training can be accessed using this [link](#). The survey results from the training is accessible [here](#).

*SWFP-Southeast Asia : Virtual Meeting of the Regional Subprogramme Management Team (RSMT) , 1<sup>st</sup> and 2<sup>nd</sup> December 2022*

The meeting of the Regional Subprogramme Management Team (RSMT) of SWFP-Southeast Asia was held virtually on 1 and 2 December 2022. RSMT SWFP-Southeast Asia comprises of the national focal points designated for SWFP by the NMHSs of the five participating countries, namely, Cambodia, Lao PDR, Philippines, Thailand and Viet Nam besides designated representatives from the contributing Global Numerical Weather Prediction (NWP) Centres (including World Meteorological Centres (WMCs)) and the Regional Centres. A face-to-face meeting of the SWFP-Southeast Asia RSMT is planned for 2023, which will be supported by the project. Additional information on the meeting can be accessed via the following [link](#).

*CREWS – Virtual kick-off meetings on detailed need assessment and development of investment plan/strategy for hydromet modernisation, 29 November and 1 December 2022*

Virtual kick-off meetings were organized on 29 November 2020 for Lao PDR and 1 December 2022 for Cambodia. The meetings were participated by representatives from DMH in Lao PDR, DoM and DHRW in Cambodia with aims to present the objectives and expected outputs of the detailed need assessment and development of investment plan. The assignment will be carried out by the RMSI in India and close engagement with DMH, DoM and DHRW through desk reviews and in-country consultation meetings. There are various assessments in Lao PDR and Cambodia carried out (such as high-level assessment by RIMES and other assessment works conducted by other projects). The kick-off meetings presented the methodology and expected outputs, considering other assessment

	<p>works. Feedbacks from clients were provided to RMSI to ensure that the detailed assessment will be leveraged from other assessment works to avoid any duplication.</p> <p><u>Assessment and Analysis of preferred platforms to enable EWS1294 two-way communication channel</u></p> <p>A preliminary exploration of multiple options to develop the two-way communication channel and define requirements of the assessment was carried out in November 2022. The scope and objectives of the two-way communication channel have been discussed and few specific channel possibilities have been outlined in terms of technical ability, feasibility, and consistency with the present EWS 1294 system.</p> <p><u>Gender and Vulnerability analysis across the EW-EA value chain begun</u></p> <p>Preliminary meetings with National Committee for Disaster Management (NCDM) and GESI experts assisted in clarifying the scope of the gender and vulnerability study. Secondary data was collected from reports on gender assessments conducted by different organizations in Cambodia, which will inform the final gender and vulnerability analysis conducted under CREWS.</p>
<p><b>Progress summary</b></p>	<p><b>What has been achieved <u>during this reporting period?</u> – Please list <u>in bullet points</u> the most significant and tangible outcomes? (Highlight at least 1 key achievement that can be elaborated in the 2022 Annual Report). (max 250 words)</b></p> <ul style="list-style-type: none"> <li>• Progress on disaster risk reduction reviewed through multi-stakeholder engagement in DRR forum and technical workshop in Lao PDR as an input for a national Sendai Framework mid-term review.</li> <li>• Comprehensive assessment of the NMHSs of Cambodia and Lao PDR followed by a validation of the findings from this assessment was conducted. The reports are under preparation and are expected to be finalized in 2023.</li> <li>• Forecasters from DOM, Cambodia and DMH, Lao PDR were introduced to some of the concepts of satellite-based and radar-based nowcasting including HKO SWIRLS which is planned to be implemented through the project.</li> <li>• Hydrologists from Department of Hydrology and River Works (DHRW), Cambodia and DMH, Lao PDR were introduced to the <a href="#">Dynamic Water Resources Assessment Tool (DWAT)</a>. This will be implemented in one pilot basin each of Cambodia and Lao PDR. The activities are expected to commence in Q1 2023.</li> <li>• Initial consultation meetings with DMH in Lao PDR and DoM &amp; DHRW in Cambodia to explain and discuss objectives and outputs of different assessments under CREWS and other projects to avoid confusion.</li> </ul>

	<p>Detailed assessment will be carried out based on findings from past and on-going assessments to avoid duplication.</p> <ul style="list-style-type: none"><li>• A preliminary assessment of the two-way communication channel to enable EWS1294, as well as secondary information collection and analysis to conduct gender and vulnerability analyses across the early warning and early action value chain, has been carried out.</li></ul>
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## 9. Project Performance

