

# **ANNEXES**



  
**Annex 1 – The Survey Questionnaire**  


## **WMO Country-Level Disaster Prevention and Mitigation Programme Survey**

WMO, through its crosscutting Disaster Risk Reduction Programme has initiated the following “Country-level Disaster Risk Reduction Survey”. Your response to this survey would be critical in the development of the WMO strategic directions and crosscutting work plan to address your needs most effectively. Please complete this easy to complete survey, providing information related to your country or territory in the following areas: i) Key hazards ii) The legislative and organizational aspects of disaster risk reduction and how your agency is linked in this process iii) Capabilities (i.e., strengths and weaknesses), iv) Gaps and needs to support disaster risk reduction activities.

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### **Respondent information**

Last Name:

First Name:

Title:

Country:

WMO Region:

Organization:

E-mail address:

Telephone number:

## Section I: Hazards that affect your country and hazard data

1. Listing and ranking of hazards that affect your Country		
Hazards	Please indicate if this hazard occurs in your country	Please rank the top 10 hazards (where 1 is the highest impact and 10 is the lowest) that cause the highest impact in terms of loss of life, number of people affected, or economic losses?
Tornado (rotational high winds)	Yes <input type="checkbox"/> No <input type="checkbox"/>	Rank:
Flash flood	Yes <input type="checkbox"/> No <input type="checkbox"/>	Rank:
Strong winds	Yes <input type="checkbox"/> No <input type="checkbox"/>	Rank:
Hailstorm	Yes <input type="checkbox"/> No <input type="checkbox"/>	Rank:
Thunderstorm or lightning	Yes <input type="checkbox"/> No <input type="checkbox"/>	Rank:
Heavy snow	Yes <input type="checkbox"/> No <input type="checkbox"/>	Rank:
Freezing rain	Yes <input type="checkbox"/> No <input type="checkbox"/>	Rank:
Dense fog	Yes <input type="checkbox"/> No <input type="checkbox"/>	Rank:
Tropical cyclone	Yes <input type="checkbox"/> No <input type="checkbox"/>	Rank:
Storm surge	Yes <input type="checkbox"/> No <input type="checkbox"/>	Rank:
Coastal flooding	Yes <input type="checkbox"/> No <input type="checkbox"/>	Rank:
Heat wave: period of abnormally high temperatures	Yes <input type="checkbox"/> No <input type="checkbox"/>	Rank:
Cold wave: period of abnormally low temperatures	Yes <input type="checkbox"/> No <input type="checkbox"/>	Rank:
Drought	Yes <input type="checkbox"/> No <input type="checkbox"/>	Rank:
River flooding	Yes <input type="checkbox"/> No <input type="checkbox"/>	Rank:
Marine hazards (storm, sea ice, icebergs, etc.)	Yes <input type="checkbox"/> No <input type="checkbox"/>	Rank:
Sandstorm	Yes <input type="checkbox"/> No <input type="checkbox"/>	Rank:
Landslide or mudslide	Yes <input type="checkbox"/> No <input type="checkbox"/>	Rank:
Airborne hazardous substances (i.e., nuclear, biological, chemical, etc. )	Yes <input type="checkbox"/> No <input type="checkbox"/>	Rank:
Waterborne hazards (i.e., nuclear, biological, chemical, oil spills, etc. )	Yes <input type="checkbox"/> No <input type="checkbox"/>	Rank:
Desert locust swarm	Yes <input type="checkbox"/> No <input type="checkbox"/>	Rank:
Hydrometeorological hazards to aviation (i.e., turbulence, icing)	Yes <input type="checkbox"/> No <input type="checkbox"/>	Rank:
Avalanche	Yes <input type="checkbox"/> No <input type="checkbox"/>	Rank:
Forest or wild land fire	Yes <input type="checkbox"/> No <input type="checkbox"/>	Rank:
Smoke, Dust or Haze	Yes <input type="checkbox"/> No <input type="checkbox"/>	Rank:
Earthquakes	Yes <input type="checkbox"/> No <input type="checkbox"/>	Rank:
Tsunami	Yes <input type="checkbox"/> No <input type="checkbox"/>	Rank:
Volcanic events	Yes <input type="checkbox"/> No <input type="checkbox"/>	Rank:

Data archives of hydrometeorological hazards in your country and the relevant societal data defining their impacts.	
2. Is there a designated national agency responsible for compiling, archiving, and providing official information on the impacts of disasters in your country (i.e., loss of life, number of people affected, or economic losses)?	Yes <input type="checkbox"/> No <input type="checkbox"/>
a. If "Yes", please specify the name of this agency or agencies:	
3. Do you have access to official, reliable information on the <u>impacts</u> of disasters that have affected your Country?	Yes <input type="checkbox"/> No <input type="checkbox"/>

a. If "Yes", please what the source of your information is:	
4. Does your National Meteorological and Hydrological Service maintain a database of official information on the impacts of disasters that have affected your country?	Yes <input type="checkbox"/> No <input type="checkbox"/>
a. If "Yes", do you regularly update this database?	Yes <input type="checkbox"/> No <input type="checkbox"/>

b. Please answer the following regarding your hazard database:

Hazards that cause disasters	Indicate for which hazards you keep historical data archives	If you maintain archives of historical hazard data, does this data include information on:			
		Standardized meteorological / hydrological information (e.g. spatial, temporal) to characterize this hazard	Loss of life	Number of people affected	Economic cost
Tornado (rotational high winds)	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
Flash flood	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
Strong winds	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
Hailstorm	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
Thunderstorm or lightning	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
Heavy snow	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
Freezing rain	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
Dense fog	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
Tropical cyclone	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
Storm surge	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
Coastal flooding	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
Heat wave: period of abnormally high temperatures	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
Cold wave: period of abnormally low temperatures	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
Drought	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
River flooding	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
Marine hazards (sea ice, icebergs, etc.)	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
Sandstorm	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
Landslide or mudslide	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
Airborne hazardous substances (i.e., nuclear, biological, chemical, etc.)	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
Waterborne hazards (i.e., nuclear, biological, chemical, oil spills, etc.)	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
Desert locust swarm	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
Hydrometeorological hazards to aviation (i.e., turbulence, icing)	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
Avalanche	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
Forest or wild land fire	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>

b. Please answer the following regarding your hazard database:

Hazards that cause disasters	Indicate for which hazards you keep historical data archives	If you maintain archives of historical hazard data, does this data include information on:			
		Standardized meteorological / hydrological information (e.g. spatial, temporal) to characterize this hazard	Loss of life	Number of people affected	Economic cost
Smoke, Dust or Haze	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
Earthquakes	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
Tsunami	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
Volcanic events	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>

**Section II: National legislation, organizational structure and the role of the National Meteorological and Hydrological Service related to disaster risk reduction in your country.**

