Linkages between WMO technical works and the Sendai Framework Monitoring pertaining to Target G

Alasdair Hainsworth
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Global Target G

- Substantially increase the availability of, and access to, multi-hazard early warning systems and disaster risk information and assessments to people by 2030
## Indicators for measurement of Target g) at the global level

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Description</th>
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<tbody>
<tr>
<td>G-1</td>
<td>Number of countries that have multi-hazard early warning systems. (compound G2-G5)</td>
</tr>
<tr>
<td>G-2</td>
<td>Number of countries that have multi-hazard monitoring and forecasting systems.</td>
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<tr>
<td>G-3</td>
<td>Number of people per 100,000 that are covered by early warning information through local governments or through national dissemination mechanisms.</td>
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<tr>
<td>G-4</td>
<td>Percentage of local governments having a plan to act on early warnings.</td>
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<tr>
<td>G-5</td>
<td>Number of countries that have accessible, understandable, usable and relevant disaster risk information and assessment available to the people at the national and local levels.</td>
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<tr>
<td>G-6</td>
<td>Percentage of population exposed to or at risk from disasters protected through pre-emptive evacuation following early warning. Member States in a position to do so are encouraged to provide information on the number of evacuated people.</td>
</tr>
</tbody>
</table>
Components of EWS

Four of six indicators recommended by OIEWG for Target G correspond to key elements of EWS:

1. Disaster risk knowledge based on systematic collection of data and disaster risk assessments;
2. Detection, monitoring, analysis and forecasting of the hazards and possible consequences;
3. Dissemination and communication, by an official source, authoritative, timely, accurate and actionable warnings and associated information on likelihood and impact; and
4. Preparedness at all levels to respond
An integrated view of early warning systems

Developed and endorsed by three International Early Warning Conferences (1997, 2003, 2006), by the Hyogo and Sendai Frameworks, national hydrometeorological services, national emergency institutions and international and regional initiatives on other hazard warnings and now Updated by Multi-Hazard EWC Cancun 2017

MULTI-HAZARD EARLY WARNING
CONFERENCE
22 TO 23 MAY 2017
CANCÚN, MEXICO

MULTI-HAZARD EARLY WARNING SYSTEMS:
A CHECKLIST

Draft as of 15 Nov 2017
International Network for Multi-Hazard Early Warning Systems (IN-MHEWS)

• Proposed by number of UN organizations and partners/stakeholders at WCDRR’s Working Session on Early Warning as joint effort to assist and advise States in sustaining and improving national DRR and CCA strategies through multi-hazard early warning services.

• Builds on experience, good practice, achievements of States and international community within participating partners organizational mandates.

• Based on “hazard clusters” → address cascading impacts of related hazards and identifies relevant stakeholders groups at different levels.

• Focused on seamless MHEWS based on Standard Operating Procedures (SOPs) plus Impact-based Forecasting and Risk-based Warnings (IBF&RBW).
Key objectives of IN-MHEWS:

1. **Identify** effective strategies and actions to promote and strengthen MHEWS in support of implementation of Sendai Framework (e.g. Words into Action guides), UN Plan of Action on DRR for Resilience, GFCS, etc.;

2. **Facilitate** sharing of good practices and making available to governments & key stakeholders policy-relevant guidance to enhance MHEWS and related services, as an integral component of their national strategies for DRR, climate change adaptation, and resilience/sustainable development strategies;

3. **Promote** synergies and partnerships between and among stakeholders at national, regional and international levels and those in charge of MHEWS at national and local levels and strengthening of user-interface platforms

4. **Advocate** usefulness of MHEWS in regional and international platforms and among key stakeholders, including donors and across all sectors.

   → focus is on integration and crosscutting activities and provision of coordination and advisory mechanism that brings stakeholders and experts from different sectors and hazard clusters together
International Network for Multi-Hazard Early Warning Systems (IN-MHEWS)

- Has **steering group** with a rotating chair. Membership of **core partners**: WMO, WHO, UNDP, UNESCO-IOC/UNESCO, UNESCAP, UNISDR, UNOOSA / UN-SPIDER, IFRC, ITU, UNEP, UPU, EC JRC, GFZ, and GIZ) providing coordinating staff
  Further potential core partners: IMO, FAO, WFP, ICSU, GFDRR, IAEA

- **Network partners** (incl. representatives of national MHEWS, private sector consortia)

- Links to other **global** (e.g. CREWS, 5-10-50, UNISDR S&T Partnership, ICL, etc.) and **regional initiatives on early warning** (e.g. UNESCAP, WMO TCP, RIMES, DRMKC, etc.)