Interpretation of color coding		
<b>High</b>		Good progress; on track in most or all aspects of delivery
<b>Medium</b>		Moderate progress or on track in some aspects of delivery
<b>Low</b>		Less than moderate or poor progress. Not on track in critical areas of its delivery. Requires remedial attention

	Rate of expenditure	Rate of delivery	Alignment of Objectives
<b>Coding</b>			
<b>Narrative</b>	<p>The project remains aligned to the expected rate of expenditure.</p> <p>The total expenditure for the project is USD 1,075,419</p> <p>WMO: USD 610,954</p> <p>WB: USD 72,640</p> <p>UNDRR: USD 368,371</p>	<p>The project remains aligned to the expected rate of delivery. The first 6 months were dedicated to the project inception phase in which partners prepared an extensive implementation plan, proceeded to establish modalities of engagement with national stakeholders (nomination of national project focal points and steering committee members). The project inception phase included the launch of the project and first project steering committee meeting.</p> <p>Following the inception phase, implementing partners have been working with national project focal points to complete the year 1 deliverables.</p>	<p>The project remains aligned to the objectives</p>



		<p>The easing of travel restrictions has also helped in having face-to-face engagements with the project beneficiaries and in realizing some of the project outcomes.</p>	
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## 10. Risk Management Status

<p><b>Risk Status</b></p>	<p>What is the current risk status as compared to what was identified in the project proposal?</p> <ul style="list-style-type: none"> <li>• <i>The prevalent situation on account of the Covid-19 pandemic may compromise the timelines and project inception and implementation, especially where travel (local and international) is required (Low):</i> The risk status has changed to low considering that both Cambodia and Lao PDR have relaxed COVID-19 measures and restrictions.</li> <li>• <i>Commitment from participating countries (including national government agencies and targeted communities) for the project (Medium):</i> The risk status remains medium. However, any risk is currently being mitigated considering strong working relationships have been established with national agencies and high-level political buy-in / support has been achieved. Furthermore, UNDRR has placed a UN Volunteer in Lao PDR Resident Coordinator’s office to assist in implementing the CREWS programming across Cambodia and Lao PDR. The UNV has begun engaging with partners as of November 2022.</li> <li>• <i>Human resources / capacity risks (Medium):</i> The risk status remains medium, considering the national agencies have limited human resource capacity. The project is exploring the possibility of helping the Members address this capacity.</li> <li>• <i>Natural hazards such as severe weather, floods, droughts and landslides have the potential to cause delays in project implementation (Medium):</i> The risk status remains medium.</li> <li>• <i>Financial sustainability of investments following completion of the project (Low):</i> This is not applicable for the reporting period. However, upon reviewing and understanding the situation of the national agencies, the Implementing Partners understand this risk may turn medium.</li> </ul>
<p><b>Measures to address</b></p>	<p>What mitigation measures have been developed to address the risk status? <b><u>In bullet points</u></b></p> <ul style="list-style-type: none"> <li>• <i>Commitment from participating countries (including national government agencies and targeted communities) for the project:</i> Following the nomination of national project focal points and project steering committee members, the participating countries remain fully committed to the project.</li> </ul>

	<ul style="list-style-type: none"> <li>• <i>Human resources / capacity risks:</i> Insofar the project implementation has not been affected by the limited human resources and capacity of national agencies. The Implementing Partners remain fully committed to manage the demand on national agencies and support them in the most efficient way possible.</li> <li>• <i>Natural hazards such as severe weather, floods, droughts and landslides have the potential to cause delays in project implementation:</i> The project implementation has not been affected by this risk during the reporting period.</li> <li>• <i>The prevalent situation on account of the Covid-19 pandemic may compromise the timelines and project inception and implementation, especially where travel (local and international) is required:</i> Restrictions put in place by national governments to manage the current COVID-19 have now been lifted and travel is now possible. Therefore, no mitigation risks are required.</li> <li>• <i>Financial sustainability of investments following completion of the project:</i> The Implementing Partners are working towards developing a Project sustainability and exit strategy, the idea would be to have this in place 6 months before the end of the project to be agreed upon with the countries.</li> </ul>
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## 11. Contributions to CREWS Output(s)