1. Is there legislation that governs the way that disaster risk reduction activities are organized in your country?	Yes <input type="checkbox"/> No <input type="checkbox"/>
2. Is disaster risk reduction coordinated at the national level in your country? If "Yes" please answer questions a through f.	Yes <input type="checkbox"/> No <input type="checkbox"/>
a. Are all disaster risk reduction activities coordinated under the direct line authority of the Head of Government?	Yes <input type="checkbox"/> No <input type="checkbox"/>
b. Are all disaster risk reduction activities coordinated under one ministry?	Yes <input type="checkbox"/> No <input type="checkbox"/>
i. If "Yes", Please specify the ministry:	
c. Is there a <b>national committee</b> for disaster risk reduction involving multiple ministries and agencies?	Yes <input type="checkbox"/> No <input type="checkbox"/>
d. Are there other organizational structures for coordination of disaster risk reduction activities (multi-ministry, multi-agency, etc.)?	Yes <input type="checkbox"/> No <input type="checkbox"/>
i. If "Yes", Please specify:	
e. Is there national legislation that clearly defines the roles that each organization or agency plays within this national coordination mechanism for disaster risk reduction?	Yes <input type="checkbox"/> No <input type="checkbox"/>
i. If "Yes", please specify the title and date of the legislation:	
Title:	
Date:	
f. Is your National Meteorological and Hydrological Service a participant in the National structure or committee for disaster risk reduction? if "Yes", please answer questions i. – ii.	Yes <input type="checkbox"/> No <input type="checkbox"/>
i. Is your National Meteorological and Hydrological Service a member of this National structure or committee?	Yes <input type="checkbox"/> No <input type="checkbox"/>
ii. Please specify in what capacity:	



3. Has a <u>Disaster Risk Reduction Focal Point</u> been established at your National Meteorological and Hydrological Service to coordinate activities to respond to disaster risk reduction needs? If "Yes", at what level does the Focal Point coordinate activities?	Yes <input type="checkbox"/> No <input type="checkbox"/>
a. National level?	Yes <input type="checkbox"/> No <input type="checkbox"/>
b. International and regional levels?	Yes <input type="checkbox"/> No <input type="checkbox"/>
4. Does your National Meteorological and Hydrological Service provide support (through expertise, products and services) at national level to agencies responsible for disaster risk reduction?	Yes <input type="checkbox"/> No <input type="checkbox"/>
If you answered "Yes", in which capacities?	
a. Activities related to disaster prevention (e.g. hazard mapping, expert advice, and providing historical hazard data for risk assessment projects, etc.)	Yes <input type="checkbox"/> No <input type="checkbox"/>
b. Emergency planning and preparedness (e.g. early warnings of potential disasters, providing educational programmes for the public / decision makers, expert advice for emergency response planning, assisting in the planning and execution of drills)	Yes <input type="checkbox"/> No <input type="checkbox"/>
c. Emergency response operations (e.g. real-time monitoring of weather and hydrological conditions, issuance of updated hydro-meteorological maps, forecasts in support of operational emergency response, and rescue operations, etc.)	Yes <input type="checkbox"/> No <input type="checkbox"/>
d. Reconstruction phase (e.g. hazard data for input to reconstruction decisions)	Yes <input type="checkbox"/> No <input type="checkbox"/>
5. Does the National Meteorological and Hydrological Service provide similar support to the government activities for disaster risk reduction at the following levels:	
a. Provincial or state?	Yes <input type="checkbox"/> No <input type="checkbox"/>
b. Municipal or local level?	Yes <input type="checkbox"/> No <input type="checkbox"/>
6. Does the National Meteorological and Hydrological Service coordinate with emergency management authorities for emergency planning and response activities?	Yes <input type="checkbox"/> No <input type="checkbox"/>
a. At the national level	Yes <input type="checkbox"/> No <input type="checkbox"/>
b. At the provincial and/or municipal levels	Yes <input type="checkbox"/> No <input type="checkbox"/>
7. Does your National Meteorological and Hydrological Service collaborate with the National Red Cross and Red Crescent Societies in your country?	Yes <input type="checkbox"/> No <input type="checkbox"/>
8. Does the National Meteorological and Hydrological Service interact with the office of the United Nations Coordinator in your country?	Yes <input type="checkbox"/> No <input type="checkbox"/>
9. Does your country have a combined National Meteorological and Hydrological Service? If "Yes", please answer questions a – b.	Yes <input type="checkbox"/> No <input type="checkbox"/>
a. Please specify the ministry that oversees the combined National Meteorological and Hydrological service in your country:  Ministry name:	
b. Is there national legislation that clearly defines the role that the combined National Meteorological and Hydrological Service plays in disaster risk reduction?	Yes <input type="checkbox"/> No <input type="checkbox"/>

10. If in your country the National Meteorological Service and the National Hydrological Service are separate agencies, please answer questions a through f.	
a. Please specify the Ministry that oversees the National Meteorological Service:  Ministry name:	
b. Is there legislation that clearly defines the role that the National Meteorological Service plays in disaster risk reduction?	Yes <input type="checkbox"/> No <input type="checkbox"/>
c. Please specify the Ministry that oversees the National Hydrological Service:  Ministry name:	
d. Is there legislation that clearly defines the role that the National Hydrological Services plays in disaster risk reduction?	Yes <input type="checkbox"/> No <input type="checkbox"/>
e. Are there partnership agreements that specify joint mandates between the <b>National Meteorological Service</b> and <b>National Hydrological Service</b> to develop joint products and issue warnings?	Yes <input type="checkbox"/> No <input type="checkbox"/>
f. Do they coordinate the issuances of warnings for impending hydrometeorological <b>hazards</b> in any of the following manners:	
i. Sharing of forecast products and data analysis that could enhance warning quality	Yes <input type="checkbox"/> No <input type="checkbox"/>
ii. Before an official warning is issued that relates to both meteorological hazard(s) and hydrological hazard(s)	Yes <input type="checkbox"/> No <input type="checkbox"/>
iii. Before an official warning is issued by either organization for any hazard	Yes <input type="checkbox"/> No <input type="checkbox"/>
iv. Other coordination is performed (please specify):	
v. Coordination is not performed	Yes <input type="checkbox"/> No <input type="checkbox"/>
11. Does your National Meteorological and Hydrological Service participate in disaster risk reduction activities and initiatives of organizations on the level of a WMO Region or other regional economic grouping? If "Yes", please answer questions a. and b:	Yes <input type="checkbox"/> No <input type="checkbox"/>
a. International organizations	Yes <input type="checkbox"/> No <input type="checkbox"/>
i. International Federation of Red Cross and Red Crescent Societies (IFRC)	Yes <input type="checkbox"/> No <input type="checkbox"/>
ii. Office for the Coordination of Humanitarian Affairs (OCHA)	Yes <input type="checkbox"/> No <input type="checkbox"/>
iii. United Nations Development Programme (UNDP)	Yes <input type="checkbox"/> No <input type="checkbox"/>
iv. Other, please specify (e.g., International funding agencies, United Nations agencies):	
b. Regional organizations, please specify (e.g. Regional development banks, Regional programmes and initiatives for disaster risk reduction, etc.):	

### Section III: National Meteorological and Hydrological Service capacity and products and services to support different phases of Disaster Risk Reduction.

