



Training Workshop on Multi-Hazard Early Warning Systems with focus on Institutional Partnership and Coordination

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**Radisson Europa Hotel and Conference Center
San José, Costa Rica**

http://www.wmo.int/pages/prog/drr/events/MHEWSCostaRica/index_en.html

WORKSHOP DISCUSSION TOPICS

The scope of the training workshop on “Multi-Hazard Early Warning Systems with Focus on Institutional Partnerships and Coordination” includes policy, planning, legislative, institutional partnerships and cooperation aspects of Early Warning systems (EWS). Within this context, the workshop highlights the importance of a strong partnership between the National Disaster Risk Management Agencies and the National Meteorological and Hydrological Services. The following topics and questions will be used for the presentations of the good practices as well as the discussions at the various sessions of the Workshop.

1 Governance and Institutional Arrangements

1.1 Policy, institutional and legal frameworks

- 1.1.1 Describe your countries disaster risk management policy, legislation and legal frameworks, institutional coordination mechanisms for emergency preparedness and response planning. Are responsibilities mandates procedures and protocols for emergency situations clearly reflected?
- 1.1.2 Are there authoritative agencies identified through legislation for issuance of warnings of different hazards. If yes, please describe.
- 1.1.3 Describe how the role of the National Meteorological and Hydrological Services (NMHS) is reflected in emergency preparedness planning and related legislation(s).

1.2 National to local emergency planning and related linkages to early warning systems

- 1.2.1 Describe the process of emergency preparedness and response planning at national to local levels. Who is responsible to coordinate the planning at different levels?
- 1.2.2 Is the NMHS providing support for the emergency preparedness planning process? If yes, please describe.

1.3 Organizational structure for implementing the plans for early warning systems

- 1.3.1 Provide a list of agencies (e.g. government agencies, NGOs, media, etc.) that are responsible for management and implementation of different components of early warning systems.
- 1.3.2 Provide an organizational chart of the early warning system from national to local level.
- 1.3.3 Provide an early warning system organizational decision-making diagram, showing roles and responsibilities of different agencies, including the NMHS from national to local levels.

1.4 Institutional roles and working relations

- 1.4.1 Give a brief description of how your early warning system works operationally. In this context, identify the working relationships (formal and informal) among agencies involved in different components of early warning systems.
 - 1.4.2 Are there specific operational procedures for coordination among the agencies? Specifically, are these operational procedures formalized and documented?
 - 1.4.3 What is the role of the NMHS and its working relationships with other agencies? How does the NMHS collaborate with other technical agencies to leverage resources, capacities and expertise in early warning systems?
 - 1.5 Financial considerations for sustainability of different components of early warning systems
 - 1.5.1 Describe how the different components of the early warning system are financed. Are there dedicated financial resources for maintenance and sustainability of the system (e.g. observing networks, communication systems, emergency response, etc.)
 - 1.5.2 What are the sources of funding for the agencies and infrastructure needed to support different components of early warning systems (e.g. national to local government budgets, loans/grants from development banks, other international funding mechanisms, cost recovery, etc.)?
 - 1.5.3 What are the sources of funding to the NMHS to for development and maintenance of its capacities (Observing networks, 24/7 operational forecasting, communication, expertise, etc) to support the early warning system?
- 2 Utilization of risk information in emergency planning and warnings**
- 2.1 Is hazard-risk information utilized in emergency preparedness and response planning at national to local levels? If yes, describe how and who is responsible for what, and what is the role of the National Meteorological and Hydrological Services?
 - 2.2 Are there established mechanism(s) for collection and sharing of hazard and vulnerability data? If yes, please describe the mechanism(s), who is responsible for collecting what data? Is this process standardized? Do you have national database(s) of hazards and vulnerability data for various environmental hazards? How is this managed?
 - 2.3 Do you have national to local hazard-risk maps, for what risks?
- 3 Hazard monitoring, forecasting, and mandates for warning development**
- 3.1 For which natural hazards (see Annex I for a list of hazards), the National Meteorological and Hydrological Service in your country,
 - 3.1.1 Has sole mandate for the development of the warning for the hazard (specify the hazard) (Type I Hazard);
 - 3.1.2 Has joint mandate with another agency(ies) for the development of the warning hazard for the hazard (specify the hazard) (Type II Hazard);
 - 3.1.3 Provides information to other agencies that have the mandate for the development of the warning for the hazard (specify the hazard and the agency responsible for development of the warning) (Type III Hazard).
 - 3.2 Are there challenges for institutional coordination for the development of the warnings? If yes please describe the challenges and how they are addressed.
- 4 Warning dissemination mechanisms**
- 4.1 Specify main dissemination mechanism(s) for delivery of warnings to the authorities and the public (media, dedicated communication lines, internet, cell phone network, volunteers, etc)? Who is involved in this dissemination mechanism(s)? Are there redundant/backup mechanisms in case primary channels for warning communication fail?
 - 4.2 How do you assess the effectiveness of the dissemination mechanism(s) to ensure that warnings reach their target audiences in a timely manner?
- 5 Emergency preparedness and response activities (national to local)**
- 5.1 Describe the national to local emergency plans and response procedures.
 - 5.2 Are there sufficient resources available for implementation of the plans and response actions? If no, please elaborate.
 - 5.3 Are there public education programmes (formal and informal) on warnings and authoritative sources, the various hazards and related risks, and emergency preparedness and response procedures? If yes, please describe.

- 5.4 Are warning levels used in your early warning system? Who determines them? How are these levels linked to emergency preparedness and response decisions and actions at national to local levels?

6 Improvement of overall operational framework of the early warning system

- 6.1 Are there evaluation and feedback mechanisms within the operational early warning system in order to improve:
- 6.1.1 The system as a whole
 - 6.1.2 Products and services provided by the National Meteorological and Hydrological Service to disaster risk management agencies and other stakeholders.
 - 6.1.3 Operational coordination mechanisms of the disaster risk management stakeholders with the National Meteorological and Hydrological Services
- 6.2 If yes, please describe, and indicate:
- 6.2.1 If these mechanisms engage (i) the agencies responsible for early warning system and emergency preparedness and response, (ii) the public, (iii) other stakeholders to assess the effectiveness of the warning system?
 - 6.2.2 If feedback is conducted regularly or after an event?
- 6.3 Has there been specific disaster(s) or hazard event(s) that has lead to a significant re-evaluation and improvement of your EWS? If yes, please specify and elaborate.

7 Please provide example of events where your EWS saved lives and explain how.

8 What are your priorities for the improvement of the EWS at national level?

9 Provide concrete areas of regional cooperation which could benefit your country's early warning system.

Annex I: Hazards list

- Tornado (rotational high winds)
- Flash flood
- Strong winds
- Hailstorm
- Thunderstorm or lightning
- Heavy snow
- Freezing rain
- Dense fog
- Tropical cyclone
- Storm surge
- Coastal flooding
- Heat wave: period of abnormally high temperatures
- Cold wave: period of abnormally low temperatures
- Drought
- River flooding
- Marine hazards (storm, sea ice, icebergs, etc.)
- Sandstorm
- Landslide or mudslide
- Airborne hazardous substances (i.e., nuclear, biological, chemical, etc.)
- Waterborne hazards (i.e., nuclear, biological, chemical, oil spills, etc.)
- Desert locust swarm
- Hydrometeorological hazards to aviation (i.e., turbulence, icing)
- Avalanche
- Forest or wild land fire
- Smoke, Dust or Haze
- Earthquakes
- Tsunami
- Volcanic events
- Others, please specify