(use number for activities and products and % for project component completion)

### 12.1 National Output(s)

#### CREWS Output(s) 1: National Meteorological and Hydrological Services service delivery improved, including the development of long-term service delivery strategies and development plans

State Project Output(s) in this section	Overall Project Target	Progress by July 2022	Target for the reporting period	Progress by December 2022
New and/or updated legislation targeting weather, water and climate services developed	2 new and/or updated	N/A	N/A	Gathering of Hydromet Law and related documentation in Lao PDR.
DRR/ Preparedness and response coordination mechanisms (DRR & Humanitarian response platforms)	Multi-stakeholder	N/A	N/A	1 DRR forum organized in

effectively functioning (# of DRR forum conducted – Cambodia; # of national DRR platform meetings conducted – Lao PDR)	disaster risk reduction platforms are functional as coordination platforms for preparedness, early action and disaster risk reduction			Cambodia and 1 technical forum in Lao PDR.
National Strategic Plans (NSP) for NMHSs and Frameworks for Weather, Water and Climate Services (NS-FWCS) along with complementary Action Plans updated or established	2 NS-FWCS documents developed	N/A	N/A	N/A
User Interface Platforms (structured forum for weather, water and climate service information users, researchers and providers to interact) set up	4 UIPs in Cambodia and Lao PDR supported	N/A	1	N/A
Needs assessments for strengthening national network architecture conducted	2 Needs Assessment reports developed	N/A	2	Initial assessments of hydromet monitoring networks in Lao PDR and Cambodia are ongoing.
Investment plans and bidding documents developed	2 Investment plans and corresponding bidding documents developed	N/A	N/A	Firm mobilized to develop investment plans based on the findings from the RIMES report. Instead of Bidding documents, the project will prepare recommendations for technical specifications, as

				Bank Executed Trust Funds are prohibited from developing bidding documents to be used by Government clients.
Strategy for enhancing integrated water resource management (WRM) developed and/or updated, inclusive of dam operators and relevant stakeholders at sub-regional level	1 Water Resource Management Strategy developed and/or updated	N/A	N/A	Gathering of information related to the national water resources management strategy in Lao PDR.
Drought plans/strategies developed and/or reviewed and updated	1 Drought management strategy developed	N/A	N/A	N/A
Coordination mechanism established/supported with detailed roles and responsibilities of each stakeholder defined at sub-regional level	Coordination mechanism established at sub-regional level	N/A	N/A	N/A
Dedicated national teams established for drought monitoring and forecasting	2 dedicated national level teams established (1 in Cambodia and 1 in Lao PDR)	N/A	N/A	N/A
<b>Additional information: briefly indicate, with concrete examples, the contributions to CREWS value propositions (gender-responsive, multiplier, people-centered, promote coherence, solution-oriented, unique), as relevant (150 - 200 words). <u>Please list in bullet points.</u></b>				

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<b>CREWS Output(s) 2: Risk Information to guide early warning systems and climate and weather service developed and accessible</b>				
State Project Output(s) in this section	Overall Project Target	Progress by July 2022	Target for the reporting period	Progress by December 2022
Enabling improved data sharing among NMHSs	WMO Hydrological Observing System established in both countries	N/A	N/A	N/A
ECMWF ecChart licenses renewed, and relevant training provided to the NMHSs	2 ECMWF EcChart licenses renewed	N/A	N/A	For Lao PDR, the current ECMWF EcChart license is valid till September 2023. For Cambodia, the renewal is planned in 2022.
Regional meetings and in-country trainings on Nowcasting, SWFP and SeAFFGS tools and products provided to NMHSs, leveraging support from regional centres	5 trainings/workshops conducted	N/A	1	Trainings and workshops will be planned to follow the hyromet assessment. An introductory online workshop was conducted by Hong Kong Observatory on the SWIRLS An initial national workshop to support