1. If your National Meteorological and Hydrological Service has a historical archive of hydro-meteorological hazards, does it provide the following value added services in support of hydrometeorological risk assessment activities of other agencies in your country?	
a. Quality controlled historical databases of hazards	Yes <input type="checkbox"/> No <input type="checkbox"/>
b. Statistical analyses to characterize the hazards	Yes <input type="checkbox"/> No <input type="checkbox"/>
c. Analyses of the potential impacts (e.g. on infrastructures, populations, food security and clean water, etc.)	Yes <input type="checkbox"/> No <input type="checkbox"/>
d. Hazard mapping and high-risk zone analysis	Yes <input type="checkbox"/> No <input type="checkbox"/>
e. Technical advice (in support of emergency plans, emergency response planning, provision of data and expertise to support hydrometeorological risk assessment for development projects, etc.)	Yes <input type="checkbox"/> No <input type="checkbox"/>

2. Does the National Meteorological and Hydrological Service provide the following services based on real-time monitoring of hazards?	
a. Hydrometeorological maps based on observational sources	Yes <input type="checkbox"/> No <input type="checkbox"/>
b. Special Statements	Yes <input type="checkbox"/> No <input type="checkbox"/>
c. Advisories (preparation to take action for impending hydro-metrological hazards)	Yes <input type="checkbox"/> No <input type="checkbox"/>
d. Watches	Yes <input type="checkbox"/> No <input type="checkbox"/>
e. Warnings	Yes <input type="checkbox"/> No <input type="checkbox"/>
f. Technical briefing material	Yes <input type="checkbox"/> No <input type="checkbox"/>
3. Does your National Meteorological and Hydrological Service have an operational observing capacity that issues observations in regular intervals?	Yes <input type="checkbox"/> No <input type="checkbox"/>
a. Is this a dedicated 24 hours a day, every day of the year observing service?	Yes <input type="checkbox"/> No <input type="checkbox"/>
4. Does your National Meteorological and Hydrological Service have an operational forecasting capacity?	Yes <input type="checkbox"/> No <input type="checkbox"/>
a. Is this a dedicated 24 hours a day, every day of the year forecasting service?	Yes <input type="checkbox"/> No <input type="checkbox"/>
i. If "Yes", is a staff meteorologist required to be on site to operate this service?	Yes <input type="checkbox"/> No <input type="checkbox"/>
ii. If "No" please specify the extent of operations (e.g., hours of operation and level of staffing):	
b. Does the forecasting staff have access to real-time hydrometeorological data for development of forecast products?	Yes <input type="checkbox"/> No <input type="checkbox"/>
c. Are communications facilities available 24 hours a day, every day of the year?	Yes <input type="checkbox"/> No <input type="checkbox"/>
d. Please indicate what forecast products you provide:	
i. Nowcast	Yes <input type="checkbox"/> No <input type="checkbox"/>
ii. 24 hour forecast	Yes <input type="checkbox"/> No <input type="checkbox"/>
iii. 3-, 4-, 5- days forecast	Yes <input type="checkbox"/> No <input type="checkbox"/>
iv. 7 day forecast	Yes <input type="checkbox"/> No <input type="checkbox"/>
v. 10 day outlook	Yes <input type="checkbox"/> No <input type="checkbox"/>
vi. Seasonal outlooks of probabilities of potential hazards	Yes <input type="checkbox"/> No <input type="checkbox"/>
e. Is there a dedicated 24 hours a day, every day of the year warning programme that issues watches, alerts, and warnings?	Yes <input type="checkbox"/> No <input type="checkbox"/>
i. If "Yes", is a staff meteorologist required to be onsite during the operational hours of this programme?	Yes <input type="checkbox"/> No <input type="checkbox"/>
5. Which of the following information and sources does your National Meteorological and Hydrological Service use to provide forecasts, advisories and warnings of hydrometeorological hazards?	
a. Observational data collected by your service	Yes <input type="checkbox"/> No <input type="checkbox"/>
b. Regional-scale observational data and predictions, advisories, and forecasts provided by WMO Regional Centre(s) (i.e. Regional Specialized Meteorological Centres)	Yes <input type="checkbox"/> No <input type="checkbox"/>
c. Observational data and/or predictions provided by the National Meteorological and Hydrological Services of Neighbouring or adjacent countries	Yes <input type="checkbox"/> No <input type="checkbox"/>
d. Observational data and/or predictions provided by other organizations in your country	Yes <input type="checkbox"/> No <input type="checkbox"/>
e. Other (please specify):	

<b>If your Country has coastal waters please answer questions 6 – 10.</b>	
6. Does your National Meteorological and Hydrological Service in its observing capacity, have sea level stations (coastal or deep-ocean) to monitor sea level?	Yes <input type="checkbox"/> No <input type="checkbox"/>
a. If "Yes", does your National Meteorological and Hydrological Service send real-time observation data from these sea level stations through the Global Telecommunication System (GTS)?	Yes <input type="checkbox"/> No <input type="checkbox"/>
7. Does your National Meteorological and Hydrological Service receive real-time marine observational data from the GTS?	Yes <input type="checkbox"/> No <input type="checkbox"/>
8. Does your National Meteorological and Hydrological Service have a marine forecast and warning service that provides forecasts and warnings (e.g. storm and gale warnings, weather bulletins) to the mariners and coastal zone users in their region?	Yes <input type="checkbox"/> No <input type="checkbox"/>
a. If "No", does the Port Meteorological Officer have the mandate to provide marine forecasts and warnings to mariners and coastal zone users in their region?	Yes <input type="checkbox"/> No <input type="checkbox"/>
i. If "No", please specify what service has this mandate:	
9. Does your National Meteorological and Hydrological Service receive forecasts and warnings from the marine Metarea coordinator(s)?	Yes <input type="checkbox"/> No <input type="checkbox"/>
10. Does your National Meteorological and Hydrological Service prepare and disseminate forecast or warning products for the Global Maritime Distress Safety System (GMDSS)?	Yes <input type="checkbox"/> No <input type="checkbox"/>
a. If "Yes", does your National Meteorological and Hydrological Service coordinate these products with the appropriate Metarea coordinator(s)?	Yes <input type="checkbox"/> No <input type="checkbox"/>

11. Please specify for what hazards your National Meteorological and Hydrological Service issues warnings, identify who is the issuer, and if the issuing agency is the sole issuer (please note: **NMS** = National Meteorological Service; **NHS** = National Hydrological Service; **Combined service** = National Meteorological and Hydrological Service)

Hazards that cause disasters	Are warnings issued for this hazard	Who issues these warnings	If warnings are issued for this hazard, is the issuing service mandated by the government as the sole issuer?	For the warning services that your country provides, please indicate if further improvements are necessary	Does the warning statement include information on the potential risks (impacts) of the hazard?
Tornado (rotational high winds)	Yes <input type="checkbox"/> No <input type="checkbox"/>	<input type="checkbox"/> NMS <input type="checkbox"/> NHS <input type="checkbox"/> Combined service	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
Flash flood	Yes <input type="checkbox"/> No <input type="checkbox"/>	<input type="checkbox"/> NMS <input type="checkbox"/> NHS <input type="checkbox"/> Combined service	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
Strong winds	Yes <input type="checkbox"/> No <input type="checkbox"/>	<input type="checkbox"/> NMS <input type="checkbox"/> NHS <input type="checkbox"/> Combined service	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
Hailstorm	Yes <input type="checkbox"/> No <input type="checkbox"/>	<input type="checkbox"/> NMS <input type="checkbox"/> NHS <input type="checkbox"/> Combined service	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
Thunderstorm or lightning	Yes <input type="checkbox"/> No <input type="checkbox"/>	<input type="checkbox"/> NMS <input type="checkbox"/> NHS <input type="checkbox"/> Combined service	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
Heavy snow	Yes <input type="checkbox"/> No <input type="checkbox"/>	<input type="checkbox"/> NMS <input type="checkbox"/> NHS <input type="checkbox"/> Combined service	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
Freezing rain	Yes <input type="checkbox"/> No <input type="checkbox"/>	<input type="checkbox"/> NMS <input type="checkbox"/> NHS <input type="checkbox"/> Combined service	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
Dense fog	Yes <input type="checkbox"/> No <input type="checkbox"/>	<input type="checkbox"/> NMS <input type="checkbox"/> NHS <input type="checkbox"/> Combined service	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
Tropical cyclone	Yes <input type="checkbox"/> No <input type="checkbox"/>	<input type="checkbox"/> NMS <input type="checkbox"/> NHS <input type="checkbox"/> Combined service	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
Storm surge	Yes <input type="checkbox"/> No <input type="checkbox"/>	<input type="checkbox"/> NMS	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>

