



## CREWS PROJECT FINAL REPORT

Ref.: 18864/2020-2.2 SDPS

1. Project title	<i>International Early Warning Conference (First Multi-Hazard Early Warning Conference – MHEWC-I)</i>	2. Project reference <i>CREWS/GlobalProj/05/Early Warning Conf</i>
3. Lead IP	<i>WMO</i>	4. Other Implementing Partners
5. SC Approved Project Duration/Timeframe	<i>1 year (January-December 2017)</i>	
6. Actual Project Duration/Timeframe (if no-cost extensions were approved)	<i>3 years 11 months (November 2016 – September 2020) – including no-cost extensions (initial duration was 1-year)</i>	
7. SC approved Project Budget (in USD)	<i>320 k (including fees)</i>	
8. Total Actual Project Budget Expenditure (in USD)	<i>315 k</i>	
9. Reporting focal point	<i>Jochen Luther, Scientific Officer – Multi-Hazard Early Warning Services, Disaster Risk Reduction and Public Services (DPS) Branch, Services (S) Department, WMO Secretariat, <a href="mailto:jluther@wmo.int">jluther@wmo.int</a></i>	
10. Report Certified Accurate by (with signature):	<i>Johan Stander, Director, Services Department, WMO Secretariat, <a href="mailto:jstander@wmo.int">jstander@wmo.int</a></i> 	
11. Project overview	<i>The First Multi-Hazard Early Warning Conference (MHEWC-I) took place from 22-25 May 2017 in Cancún, Mexico, in conjunction with the Fifth Session of the Global Platform for Disaster Risk Reduction (GP2017). It was organized by the International Network for Multi-Hazard Early Warning Systems<sup>1</sup> (IN-MHEWS, consisting of key international agencies with a role and stake in early warning) and aimed to</i>	

<sup>1</sup> <https://mhews.wmo.int/en/partners>



*demonstrate to countries how they can improve the availability of, and their communities' access to, multi-hazard early warnings and risk information and assessments, in line with global Target G of the Sendai Framework for Disaster Risk Reduction 2015-2030. The Conference built on the outcomes of the three International Conferences on Early Warning that were held between 1997 and 2006 (EWC I-III). It also addressed the priorities highlighted in the United Nations Plan of Action on Disaster Risk Reduction for Resilience.*

*The Conference highlighted strategies and actions required to build, promote and strengthen multi-hazard early warning systems (MHEWSs), especially in Least Developed Countries (LDCs) and Small Island Developing States (SIDS), and how to address key gaps such as faster and broader dissemination of warnings and the quality of the information provided to those at risk at the "last mile", through capacity development, operational support and improved coordination and governance.*

*MHEWC-I helped define an approach to establish national baselines for (MH)EWSs, to be used by government agencies and their partners to report on advances in early warning efforts on a periodic basis as contemplated in the Sendai Framework and its monitoring system, also referenced in the 2030 Sustainable Development Agenda and the Paris Agreement on Climate Change. A main goal was therefore to take stock of the current level of development of single and multi-hazard EWSs, i.e. their effectiveness, related actors and partnerships, coordination mechanisms, partnerships and gaps.*

*The Project, including through co-funding from WMO (USD 72,500), USAID (USD 72,000) and Spain (USD 18,200), allowed 393 experts from 95 countries to participate in the Conference and the subsequent GP2017. The Project supported participants from 24 LDCs<sup>2</sup> and from 14 SIDS<sup>3</sup>. 45 representatives from National Meteorological and Hydrological Services (NMHSs) participated, including 19 Permanent Representatives (PRs) of WMO Members. 16 funded participants and 41% of the speakers and facilitators at the Conference were women. Overall, 450 practitioners from a variety*

<sup>2</sup> Afghanistan, Bangladesh, Bhutan, Chad, Democratic Republic of the Congo, Ethiopia, Gambia, Guinea, Guinea-Bissau, Haiti, Lesotho, Liberia, Myanmar, Nepal, Niger, Senegal, Solomon Islands, South Sudan, Timor Leste, Togo, Tuvalu, Uganda, United Republic of Tanzania, Zambia