				the countries is planned in Q1/2 2023.
SWFP management meetings linked with FFGS that will provide support to Cambodia and Lao PDR (aspects covering capacity building, availability of products, specific country needs etc.)	2 joint SWFP RSMT and FFGS meetings conducted	N/A	N/A	Meetings will be held following the hydromet assessment.
Visualisation platform for flood and drought monitoring and warning established (incorporating existing information, products and tools)	Single platform developed and/or updated covering both countries	N/A	N/A	The visualization platform has been presented to MOWRAM and DMH, the technical partner is being hired and additional trainings will be provided in Q1 2023.
New functionalities integrated into the Southeast Asia Flash Flood Guidance System along with the requisite operational training	Enhancements and additions to SeAFFGS functionalities	N/A	1 Workshop	SeAFFGS was officially launched in the regional centre in Vietnam in May. Developer providing IT support to the Regional Centre.  Discussions with Members and system developer ongoing. Training plan under development.
Implement an integrated water resource assessment tool in two pilot sites in both Cambodia and Lao PDR	2 pilot sites established with IWRM tool	N/A	N/A	An introductory meeting between the CREWS focal points

				from Cambodia and Lao PDR and the developers of the Dynamic Water Resources Assessment Tool (DWAT) was held.
Seasonal and sub-seasonal forecasts provided at the national level	Both countries can provide seasonal and sub-seasonal forecasts	N/A	1 Assessment	N/A
Training workshops on strengthening Impact-Based Forecast and Warning Services (IBFWS) in Cambodia and Lao PDR	IBFWS strengthened through 4 in-country trainings and 2 communication channels utilised	N/A	1 Training	Activities on IBFWS will take place following the hydromet assessment.
NMHS staff and staff from other relevant agencies given training and access to climate database management system	1 review of existing system and 1 training per country	N/A	N/A	N/A
New/updated flood and drought risk tools/products	Flood and drought risk maps developed and/or updated for each country	N/A	1 Training / Workshop held	Subregional workshop on hazard and risk mapping took place in August 2022.
Vulnerability index for floods and droughts developed. Vulnerability indicators agreed and profiling capacities enhanced	Vulnerability indicators agreed and profiling capacities enhanced for Lao PDR building	N/A	N/A	WFP beginning to draw up indicators for review of other partners.
Standard post-disaster assessment data collection forms with relevant data disaggregation levels and loss	Disaster loss and impact data quality	N/A	N/A	Status of disaster loss database assessed in



estimation methodologies agreed and used. Capacity development on disaster loss accounting, statistics and analytics	and improved to enhance its applicability for impact-based modeling			Cambodia and Lao PDR. WFP working on 72-hour assessment tool in Lao PDR, UNDRR engaging on disaster loss database update and maintenance.
Disaster statistics reports and/or analytical research products on sector-impact of disaster events to inform recovery, impact and vulnerability assessments	Disaster loss databases linked with extreme events catalogues to inform impact and vulnerability assessments to develop impact matrices for impact-based forecasting	N/A	N/A	N/A
Qualitative improvement of SFM reporting on both Cambodia and Lao PDR, including the use of new custom indicators for Sendai Target G on risk information and EWS and availability of disaggregated figures. Capacity development on disaster loss information and Sendai Framework Target G/measuring effectiveness	Strengthened coordination mechanisms and capacities of all contributors for Sendai Framework monitoring	N/A	N/A	Training provided to new focal points on Lao PDR. UNDRR engaging with MoLSW on this.
<p><b>Additional information: briefly indicate, with concrete examples, the contributions to CREWS value propositions (gender-responsive, multiplier, people-centered, promote coherence, solution-oriented, unique), as relevant (150 - 200 words). Please list in bullet points.</b></p> <ul style="list-style-type: none"> <li>• <b>People-centered:</b> WMO and technical partners CIMA Research Foundation are working with MOWRAM Cambodia and DMH Laos to develop national flood and drought risk maps for both Cambodia and Laos. The Bank is building on this activity and developing inputs for the Country Climate and Development Report (CCDR) for Cambodia, a flagship, cross-sectoral World Bank report to be published in</li> </ul>				

Q3 2023.

- **Solution-oriented:** WMO is working with MOWRAM to identify and develop flood models and forecasts for 3 pilot basins which flood each year. WMO and technical partner supporting the CIMA Research Foundation hope to have at least one of the models ready to test during the next monsoon season.
- **Solution-oriented:** WMO is working with MOWRAM, MONRE and Korea Institute of Civil Engineering and Building Technology (KICT) on piloting an integrated water resources assessment tool in a pilot basin for Cambodia and Lao PDR.