11. Please specify for what hazards your National Meteorological and Hydrological Service issues warnings, identify who is the issuer, and if the issuing agency is the sole issuer (please note: <b>NMS</b> = National Meteorological Service; <b>NHS</b> = National Hydrological Service; <b>Combined service</b> = National Meteorological and Hydrological Service)					
Hazards that cause disasters	Are warnings issued for this hazard	Who issues these warnings	If warnings are issued for this hazard, is the issuing service mandated by the government as the sole issuer?	For the warning services that your country provides, please indicate if further improvements are necessary	Does the warning statement include information on the potential risks (impacts) of the hazard?
		<input type="checkbox"/> NHS <input type="checkbox"/> Combined service			
Coastal flooding	Yes <input type="checkbox"/> No <input type="checkbox"/>	<input type="checkbox"/> NMS <input type="checkbox"/> NHS <input type="checkbox"/> Combined service	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
Heat wave: period of abnormally high temperatures	Yes <input type="checkbox"/> No <input type="checkbox"/>	<input type="checkbox"/> NMS <input type="checkbox"/> NHS <input type="checkbox"/> Combined service	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
Cold wave: period of abnormally low temperatures	Yes <input type="checkbox"/> No <input type="checkbox"/>	<input type="checkbox"/> NMS <input type="checkbox"/> NHS <input type="checkbox"/> Combined service	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
Drought	Yes <input type="checkbox"/> No <input type="checkbox"/>	<input type="checkbox"/> NMS <input type="checkbox"/> NHS <input type="checkbox"/> Combined service	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
River flooding	Yes <input type="checkbox"/> No <input type="checkbox"/>	<input type="checkbox"/> NMS <input type="checkbox"/> NHS <input type="checkbox"/> Combined service	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
Marine hazards (sea ice, icebergs, etc.)	Yes <input type="checkbox"/> No <input type="checkbox"/>	<input type="checkbox"/> NMS <input type="checkbox"/> NHS <input type="checkbox"/> Combined service	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
Sandstorm	Yes <input type="checkbox"/> No <input type="checkbox"/>	<input type="checkbox"/> NMS <input type="checkbox"/> NHS <input type="checkbox"/> Combined service	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
Landslide or mudslide	Yes <input type="checkbox"/> No <input type="checkbox"/>	<input type="checkbox"/> NMS <input type="checkbox"/> NHS <input type="checkbox"/> Combined service	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
Airborne hazardous substances	Yes <input type="checkbox"/> No <input type="checkbox"/>	<input type="checkbox"/> NMS	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>

11. Please specify for what hazards your National Meteorological and Hydrological Service issues warnings, identify who is the issuer, and if the issuing agency is the sole issuer (please note: <b>NMS</b> = National Meteorological Service; <b>NHS</b> = National Hydrological Service; <b>Combined service</b> = National Meteorological and Hydrological Service)					
Hazards that cause disasters	Are warnings issued for this hazard	Who issues these warnings	If warnings are issued for this hazard, is the issuing service mandated by the government as the sole issuer?	For the warning services that your country provides, please indicate if further improvements are necessary	Does the warning statement include information on the potential risks (impacts) of the hazard?
(i.e., nuclear, biological, chemical, etc.)		<input type="checkbox"/> NHS <input type="checkbox"/> Combined service			
Waterborne hazardous substances (i.e., nuclear, biological, chemical, oil spills, etc.)	Yes <input type="checkbox"/> No <input type="checkbox"/>	<input type="checkbox"/> NMS <input type="checkbox"/> NHS <input type="checkbox"/> Combined service	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
Desert locust swarm	Yes <input type="checkbox"/> No <input type="checkbox"/>	<input type="checkbox"/> NMS <input type="checkbox"/> NHS <input type="checkbox"/> Combined service	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
Hydrometeorological hazards to aviation (i.e., turbulence, icing)	Yes <input type="checkbox"/> No <input type="checkbox"/>	<input type="checkbox"/> NMS <input type="checkbox"/> NHS <input type="checkbox"/> Combined service	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
Avalanche	Yes <input type="checkbox"/> No <input type="checkbox"/>	<input type="checkbox"/> NMS <input type="checkbox"/> NHS <input type="checkbox"/> Combined service	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
Forest or wild land fire	Yes <input type="checkbox"/> No <input type="checkbox"/>	<input type="checkbox"/> NMS <input type="checkbox"/> NHS <input type="checkbox"/> Combined service	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
Smoke, Dust or Haze	Yes <input type="checkbox"/> No <input type="checkbox"/>	<input type="checkbox"/> NMS <input type="checkbox"/> NHS <input type="checkbox"/> Combined service	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
Earthquakes	Yes <input type="checkbox"/> No <input type="checkbox"/>	<input type="checkbox"/> NMS <input type="checkbox"/> NHS <input type="checkbox"/> Combined service	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
Tsunami	Yes <input type="checkbox"/> No <input type="checkbox"/>	<input type="checkbox"/> NMS <input type="checkbox"/> NHS <input type="checkbox"/> Combined service	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>

11. Please specify for what hazards your National Meteorological and Hydrological Service issues warnings, identify who is the issuer, and if the issuing agency is the sole issuer (please note: <b>NMS</b> = National Meteorological Service; <b>NHS</b> = National Hydrological Service; <b>Combined service</b> = National Meteorological and Hydrological Service)					
Hazards that cause disasters	Are warnings issued for this hazard	Who issues these warnings	If warnings are issued for this hazard, is the issuing service mandated by the government as the sole issuer?	For the warning services that your country provides, please indicate if further improvements are necessary	Does the warning statement include information on the potential risks (impacts) of the hazard?
Volcanic events	Yes <input type="checkbox"/> No <input type="checkbox"/>	<input type="checkbox"/> NMS <input type="checkbox"/> NHS <input type="checkbox"/> Combined service	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>