<sup>3</sup> Barbados, BCT, Belize, Cook Islands, Fiji, Haiti, Jamaica, New Caledonia, Samoa, Solomon Islands, Timor Leste, Tonga, Trinidad and Tobago, Tuvalu



	<p><i>of institutional and technical backgrounds participated for two days in the Conference. 82 posters on good and innovative practices from around the world on MHEWSs were presented.</i></p>
<p><b>12. Summary of outcomes and outputs</b></p>	<p><i>The Conference:</i></p> <ol style="list-style-type: none"> <li><i>1. Advocated the broadening of the scope of early warning, risk information and assessment to address multiple hazards and risks;</i></li> <li><i>2. Leveraged progress in the development of observation and monitoring systems, the use of Big Data and the strengthening of capacities to use modern information and communication technology, particularly for LDCs, SIDS and Land-locked Developing Countries (LLDC);</i></li> <li><i>3. Promoted good practices for warnings to reach the people in need for timely action, including especially the Common Alerting Protocol (CAP) standard for all hazards alerting across all kinds of media;</i></li> <li><i>4. Identified the requirements of MHEWSs to comply with end-to-end systems and interoperability at local, national and regional scales through the development of a Checklist for MHEWSs; and,</i></li> <li><i>5. Examined trans-boundary and regional issues in developing, disseminating and responding to early warnings and alerts of multiple hazards.</i></li> </ol> <p><i>Specific outputs of the Conference include (see Document list at the end of the Report, item 16):</i></p> <ol style="list-style-type: none"> <li><i>1. Draft Guidelines for Measuring Early Warning Access and Effectiveness;</i></li> <li><i>2. A Checklist for operationalizing impact-based MHEWSs;</i></li> <li><i>3. Promotion of practice and innovation in (MH)EWSs through learning, exchange and a good practice compilation using the posters provided for the poster session<sup>4</sup></i></li> <li><i>4. The Conference Report.</i></li> </ol> <p><i>Participants requested the organizers to bring forward the messages and outcomes of the Conference to the relevant agenda of the GP2017. They recognized the value of exchanges of practices and dialogues across the siloes of different institutions and hazard types as well as within countries, within regions and globally.</i></p>

<sup>4</sup> It is planned to synthesize the information for inclusion in the Guidelines for Measuring Early Warning Access and Effectiveness and/or the next version of the MHEWS Checklist.

*The focus of the discussions of the MHEWC-I were aligned with the Sendai Framework's Global Target G, namely 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". The deliberations were formulated against the main components of a MHEWS: (1) disaster risk knowledge; (2) detection, monitoring, analysis and forecasting of the hazards and consequences; (3) dissemination and communication; (4) preparedness at all levels to respond to warnings. Good practices for further scaling-up and commitment on actions were recognized through the efforts of the WMO SG's statement, WMO PR's Communiqué (included in the Conference Report, see item 16 below) and implementation of relevant initiatives such as the WMO Global Multi-hazard Alert System (GMAS) Framework and projects such as those under CREWS. These components have been employed to assess WMO Members' MHEWS capacities in a flagship report on Climate Services for Risk Information and Early Warning Systems which will be released on 13 October 2020 and submitted to the UNFCCC Subsidiary Body on Scientific and Technological Advice at the invitation of the Conference of Parties serving as the meeting of the Parties to the Paris Agreement (11/CMA.1).*

*The funds were mainly used to assist representatives from relevant institutions (in particular NMHSs, civil protection and DRR institutions, etc. from LDCs and SIDS, see above under item 11.) to attend the Conference. Other cost categories included interpretation, translation, publication and logistical costs and fees (overhead/project support costs). An amount of ca. USD 42,000 remained after the Conference had taken place and the outcome documents had been published, following a 6-month extension of the lifetime of the Project (until August 2018). These funds were used to:*

- Support the joint review of the Severe Weather Forecasting Demonstration Project (SWFDP), Flash Flood Guidance System (FFGS) and Coastal Inundation Forecasting Demonstration Project (CIFDP), as these three demonstration projects are core components of a number of CREWS projects and lessons learnt from their joint review are expected to greatly benefit the further implementation and sustainability of these CREWS projects;*
- Co-fund the preparations for (in particular the website) for the MHEWC-II which took place on 13 and 14 May 2019 in Geneva, again in conjunction with the then Sixth Session of the Global Platform*