### CREWS Output(s) 3: Information and Communication Technology, including common alerting protocol, strengthened

State Project Output(s) in this section	Overall Project Target	Progress by July 2022	Target for the reporting period	Progress by December 2022
Detailed assessment reports outlining IT requirements for NMHSs	2 IT assessment reports outlining the requirements	N/A	N/A	The comprehensive assessment of NMHS that will inform of IT requirements is underway.  Initial assessment for IT requirements for System Integration in DMH (Lao PDR).
Roadmaps which target IT capacity development which also covers sustainability aspects developed	2 roadmaps developed	N/A	N/A	N/A



Forecasting products are made available to the public through web-based platforms	At least 2 new forecasting products made available on the public website	N/A	N/A	N/A
Training support provided to countries in using a Common Alerting Protocol (CAP)	1 joint training conducted for both countries	N/A	N/A	N/A
<b>Additional information: briefly indicate, with concrete examples, the contributions to CREWS value propositions (gender-responsive, multiplier, people-centered, promote coherence, solution-oriented, unique), as relevant (150 - 200 words). <u>Please list in bullet points.</u></b>				

**CREWS Output(s) 4: Preparedness and response plans with operational procedures that outline early warning dissemination processes developed and accessible**

State Project Output(s) in this section	Overall Project Target	Progress by July 2022	Target for the reporting period	Progress by December 2022
Analysis of existing hydromet warnings and climatological analysis of severe events conducted	1 Analysis report for both Cambodia and Lao PDR developed	N/A	1	The comprehensive assessment of NMHS that will feed into this activity is underway and will include analysis of hydromet warnings and climatological

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				analysis of severe events.
Workshops/trainings between NMHSs and DRM authorities to standardize multi-risk information and warnings	2 national level trainings conducted	N/A	N/A	N/A
Preparedness and response plans (sub-national level) integrating roles, responsibilities and detailing operational procedures for Early Warning dissemination and response activation mechanisms, including action. Co-develop preparedness and response plans detailing roles, responsibilities and procedures for EW EA	At least 2 provinces and/or districts supported	N/A	N/A	Being developed by WFP in both countries.
Early action protocols and trigger systems and financing mechanism enhanced for selected hazards (e.g. droughts and floods) Scalability frameworks for flood and drought events enhanced in line with national roadmaps & ASEAN guidance for disaster/shock-responsive social protection	Enhance capacities for Early action and rollout ASEAN and country-level disaster/shock responsive social-protection guidelines	N/A	N/A	Discussions with potential partners underway.
Scalability Frameworks for flood and drought events enhanced in line with national roadmaps & ASEAN guidance for disaster/shock-responsive social protection	Scalability frameworks incorporated on programmatic mechanism for vertical and horizontal expansion of social protection coverage in anticipation or response to shocks.	N/A	N/A	Discussions with potential partners underway.

Flood preparedness equipment provided at community level	4 (communities receive preparedness equipment)	N/A	N/A	Regional Workshop on CBFM planned in Phnom Penh during August 2022, co-organised by WMO and ADPC
Community flood management committee (CFMC) established and other representatives engaged in the process including the number of women, disabled, elderly, community elders	4 (CFMC established with roles and responsibilities)	N/A	N/A	Regional Workshop on CBFM planned in Phnom Penh during August 2022, co-organised by WMO and ADPC
Community-based flood management plan (CFMP) developed in joint consultation of communities, local municipality and DRM stakeholders	4 (CFMC established with roles and responsibilities)	N/A	N/A	Regional Workshop on CBFM planned in Phnom Penh during August 2022, co-organised by WMO and ADPC
<p><b>Additional information: briefly indicate, with concrete examples, the contributions to CREWS value propositions (gender-responsive, multiplier, people-centered, promote coherence, solution-oriented, unique), as relevant (150 - 200 words). <u>Please list in bullet points.</u></b></p> <ul style="list-style-type: none"> <li>• <b>People-centered:</b> WMO is working with MOWRAM, NCDM and technical partners ADPC to identify two additional communities to</li> </ul>				

provide CBFM support in Cambodia. The two communities will be in addition to the community visited during the commune consultation carried out in August 2022.