12. If you include information on the potential risks (impacts) of the hazard in the warning statements do you collaborate with other agencies (e.g. health, agriculture, etc.) to develop the risk information?	Yes <input type="checkbox"/> No <input type="checkbox"/>
13. Are there any other entities, public or commercial, within your country that provide competing warning services to those listed in question 11 (above)?	Yes <input type="checkbox"/> No <input type="checkbox"/>
a. If "Yes", please specify:	
14. Does your National Meteorological and Hydrological Service have a contingency plan that ensures continuity of warning products and services in case of organizational emergencies (e.g. power failure, communication disruption, etc.)?	Yes <input type="checkbox"/> No <input type="checkbox"/>
a. If "Yes", does this contingency plan involve agreements and protocols with other National Meteorological and Hydrological Services in your region to support each other for delivery of warning products and services in case of catastrophic failure?	Yes <input type="checkbox"/> No <input type="checkbox"/>
15. Does the National Meteorological and Hydrological Service conduct any of the following <b>internal capacity building and technical training</b> activities related to disaster risk reduction in your country:	
a. Evaluation of the suitability of communications, workstations, and software to support disaster risk reduction?	Yes <input type="checkbox"/> No <input type="checkbox"/>
i. Implementation of upgrades needed for its communications, workstations, and software to support disaster risk reduction?	Yes <input type="checkbox"/> No <input type="checkbox"/>
b. Providing ongoing technical training on the forecasting of hazards including up-to-date training of new forecasting technologies and products for its staff?	Yes <input type="checkbox"/> No <input type="checkbox"/>
c. Conducting training for its staff on your country's disaster risk reduction processes and related topics?	Yes <input type="checkbox"/> No <input type="checkbox"/>
d. Inviting experts from partner organizations involved in disaster risk reduction as lecturers and/ or trainers?	Yes <input type="checkbox"/> No <input type="checkbox"/>
e. Utilize Fellowships and other training offered through the WMO to enhance the technical capacities of its staff?	Yes <input type="checkbox"/> No <input type="checkbox"/>
16. Does the National Meteorological and Hydrological Service seek external advice for enhancing its capacities related to the support of disaster risk reduction? If "Yes", for which capacities?	Yes <input type="checkbox"/> No <input type="checkbox"/>
a. Monitoring and forecasting	Yes <input type="checkbox"/> No <input type="checkbox"/>
b. Watches and warnings	Yes <input type="checkbox"/> No <input type="checkbox"/>
c. Overall products and services	Yes <input type="checkbox"/> No <input type="checkbox"/>
17. Does the National Meteorological and Hydrological Service conduct internal reviews and seek staff inputs to enhance its capacity building and technical training activities for its staff?	Yes <input type="checkbox"/> No <input type="checkbox"/>
18. Does your country have a "readiness level" system that would result in mandatory actions by National, State or Regional, and/ or local government authorities?	Yes <input type="checkbox"/> No <input type="checkbox"/>
19. Does your National Meteorological and Hydrological Service work in collaboration with other agencies (e.g. agriculture, aviation and/ or maritime meteorological authorities, etc.) in your country, with respect to hydro-meteorological hazard warnings?	Yes <input type="checkbox"/> No <input type="checkbox"/>
a. If "Yes", do you discuss the hydro-meteorological hazard's current and projected characteristics, and possible impacts prior to the issuance of a warning?	Yes <input type="checkbox"/> No <input type="checkbox"/>
20. Does the National Meteorological and Hydrological Service provide specialized alerts, warnings, etc. for decisions and actions in support of <b>emergency response</b> in the following civil sectors?	
a. Health	Yes <input type="checkbox"/> No <input type="checkbox"/>
b. Sanitation	Yes <input type="checkbox"/> No <input type="checkbox"/>
c. Housing	Yes <input type="checkbox"/> No <input type="checkbox"/>
d. Food security	Yes <input type="checkbox"/> No <input type="checkbox"/>
e. Fresh water	Yes <input type="checkbox"/> No <input type="checkbox"/>
f. Transportation	Yes <input type="checkbox"/> No <input type="checkbox"/>
g. Land-use planning	Yes <input type="checkbox"/> No <input type="checkbox"/>
h. Safety of Life at Sea	Yes <input type="checkbox"/> No <input type="checkbox"/>
i. Other (please specify):	
21. Does your National Meteorological and Hydrological Service temporarily assign staff to disaster risk management structures in your country in anticipation of a disaster?	Yes <input type="checkbox"/> No <input type="checkbox"/>

22. Dissemination of National Meteorological and Hydrological products and services related to disaster risk reduction activities:				
	Hydrometeorological hazard products			
	Historical hazard data archives	Real-time hazard monitoring	Forecasts and outlooks	Early Warnings
a. To whom does the National Meteorological and Hydrological Service provide information:				
i. Head of the Government?	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
ii. Ministry that oversees the National Meteorological and Hydrological Service?	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
iii. Other Ministries?	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
iv. Head of the National Committee for Disaster Risk Reduction	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
v. Emergency response services? (i.e. hospitals, police, fire department)	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
vi. General public?	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
vii. News media?	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
viii. Businesses?	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
ix. WMO Regional Specialized Meteorological Centre(s)?	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
x. The United Nations Country Coordinator (UNDP)?	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
xi. National Red Cross and Red Crescent Societies	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
xii. Other organizations with interest in disaster prevention and mitigation (i.e., development banks, NGOs, academia)?	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
b. Internet based data (e.g. FTP downloads)	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
i. Sent to the recipient on recorded media (i.e. CD, video tape, or DVD)	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
ii. Hard copy mailings	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
iii. Posted on a web page	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
iv. By facsimile	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
v. Mobile phone text messaging (e.g. SMS, MMS)	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
vi. Use of sirens, signal balls, flags, etc?	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
vii. Through meetings or briefings (in person, conference call or teleconference call)	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
viii. Other (please specify):	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>

23. Does your National Meteorological and Hydrological Service have a public weather services programme?	Yes <input type="checkbox"/> No <input type="checkbox"/>
24. Do you have a mechanism for interaction with your country's media during periods of high disaster potential?	Yes <input type="checkbox"/> No <input type="checkbox"/>
a. If "Yes", please specify the mechanism:	
25. Does the National Meteorological and Hydrological Service provide any of the following Education and Public Outreach programmes targeted at increasing awareness of hydro-meteorological hazards?	
a. Education and training targeted at disaster risk reduction managers and authorities and operational emergency response managers on hazards, watches, warnings, etc.	Yes <input type="checkbox"/> No <input type="checkbox"/>
b. Educational modules and training programs targeted at the general public	Yes <input type="checkbox"/> No <input type="checkbox"/>
c. Training of the news media	Yes <input type="checkbox"/> No <input type="checkbox"/>
d. Training targeted at the trainers (i.e., disaster risk authorities, emergency response staff, news media, public, etc.)	Yes <input type="checkbox"/> No <input type="checkbox"/>
e. Collaboration with schools and universities to develop educational programmes and curriculum for hydrometeorological hazards	Yes <input type="checkbox"/> No <input type="checkbox"/>
26. Does your country use standardized hazard response symbols?	Yes <input type="checkbox"/> No <input type="checkbox"/>
a. If "Yes", is there a programme to educate the public on these symbols?	Yes <input type="checkbox"/> No <input type="checkbox"/>
27. Are there joint training activities for the National Meteorological and Hydrological Service staff and emergency response agencies?	Yes <input type="checkbox"/> No <input type="checkbox"/>
28. Does your National Meteorological and Hydrological Service conduct or participate in drills and exercises to ensure disaster preparedness?	Yes <input type="checkbox"/> No <input type="checkbox"/>
29. Which of the following methods and instructional materials are used by the National Meteorological and Hydrological Service to provide education and public outreach programmes?	
a. Pamphlets, brochures, posters	Yes <input type="checkbox"/> No <input type="checkbox"/>
b. Recorded materials (CD's, DVD's, etc.)	Yes <input type="checkbox"/> No <input type="checkbox"/>
c. Web-based training	Yes <input type="checkbox"/> No <input type="checkbox"/>
d. Workbooks to be used in the office or at home	Yes <input type="checkbox"/> No <input type="checkbox"/>
e. E – training modules (e.g. software or network based)	Yes <input type="checkbox"/> No <input type="checkbox"/>
f. Workshops	Yes <input type="checkbox"/> No <input type="checkbox"/>
g. Other (please specify):	
30. Does your National Meteorological and Hydrological Service have a quality control mechanism to enhance your warning capabilities and content? If "Yes", Does this mechanism provide for:	Yes <input type="checkbox"/> No <input type="checkbox"/>
a. Regular interaction with your stakeholders (disaster risk authorities) to enhance your warning capabilities and content?	Yes <input type="checkbox"/> No <input type="checkbox"/>
b. Training for the stakeholders to understand the hazards, warnings and their implications?	Yes <input type="checkbox"/> No <input type="checkbox"/>
c. Training for the general public to understand the hazards, warnings and their implications?	Yes <input type="checkbox"/> No <input type="checkbox"/>
d. Feedback from stakeholders and the general public after an event has occurred?	Yes <input type="checkbox"/> No <input type="checkbox"/>
31. Does the National Meteorological and Hydrological Service seek external reviews and inputs regarding the adequacy of the education and public outreach services it provides?	Yes <input type="checkbox"/> No <input type="checkbox"/>
32. Does the National Meteorological and Hydrological Service seek external evaluations and inputs from stakeholders, regarding the adequacy, relevance, method of access, and availability of its disaster risk reduction products it provides to them?	Yes <input type="checkbox"/> No <input type="checkbox"/>

## Section IV: Identify and prioritize areas that are reducing the potential contribution of your agency to disaster risk reduction in your country.