	<p><i>for DRR (GP2019), from 13-17 May 2019. This follow-up Conference enabled following-up with recommendations and priorities identified during MHEWC-I.</i></p> <p><i>The Project is now finalized. Sustainability is provided by the active use – within CREWS projects and beyond – of e.g. the MHEWS Checklist and by preparing the MHEWC-II in 2019. The experts who contributed to the Conference under the umbrella of IN-MHEWS remained committed and active to move the early warning agenda forward and will again contribute to the MHEWC-II and eventually to the GP2019. Key results and lessons learnt from CREWS projects were presented at both events, providing good platforms for outreach, feedback and review.</i></p>
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### 13. Lessons Learned

**Kindly note important lessons learned from the project, including what were the factors that hindered or enabled successful project implementation (200 to 250 words).**

*The Conference was a great success with NMHS representatives from 45 different countries attending, in many cases, accompanied by staff from their civil protection and other agencies. However, getting these people to the event required a huge effort by the organizing staff and much persistence. Problems in getting visas for some attendees to transit either Europe or the USA proved insurmountable in some cases and highly problematic in many. It is recommended to NOT hold the next Conference in either Mexico or the US due to these problems.*

*Despite a number of letters and announcements about the Conference to WMO Members, it was very difficult to gain the attention of many of the target countries/their NMHSs and to inform them of the assistance available to attend the Conference until close to the event itself. As a result, many of the travel arrangements were undertaken at the “last minute” and some (because of visa issues – see above) missed the event entirely.*

*It was recommended that the next Conference would be held with less time between such Conferences than before (i.e. <11 years, e.g. two or four years) so that those who attended the event in Cancún will quickly recognize it as an event that is worthwhile and that assistance to representatives from LDCs, SIDS, and LLDCs to attend can be provided (note that the MHEWC-II took place in 2019 in Geneva).*

*To publicize such events, it is recommended to promote them also through the WMO Regional Offices and urge their staff to follow up on invitations and announcements with key target countries/NMHSs well in advance of the next event to avoid some of the delays mentioned above.*

*Further recommendations for moving the agenda forward include:*

- *To widely disseminate the MHEWS Checklist and the compilation of good practice;*
- *To develop guidance on measuring the access and effectiveness of (MH)EWSs, also in support of countries' efforts to monitor their contribution to Sendai Target G;*
- *To implement the GMAS Framework;*
- *To implement regional and sub-regional impact-based forecasting and warning services, support mechanisms and sharing of authoritative warnings;*
- *To further implementation WMO's DRR Programme and the Global Framework for Climate Services (GFCS);*
- *To more closely collaborate with other UN agencies to assist WMO Members through the provision of hydro-meteorological support to crisis management and humanitarian activities of the UN and other organizations; and*
- *To reconvene in two years to assess progress on the recommendations contained in the Conference Report.*

## **14. Stakeholders**

- Please see the list of MHEWC-I participants in the Conference Report*
- IN-MHEWS Partners*
- Participants of the GP2017*
- Stakeholders of CREWS Projects (at the time)*
- The wider WMO and DRR communities*





## 15. Visibility products

- a. *IN-MHEWS Website, hosted by WMO, including MHEWC-I & MHEWC-II*<sup>5</sup>
- b. *Multi-Hazard Early Warning Conference: Saving Lives, Reducing Losses – Climate change, associated extreme weather and demographic shifts means that record numbers of people are exposed to floods, heatwaves and other hazards*<sup>6</sup> – 19 May 2017
- c. *Multi-Hazard Early Warning Conference: unite in the first mile to reach the last mile - People-centred approach saves lives*<sup>7</sup> – 23 May 2017
- d. *Global forum on disaster risk reduction takes place in Mexico - Multi-Hazard Early Warning conference defines key take-home messages*<sup>8</sup> – 24 May 2017
- e. *Multi-hazard early warnings save lives – A new Multi-Hazard Early Warning Systems Checklist*<sup>9</sup> – 23 March 2018
- f. *Multi-Hazard Early Warning Systems: A Checklist – Meteoworld March 2018*<sup>10</sup>
- g. *2020 State of Climate Services Report: Risk Information and Early Warning Systems – WMO and 17 partners, including CREWS (to be published on 13 October 2020)*

