



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

*March 22-25, 2010*

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

[http://www.wmo.int/pages/prog/drr/events/MHEWSCostaRica/index\\_en.html](http://www.wmo.int/pages/prog/drr/events/MHEWSCostaRica/index_en.html)

## QUESTIONNAIRE FOR THE WORKING GROUPS

### Guidance for Completing the Questionnaire

The following set of questions will be the basis for discussions during the working groups during session 4 of the “Training Workshop on Multi-Hazard Early Warning Systems.” Your response to these questions will be critical to facilitate, (i) exchange of experiences and systematic discussions on national capacities, gaps and needs and, (ii) drafting of the workshop outcome document that will highlight the priorities of action for national Early Warning Systems (EWS) development and concrete areas for regional cooperation for the region.

1) All national participants are kindly requested to coordinate to respond to the following questionnaire prior to the Workshop. Please complete this questionnaire electronically, through a consultative process that involves the National Disaster Risk Management Agency, National Meteorological and Hydrological Service and other relevant agencies and stakeholders involved in EWS in your country.

2) Please submit the completed survey to the WMO Secretariat by 15 March 2010 via e-mail to:

Dr. Maryam Golnaraghi ([mgolnaraghi@wmo.int](mailto:mgolnaraghi@wmo.int));  
Mr Oscar Arango ([OArango@wmo.int](mailto:OArango@wmo.int)); and  
CC Mr. Charles Baubion ([cbaubion@wmo.int](mailto:cbaubion@wmo.int)).

3) All participants should bring a hard copy and an electronic version of the completed questionnaire to the workshop.

4) Please contact any of the following WMO Secretariat focal points if you have any questions related to the questionnaire:

Dr Maryam Golnaraghi (English)  
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**Please list the contact information for individuals who contributed to this questionnaire:**

Title	First name	Last name	Country	Name of agency	Phone number	e-mail address

<p><b>1 Governance and Institutional Arrangements</b></p> <p>1.1 Please describe the policy, institutional and legal frameworks that support emergency preparedness and response planning and how the role of the NMHS is reflected.</p> <p><b>Answer:</b></p>
<p>1.2 Describe the process of emergency preparedness and response planning at national to local levels and how the NMHS supports it.</p> <p><b>Answer:</b></p>
<p>1.3 Please, provide:</p> <ul style="list-style-type: none"> <li>• A list of agencies that are responsible for management and implementation of different components of early warning systems,</li> <li>• An organizational chart of the EWS and,</li> <li>• An organizational decision-making diagram, showing roles and responsibilities of different agencies, including the NMHS.</li> </ul> <p><b>Answer:</b></p>
<p>1.4 Give a brief description of how your early warning system works operationally. In this context, identify the working relationships among agencies listed in 1.3 above.</p> <p><b>Answer:</b></p>

- 1.5 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.)

**Answer:**

**2 Utilization of risk information in emergency planning and warnings**

- Is hazard-risk information utilized in emergency preparedness and response planning? If yes, please describe how and who is responsible for what?
- Do you have national to local hazard-risk maps, for what risks?

**Answer:**

**3 Hazard monitoring, forecasting, and mandates for warning development**

- For which natural hazards (see Annex I for a list of Natural Hazards), the National Meteorological and Hydrological Service
  - has sole mandate for the development of the warning for the hazard (**Type I Hazard**);
  - has joint mandate with other agency(ies) for the development of the warning for the hazard (**Type II Hazard**);
  - provides information to other agencies that have the mandate for the development of the warning for the hazard (**Type III Hazard**).

Please note that: A reference list of hazards is provided at the end of this text),

- Are there challenges for institutional coordination for the development of the warnings? If yes please describe the challenges and how they are addressed.

**Answer:**

**4 Warning dissemination mechanisms**

- Specify the dissemination mechanism(s) for delivery of warnings to the authorities and the public? Who is involved in this dissemination mechanism(s)?
- How do you assess the effectiveness of the dissemination mechanism(s) to ensure that the warnings reached their target audiences in a timely manner?

**Answer:**

**5 Emergency preparedness and response activities (national to local)**

- Describe the national to local emergency plans and response procedures.

<ul style="list-style-type: none"> <li>• 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?</li> </ul>
<b>Answer:</b>
<p><b>6 Improvement of overall operational framework of the early warning system</b></p> <ul style="list-style-type: none"> <li>• Please identify and describe evaluation and feedback mechanisms within the operational early warning system that help to improve: <ul style="list-style-type: none"> <li>- The system as a whole.</li> <li>- Products and services provided by the National Meteorological and Hydrological Service to disaster risk management agencies and other stakeholders.</li> <li>- Operational coordination mechanisms of the disaster risk management stakeholders with the National Meteorological and Hydrological Services.</li> </ul> </li> <li>• 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.</li> </ul>
<b>Answer:</b>
<p><b>7 Please provide example of events where your EWS saved lives and explain how.</b></p>
<b>Answer:</b>
<p><b>8 Which of the following areas are your priorities for the improvement of your EWS? Please elaborate.</b></p> <ul style="list-style-type: none"> <li>• Governance and Institutional Arrangements</li> <li>• Utilization of risk information in emergency planning and warnings</li> <li>• Hazard monitoring, forecasting, and mandates for warning development</li> <li>• Warning dissemination mechanisms</li> <li>• Emergency preparedness and response activities (national to local)</li> </ul>
<b>Answer:</b>
<p><b>9 Provide concrete areas of regional cooperation which could benefit your country's early warning system?</b></p>
<b>Answer:</b>

## 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