Gaps for disaster risk reduction in your country	Please answer yes or no.
1. Does your National Meteorological and Hydrological service need higher visibility and recognition within the Government as one of the main contributing agencies to disaster risk reduction in your country?	Yes <input type="checkbox"/> No <input type="checkbox"/>
2. In your opinion, if the understanding at the ministerial level of the socio-economic benefits of hydrometeorological products and services were enhanced, would the visibility of the National Meteorological and Hydrological Services at the National level be improved?	Yes <input type="checkbox"/> No <input type="checkbox"/>
3. Does the national disaster risk reduction organizational structures (e.g. involvement of different ministries, decentralized disaster risk management, etc.) limit potential contributions of the National Meteorological and Hydrological Services to disaster risk reduction in your country?	Yes <input type="checkbox"/> No <input type="checkbox"/>
4. Does the lack of understanding by governmental authorities of the value that your National Meteorological and Hydrological Service provides limit your contribution in disaster risk reduction?	Yes <input type="checkbox"/> No <input type="checkbox"/>
5. Does a lack of linkages between the National Meteorological and Hydrological Service with other organizations involved in disaster risk reduction (e.g. emergency planners, emergency response) limit the contributions of your agency to disaster risk reduction in your country?	Yes <input type="checkbox"/> No <input type="checkbox"/>
6. Does a lack of clear legislation or policies regarding the role of the National Meteorological and Hydrological Service (as the sole issuer of warnings, etc) limit the effectiveness of your contribution in disaster risk reduction in your country?	Yes <input type="checkbox"/> No <input type="checkbox"/>
7. If there is a separate National Meteorological Service and Hydrological Service in your country, please answer questions a – c.	
a. Is there need for legislation or partnership agreements to better define the roles each plays in disaster risk reduction?	Yes <input type="checkbox"/> No <input type="checkbox"/>
b. Would better coordination between the two agencies result in enhanced issuances of forecasts and warnings?	Yes <input type="checkbox"/> No <input type="checkbox"/>
c. Would better technical coordination produce enhanced joint products and services?	Yes <input type="checkbox"/> No <input type="checkbox"/>
8. Is the National Meteorological and Hydrological Service limited by resources and infrastructure to deliver critical products and services for disaster risk reduction? If "Yes", in which of the following areas?	Yes <input type="checkbox"/> No <input type="checkbox"/>
a. Professional staff	Yes <input type="checkbox"/> No <input type="checkbox"/>
b. Computers	Yes <input type="checkbox"/> No <input type="checkbox"/>
c. Network equipment	Yes <input type="checkbox"/> No <input type="checkbox"/>
d. Internet access	Yes <input type="checkbox"/> No <input type="checkbox"/>
e. Communications facilities	Yes <input type="checkbox"/> No <input type="checkbox"/>
f. Financial resources	Yes <input type="checkbox"/> No <input type="checkbox"/>
g. Application software	Yes <input type="checkbox"/> No <input type="checkbox"/>
h. Other, please specify:	
9. Does the lack of appropriate observing networks for hydro-meteorological conditions in your country limit your ability to contribute to disaster risk reduction?	Yes <input type="checkbox"/> No <input type="checkbox"/>

10. Does the lack of resources for the maintenance of the observing networks in your country limit your ability to contribute to disaster risk reduction?	Yes <input type="checkbox"/> No <input type="checkbox"/>
11. What are the major challenges in maintaining your observing networks:	
a. Resources (e.g. replacement parts, personnel, etc.)	Yes <input type="checkbox"/> No <input type="checkbox"/>
b. Hazard related damage	Yes <input type="checkbox"/> No <input type="checkbox"/>
c. Financial resources	Yes <input type="checkbox"/> No <input type="checkbox"/>
d. Other, please specify:	
12. Please indicate if any of the following factors limit your ability for real-time monitoring of hazards:	
a. Professional staff with appropriate training	Yes <input type="checkbox"/> No <input type="checkbox"/>
b. Availability of a dedicated 24 hours a day, every day of the year observing service	Yes <input type="checkbox"/> No <input type="checkbox"/>
c. Financial resources	Yes <input type="checkbox"/> No <input type="checkbox"/>
d. Other, please specify:	
13. Please indicate if any of the following factors limit your ability for providing hazard data products to various stakeholders involved with disaster risk reduction:	
a. Professional staff with appropriate training	Yes <input type="checkbox"/> No <input type="checkbox"/>
b. Ability to archive and update	Yes <input type="checkbox"/> No <input type="checkbox"/>
c. Data rescue	Yes <input type="checkbox"/> No <input type="checkbox"/>
d. Quality assurance	Yes <input type="checkbox"/> No <input type="checkbox"/>
e. Customization of data for stakeholders	Yes <input type="checkbox"/> No <input type="checkbox"/>
f. Others, please specify:	
14. Would enhanced <u>value-added services</u> of the National Meteorological and Hydrological Service in support of hydrometeorological risk assessment in your country strengthen your contributions to disaster risk reduction activities? If "Yes", please specify which of the following value added services:	Yes <input type="checkbox"/> No <input type="checkbox"/>
a. Analyses of potential impacts of hazards	Yes <input type="checkbox"/> No <input type="checkbox"/>
b. Hazard mapping and high-risk zone analysis	Yes <input type="checkbox"/> No <input type="checkbox"/>
c. Technical advice	Yes <input type="checkbox"/> No <input type="checkbox"/>
d. Others, please specify:	