<table>
<thead>
<tr>
<th>Hazard (and consequence) clusters</th>
<th>Functional clusters</th>
<th>Regional components</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrometeorological hazards (WMO, UNESCO, etc.)</td>
<td>Risk knowledge (UNISDR, etc.)</td>
<td>Asia (UNESCAP, RIMES, etc.)</td>
</tr>
<tr>
<td>Geophysical hazards (UNESCO, UNESCO-IOC, ICL, etc.)</td>
<td>Detection, monitoring, analysis, forecasting of the hazards and respective risk assessment and generation of warnings (WMO, etc.)</td>
<td>Europe (EC JRC DRM Knowledge Centre, MeteoAlarm, etc.)</td>
</tr>
<tr>
<td>Technological hazards (IAEA, etc.)</td>
<td>Dissemination and communication of warnings and associated likelihood and impact information (ITU, WMO, etc.)</td>
<td>Others (WMO TCP)</td>
</tr>
<tr>
<td>Health-related hazards (WHO, etc.)</td>
<td>Preparedness and response capabilities (IFRC, UNOCHA, etc.) at the “last mile”</td>
<td></td>
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<tr>
<td>Food security (FAO)</td>
<td>Others</td>
<td></td>
</tr>
<tr>
<td>Others</td>
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</tbody>
</table>
Multi-Hazard Early Warning Conference

22-23 May 2017
The Checklist

• In two sections:
  1. Background
  2. Practical checklist of actions/initiatives
• Helps to identify the key actors
• Examines the 4 key elements of MHEWS and asks users to identify those components of each element that are in place
• Highlights linkages with other elements
• **Designed to be easy to use**
Example:

1. Are key hazards and related threats identified?
   - Characteristics of key hazards (e.g., intensity, disease transmissibility, frequency, probability) analysed, historical data evaluated and potential future risks assessed.
   - Hazard maps (dynamic when possible) developed that identify the geographical areas/people that could be affected by hazards.

2. Are exposure, vulnerabilities, capacities and Risks Assessed?
   - Assessment and quantification of exposed people, services (e.g. hospitals) and critical infrastructure (e.g. electricity and water works, quality of building stock) 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.
Conference Outcomes – MHEW Checklist

• Produce Checklist for Operationalizing Impact-Based, Multi-Hazard Early Warning Systems

• Document can be found on Conference web site: http://www.wmo.int/earlywarnings2017/content/outcome-documents

• Required updating to Multi-Hazard

• Will be published on World Meteorological Day (March 2018)
Conference Outcomes – Guidelines for Measuring MHEWS

• Aims to identify a set of metrics to provide guidance on how the effectiveness of, access to, early warning systems can be measured

• Document for comment on Conference web site:

http://www.wmo.int/earlywarnings2017/content/outcome-documents
Disaster Induced displacement

Weather related disasters are going to be very important when reporting against several targets

• >19.2 million people displaced by disasters in over 110 countries over 2015.
• Between 2008 and 2014, an average of 26.4 million people per year were displaced by disasters.
• Majority of displaced people globally were displaced by weather-related disasters, only a small minority by geophysical hazards.

Source: IOM Global Migration Trends Fact Sheet 2015
WMO Congress-17 Resolution 9 is designed to assist nations in measuring some indicators of the Sendai Framework for DRR

**Sendai Framework: Targets benefited**

**(a)** Substantially reduce global disaster mortality by 2030, aiming to lower average per 100,000 global mortality rate in the decade 2020-2030 compared to the period 2005-2015.

**(b)** Substantially reduce the number of affected people globally by 2030, aiming to lower average global figure per 100,000 in the decade 2020-2030 compared to the period 2005-2015.

**(c)** Reduce direct disaster economic loss in relation to global gross domestic product (GDP) by 2030.

**(d)** Substantially reduce disaster damage to critical infrastructure and disruption of basic services, among them health and educational facilities, including through developing their resilience by 2030.

**(g)** Substantially increase the availability of and access to multi-hazard early warning systems and disaster risk information and assessments to the people by 2030.

Systematic characterization and cataloguing of extreme weather and climate events in a form that allows data on losses and damage to be cross-referenced to the phenomena will lead to improved monitoring capabilities with higher resolution.
WMO Members (mostly YOUR NMHS) will develop* Cascading Event Records

Event UID: random string of 36 characters

$\text{xxxxxxxx-xxxx-xxxx-xxxx-xxxx-xxxxxxxxxxxx}$

* Upon approval by WMO Congress-18 in June 2019
Event

Key Event Parameters

- Record creation
- Event start
- Event end
- Spatial area
- Event type
- Local identifier
- Description of event
- Link identifiers

Description

Date & Time

Recognized spatial datatype (e.g. Geodatabase, shapefile)

From WMO Event Types catalog list (e.g. Strong gale)

Local identifier (e.g. Yolanda in the Philippines for Haiyan)

Open text description of event (e.g. winds 45 knots gusting to 55 knots)

UUID reference link to related events (e.g. Storm)
Thank you
Merci