## 16. Supporting documents

- a. *Draft Guidelines for Measuring Early Warning Access and Effectiveness*<sup>11</sup>
- b. *Multi-Hazard Early Warning Systems: A Checklist*<sup>12</sup>
- c. *The Conference Report*<sup>13</sup>, including the WMO PRs' Communiqué

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<sup>5</sup> <https://mhews.wmo.int/>

<sup>6</sup> <https://public.wmo.int/en/media/press-release/multi-hazard-early-warning-conference-saving-lives-reducing-losses>

<sup>7</sup> <https://public.wmo.int/en/media/news/multi-hazard-early-warning-conference-unite-first-mile-reach-last-mile>

<sup>8</sup> <https://public.wmo.int/en/media/press-release/global-forum-disaster-risk-reduction-takes-place-mexico>

<sup>9</sup> <https://public.wmo.int/en/media/news/multi-hazard-early-warnings-save-lives>

<sup>10</sup> <https://public.wmo.int/en/resources/meteoworld/multi-hazard-early-warning-systems-checklist>

<sup>11</sup> [https://www.wmo.int/pages/prog/drr/documents/mhews-ref/CREWS%20Consultation%20Document%20on%20Measuring%20EWS\\_Draft%2017%20May.pdf](https://www.wmo.int/pages/prog/drr/documents/mhews-ref/CREWS%20Consultation%20Document%20on%20Measuring%20EWS_Draft%2017%20May.pdf)

<sup>12</sup> [https://library.wmo.int/index.php?lvl=notice\\_display&id=20228#.W-6gvK6nGht](https://library.wmo.int/index.php?lvl=notice_display&id=20228#.W-6gvK6nGht)

<sup>13</sup> Currently available at: [https://wmoomm.sharepoint.com/:b:/s/Services/ETfgk\\_kzDZRFhrvWpgEVe7oBhL1DI5CWeZLL96Daitg\\_Rg?e=fJ7H0A](https://wmoomm.sharepoint.com/:b:/s/Services/ETfgk_kzDZRFhrvWpgEVe7oBhL1DI5CWeZLL96Daitg_Rg?e=fJ7H0A), will be made available at <https://mhews.wmo.int/> as well.



- d. *The 2017 Global Platform for DRR – Chair's summary: From Commitment to Action*<sup>14</sup>
- e. *Reports of the reviews of the SWFDP*<sup>15</sup>, *FFGS*<sup>16</sup> and *CIFDP*<sup>17</sup> and the joint recommendations<sup>18</sup>

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<sup>14</sup> [https://www.preventionweb.net/files/53989\\_chairssummaryofthe2017globalplatfor.pdf](https://www.preventionweb.net/files/53989_chairssummaryofthe2017globalplatfor.pdf)

<sup>15</sup> <https://www.wmo.int/pages/prog/www/DPS/documents/PartA-SWFDPReviewFinal.pdf>

<sup>16</sup> [https://www.wmo.int/pages/prog/www/DPS/documents/PartA-GFFGReviewReport\\_20181207\\_Final.pdf](https://www.wmo.int/pages/prog/www/DPS/documents/PartA-GFFGReviewReport_20181207_Final.pdf)

<sup>17</sup> <https://www.wmo.int/pages/prog/www/DPS/documents/PartA-CIFDPAassessment2018.pdf>

<sup>18</sup> [https://www.wmo.int/pages/prog/www/DPS/documents/PartB-Concept\\_IntegratedMHEWSforFFGSCIFDPandSWFDPwithCNAttachment-final1.pdf](https://www.wmo.int/pages/prog/www/DPS/documents/PartB-Concept_IntegratedMHEWSforFFGSCIFDPandSWFDPwithCNAttachment-final1.pdf)