15. Would upgrading and improving your National Meteorological and Hydrological Services <u>operational forecasting and warning services</u> enhance disaster risk reduction capacities in your country? If "Yes", please specify in what areas:	Yes <input type="checkbox"/> No <input type="checkbox"/>
a. Professional staff	Yes <input type="checkbox"/> No <input type="checkbox"/>
b. Operational infrastructure	Yes <input type="checkbox"/> No <input type="checkbox"/>
c. Access to tools and latest forecasting technologies	Yes <input type="checkbox"/> No <input type="checkbox"/>
d. Technical training of the professional staff	Yes <input type="checkbox"/> No <input type="checkbox"/>
e. Others, please specify:	
16. Does the lack of forecaster training at the National Meteorological and Hydrological Service reduce the effectiveness of your warning services?	Yes <input type="checkbox"/> No <input type="checkbox"/>
17. Does the lack of joint training between staff of the National Meteorological and Hydrological Service and disaster risk managers limit your agency's disaster risk reduction efforts?	Yes <input type="checkbox"/> No <input type="checkbox"/>
18. Does the lack of joint training between staff of the National Meteorological and Hydrological Service and media limit your agency's disaster risk reduction efforts?	Yes <input type="checkbox"/> No <input type="checkbox"/>
19. Does the lack of joint training between staff of the National Meteorological and Hydrological Service and emergency authorities and managers limit your agency's disaster risk reduction efforts?	Yes <input type="checkbox"/> No <input type="checkbox"/>
20. Would educational modules that National Meteorological and Hydrological Service could target at Media, Public, disaster risk reduction authorities enhance your effectiveness in disaster risk reduction?	Yes <input type="checkbox"/> No <input type="checkbox"/>
21. Does the lack of public understanding of the effects of hazards limit public response to your warning services?	Yes <input type="checkbox"/> No <input type="checkbox"/>
22. Does the lack of public understanding of watches and warnings limit the public response to them?	Yes <input type="checkbox"/> No <input type="checkbox"/>
23. Would a "readiness level" system to ensure appropriate response by authorities to the levels of information issued by the Meteorological and Hydrological Service enhance your disaster risk reduction activities?	Yes <input type="checkbox"/> No <input type="checkbox"/>
24. To improve your country's disaster risk reduction activities, does your National Meteorological and Hydrological Service require better collaboration and coordination with the WMO Regional Specialized Meteorological Centres? If "Yes", please specify which activities:	Yes <input type="checkbox"/> No <input type="checkbox"/>
a. Watch and warning coordination	Yes <input type="checkbox"/> No <input type="checkbox"/>
b. Hydrometeorological data exchange	Yes <input type="checkbox"/> No <input type="checkbox"/>
c. Exchange of hydrometeorological information (e.g. analysis, forecasts, bulletins, etc.)	Yes <input type="checkbox"/> No <input type="checkbox"/>
d. Others, please specify:	

<p>25. To improve your country's disaster risk reduction activities, does your National Meteorological and Hydrological Service require better coordination with <u>neighbouring or adjacent countries</u>?</p> <p>If "Yes", please specify which activities:</p>	<p>Yes <input type="checkbox"/> No <input type="checkbox"/></p>
<p>a. Warning and watch coordination</p>	<p>Yes <input type="checkbox"/> No <input type="checkbox"/></p>
<p>b. Hydrometeorological data exchange</p>	<p>Yes <input type="checkbox"/> No <input type="checkbox"/></p>
<p>c. Cross border training activities targeted at common hydro-meteorological hazards</p>	<p>Yes <input type="checkbox"/> No <input type="checkbox"/></p>
<p>d. Support by neighbouring or adjacent countries in case of disruption of your services due to the impact of a disaster?</p>	<p>Yes <input type="checkbox"/> No <input type="checkbox"/></p>
<p>e. Others, please specify:</p>	
<p>26. In which of the following areas would <u>WMOs global and regional coordinated efforts</u> could enhance the National Meteorological and Hydrological Services' overall contributions in disaster risk reduction activities?</p>	<p>Please rank the following ten areas in order of importance according to the priorities of your organization (1 being the most important and 10 being the lowest).</p>
<p>i. Advocacy for enhanced visibility of National Meteorological and Hydrological Service' in the area of disaster risk reduction</p>	<p>Rank:</p>
<p>ii. Assist members in the development of the national disaster risk reduction plans</p>	<p>Rank:</p>
<p>iii. Cost benefit analysis of hydro-meteorological services in disaster risk reduction</p>	<p>Rank:</p>
<p>iv. Provision of technical advice and specifications (e.g. to enhance observing networks, operational infrastructures, relevant products and services for disaster risk reduction applications)</p>	<p>Rank:</p>
<p>v. Technology transfer, capacity building, technical guidelines and technical trainings (e.g. forecasting tools and methodologies, hazard mapping, and other inputs to risk assessment tools, etc.)</p>	<p>Rank:</p>
<p>vi. Strengthening strategic partnerships with stakeholders (e.g. disaster risk managers, media, etc.)</p>	<p>Rank:</p>
<p>vii. Strengthening strategic partnerships with other technical organizations and agencies (e.g. meteorology, hydrology, ocean services, etc.)</p>	<p>Rank:</p>
<p>viii. Education, training and public outreach programmes in disaster risk reduction (e.g. targeted at National Meteorological and Hydrological Service and their stakeholders)</p>	<p>Rank:</p>
<p>ix. Establishment of regional emergency protocols for the National Meteorological and Hydrological Services in support of each other in case of disruption of services due to the impact of a disaster</p>	<p>Rank:</p>
<p>x. Resource mobilization</p>	<p>Rank:</p>





## Annex 2 – List of WMO Members who Responded to the Survey

### WMO Member States (Global)<sup>1</sup> (139/187)

Albania	Cook Islands	Hong Kong, China	Malta	Poland	Tajikistan
Algeria	Costa Rica	Hungary	Mexico	Portugal	Thailand
Argentina	Croatia	Iceland	Micronesia, Federated States of	Qatar	The former Yugoslav Republic of Macedonia
Armenia	Cyprus	Iran, Islamic Republic of	Monaco	Republic of Korea	Republic of Moldova
Australia	Czech Republic	Ireland	Mongolia	Republic of Yemen	Tonga
Austria	Denmark	Israel	Morocco	Romania	Trinidad and Tobago
Bahamas	Dominican Republic	Italy	Mozambique	Russian Federation	Tunisia
Bahrain	Ecuador	Ivory Coast	Myanmar	Rwanda	Turkey
Bangladesh	Egypt	Jamaica	Nepal	Saint Lucia	Uganda
Barbados	El Salvador	Japan	Netherlands	Samoa	Ukraine
Belarus	Estonia	Jordan	Netherlands Antilles and Aruba	Saudi Arabia	United Arab Emirates
Belgium	Ethiopia	Kazakhstan	New Caledonia	Senegal	United Kingdom of Great Britain and Northern Ireland
Belize	Fiji	Kenya	New Zealand	Serbia and Montenegro	United Republic of Tanzania
Bolivia	Finland	Kiribati	Nicaragua	Seychelles	United States of America
Bosnia and Herzegovina	France	Kyrgyz Republic	Niger	Singapore	Uruguay
Botswana	French Polynesia	Lao PDR	Nigeria	Slovakia	Uzbekistan
Brazil	Gabon	Latvia	Norway	Slovenia	Vanuatu
Burkina Faso	Georgia	Libyan Arab Jamahiriya	Oman	South Africa	Venezuela
Cambodia	Germany	Lithuania	Pakistan	Spain	
Canada	Ghana	Luxembourg	Panama	Sri Lanka	
Chile	Greece	Madagascar	Paraguay	Sudan	
China	Guatemala	Malawi	Peru	Sweden	
Colombia	Guinea Bissau	Malaysia	Philippines	Switzerland	
Comoros	Haiti	Maldives			
Congo	Honduras	Mali			

NOTE: Numbers in parenthesis (x/y):

- x refers to the number of responses received
- y refers to the number of countries in the mentioned category

<sup>1</sup> Source: WMO Member Countries

**Regional Association I (Africa)<sup>2</sup> (28/52)**

Algeria	Egypt	Ivory Coast	Mali	Rwanda	Tunisia
Botswana	Ethiopia	Kenya	Morocco	Senegal	Uganda
Burkina Faso	Gabon	Libyan Arab Jamahiriya	Mozambique	Seychelles	United Republic of Tanzania
Comoros	Ghana	Madagascar	Niger	South Africa	
Congo	Guinea Bissau	Malawi	Nigeria	Sudan	