### CREWS Output(s) 5: Knowledge products and awareness programmes on early warnings developed

State Project Output(s) in this section	Overall Project Target	Progress by July 2022	Target for the reporting period	Progress by December 2022
Community simulations (emergency drills) in coordination with NMHS, DRM and provincial authorities (2 countries) conducted with engagement of stakeholders representing marginalized groups	4 (community simulation/drills conducted)	N/A	N/A	Discussions with potential partners underway.
Reviews on risk communication, warning dissemination and behaviour conditioning factors conducted for selected events and communities to distil recommendations for last-mile connectivity	Warning dissemination systems and risk communications approaches are people-centered to ensure inclusiveness, last mile connectivity and to enable action	N/A	N/A	Discussions with potential partners underway.
Warning dissemination systems include mechanisms for 2-way and interactive communications (users' clarification/ feedback, crowdsourcing of local information and verification on warning reception)  Monitoring and evaluation tool co-designed and shared with the national/local stakeholders for user-responsive EWS chain, after-action review systems and feedback	Users' feedback mechanisms enhanced to improve effectiveness of warning and support continuous learning, improvement and	N/A	N/A	Discussions with partners and NCDM were organized and planning advanced. Work



integration	accountability.  Monitoring and evaluation tools for EWS adopted			occurring on this topic by PIN Cambodia.
Communication materials developed	3	N/A	N/A	N/A
<b>Additional information: briefly indicate the contributions, with concrete examples, to CREWS value propositions (gender-responsive, multiplier, people-centered, promote coherence, solution-oriented, unique), as relevant (150 - 200 words). <u>Please list bullet points.</u></b>				

### CREWS Output(s) 6: Gender-sensitive training, capacity building programmes provided

State Project Output(s) in this section	Overall Project Target	Progress by July 2022	Target for the reporting period	Progress by December 2022
Risk communication plans, early action protocols and response plans developed that are gender-responsive and include recommendations on anticipatory actions and risk communication tailored to marginalized groups	Warning messages, risk communication strategies and response plans are inclusive of marginalized groups and gender and disability responsive	N/A	N/A	Initial methodology for gender analysis outlined and discussion with partnership are underway.
Guidance document on mainstreaming gender and disability in MHEWS developed and tested for gender-	1 guidance document for	N/A		Discussions held with



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transformative EW-EA developed	government and their EWS partners developed and tested			Gender focal point/ ToR developed for gender analysis of EW-EA in the Pacific, consultancy informing approach for this project as well.
<p><b>Additional information: briefly indicate, with concrete examples, the contributions to CREWS value propositions (gender-responsive, multiplier, people-centered, promote coherence, solution-oriented, unique), as relevant (150 - 200 words). Please list in bullet points.</b></p> <ul style="list-style-type: none"> <li><b>Gender responsive:</b> A training manual for Mainstreaming Gender into End-to-End Early Warning System for Flood Forecasting and Integrated Flood Management developed by the Technical Support Unit of the <a href="#">Associated Programme on Flood Management (APFM)</a> will be tested and used as a starting point for the development of the guidance document tailored for Cambodia and Lao PDR on mainstreaming gender and disability in MHEWS. Discussions were held with the gender focal point from UNDRR on the way forward.</li> </ul>				

## 12.2 Regional Output(s) (for Regional Projects)

### CREWS Regional Output(s): Institutional and human capacities at Regional WMO and Intergovernmental organizations to provide regional climate and weather services to LDCs and SIDS increased

State Project Output(s) in this section	Overall Project Target	Progress by July 2022	Target for the reporting period	Progress by December 2022



Additional information: briefly indicate, with concrete examples, the contributions to CREWS value propositions (gender-responsive, multiplier, people-centered, promote coherence, solution-oriented, unique), as relevant (150 - 200 words). Please list in bullet points.

## 12. Visibility products

- a. *Insert or copy any links to press releases, videos or communication items and/or social media links produced during the reporting period only*
  - <https://public.wmo.int/en/resources/meteoworld/implementing-community-based-flood-management-cambodia>

## 13. Supporting documents

- a. *List and annex to the report any documents providing details on project activities conducted during the reporting period such as reports of training sessions, assessment reports, online solutions and tools, manuals, summaries of high-level discussions etc.*

## 14. Project History

- a. *Highlight key achievements since project started in bullet points, include all visibility and supporting documents other than those from the last 12 months*