**Regional Association II (Asia)<sup>2</sup> (25/34)**

Bahrain	Iran, Islamic Republic of	Lao PDR	Oman	Saudi Arabia	United Arab Emirates
Bangladesh	Japan	Maldives	Pakistan	Sri Lanka	Uzbekistan
Cambodia	Kazakhstan	Mongolia	Qatar	Tajikistan	
China	Kyrgyz Republic	Myanmar	Republic of Korea	Thailand	
Hong Kong, China		Nepal	Republic of Yemen		

**Regional Association III (South America)<sup>2</sup> (10/12)**

Argentina	Brazil	Colombia	Paraguay	Uruguay
Bolivia	Chile	Ecuador	Peru	Venezuela

**Regional Association IV (North and Central America and the Caribbean)<sup>2</sup> (18/22)**

Bahamas	Costa Rica	Guatemala	Mexico	Panama	United States of America
Barbados	Dominican Republic	Haiti	Netherlands Antilles and Aruba	Saint Lucia	
Belize	El Salvador	Honduras	Nicaragua	Trinidad and Tobago	
Canada		Jamaica			

**Regional Association V (South-West Pacific)<sup>2</sup> (14/19)**

Australia	French Polynesia	Micronesia, Federated States of	New Zealand	Singapore
Cook Islands	Kiribati	New Caledonia	Philippines	Tonga
Fiji	Malaysia		Samoa	Vanuatu

**Regional Association VI (Europe)<sup>2</sup> (44/48)**

Albania	Czech Republic	Iceland	Monaco	Russian Federation	The former Yugoslav Republic of Macedonia	
Armenia	Denmark	Ireland	Netherlands	Serbia and Montenegro		
Austria	Estonia	Israel	Norway	Slovakia		Turkey
Belarus	Finland	Italy	Poland	Slovenia		Ukraine
Belgium	France	Jordan	Portugal	Spain		United Kingdom of Great Britain and Northern Ireland
Bosnia and Herzegovina	Georgia	Latvia	Republic of Moldova	Sweden		
Croatia	Germany	Lithuania	Romania	Switzerland		
Cyprus	Greece	Luxembourg				
	Hungary	Malta				

<sup>2</sup> WMO Regional Associations Membership, Basic Documents, WMO 15, 2003, pages 100-105

**Developing Countries (excluding Least Developed Countries)<sup>3</sup> (60/87)**

Algeria	Colombia	Guatemala	Mexico	Peru	Tonga
Argentina	Congo	Honduras	Micronesia, Federated States of	Philippines	Trinidad and Tobago
Bahamas	Costa Rica	Hong Kong, China	Mongolia	Qatar	Tunisia
Bahrain	Cyprus	Iran, Islamic Republic of	Morocco	Republic of Korea	Turkey
Barbados	Dominican Republic	Ivory Coast	Nicaragua	Saint Lucia	United Arab Emirates
Belize	Ecuador	Jamaica	Nigeria	Saudi Arabia	Uruguay
Bolivia	Egypt	Jordan	Oman	Seychelles	Venezuela
Botswana	El Salvador	Kenya	Pakistan	Singapore	
Brazil	Fiji	Libyan Arab Jamahiriya	Panama	South Africa	
Chile	Gabon	Malaysia	Paraguay	Sri Lanka	
China	Ghana			Thailand	

**Small Island Developing States (SIDS)<sup>3</sup> (19/29)**

Bahamas	Dominican Republic	Haiti	Micronesia, Federated States of	Seychelles	Trinidad and Tobago
Barbados	Fiji	Jamaica	Saint Lucia	Singapore	Vanuatu
Belize	Guinea Bissau	Kiribati	Samoa	Tonga	
Comoros		Maldives			

**Least Developed Countries<sup>3</sup> (25/50)**

Bangladesh	Guinea Bissau	Malawi	Nepal	Senegal	Vanuatu
Burkina Faso	Haiti	Maldives	Niger	Sudan	
Cambodia	Kiribati	Mali	Republic of Yemen	Uganda	
Comoros	Lao PDR	Mozambique	Rwanda	United Republic of Tanzania	
Ethiopia	Madagascar	Myanmar	Samoa		

**Developed Countries<sup>4</sup> (25/25)**

Australia	Finland	Ireland	Monaco	Spain	United States of America
Austria	France	Israel	Netherlands	Sweden	
Belgium	Germany	Italy	New Zealand	Switzerland	
Canada	Greece	Japan	Norway	United Kingdom of Great Britain and Northern Ireland	
Denmark	Iceland	Luxembourg	Portugal		

<sup>3</sup> UN classification based on UN-OHRLLS 2006

<sup>4</sup> Countries described as high-income and advanced economies by the World Bank and the International Monetary Fund

### Sub-group in Regional Association I (Africa): Least Developed Countries (14/33)

Burkina Faso	Guinea Bissau	Mali	Rwanda	Uganda
Comoros	Madagascar	Mozambique	Senegal	United Republic of Tanzania
Ethiopia	Malawi	Niger	Sudan	

### Sub-groups in Regional Association II (Asia)

<b>Typhoon Committee Members (7/10)</b>	Republic of Korea	Oman	Kyrgyz Republic	Oman
	Thailand	Pakistan	Tajikistan	Qatar
	<b>Cyclone Panel Members (7/8)</b>	Sri Lanka	Uzbekistan	Republic of Yemen
Cambodia	Bangladesh	Thailand	<b>Arid Asian Countries (7/8)</b>	Saudi Arabia
China	Maldives	<b>Central Asia (4/5)</b>	Bahrain	United Arab Emirates
Hong Kong, China	Myanmar	Kazakhstan	Iran, Islamic Republic of	
Japan				
Lao PDR				

### Sub-groups in Regional Association III (South America)

<b>Andean (5/5)</b>	Colombia	<b>Non-Andean (5/7)</b>	Brazil
	Ecuador		Paraguay
	Peru		Uruguay
Bolivia		Argentina	Venezuela
Chile			

### Regional Association IV (North and Central America and the Caribbean)

<b>North America (3/3)</b>	United States of America	Dominican Republic	Netherlands Antilles and Aruba	<b>Central America (6/6)</b>	Guatemala	
	Canada	Haiti	Saint Lucia		Belize	Honduras
	Mexico	Jamaica	Trinidad and Tobago		Costa Rica	Nicaragua
	<b>Caribbean (8/12)</b>			El Salvador	Panama	
	Bahamas					
	Barbados					

### Regional Association V (South-West Pacific)

<b>SIDS (7/9)</b>	Micronesia, Federated States of	Singapore	<b>Non-SIDS (7/10)</b>	French Polynesia	Philippines	
	Fiji	Tonga		Australia		Malaysia
	Kiribati	Vanuatu		Cook Islands		New Caledonia
	Samoa			New Zealand		

### Regional Association VI (Europe)

<b>Northwest (14/14)</b>	Ireland	<b>East (10/11)</b>	Slovakia	<b>South (20/23)</b>	Hungary	Serbia and Montenegro	
	Luxembourg		Ukraine		Israel		
	Netherlands		Belarus		Italy		Slovenia
	Austria		Czech Republic		Jordan		Spain
	Belgium		Estonia		Malta		The former Yugoslav Republic of Macedonia
	Denmark		Georgia		Monaco		Turkey
	Finland		Latvia		Portugal		
	France		Lithuania		Republic of Moldova		
	Germany		Poland		Romania		
	Iceland		Russian Federation				

*The sub-regional groups were identified by the chairpersons of the WMO Regional Associations Working Groups on Disaster Prevention and Mitigation*

### Annex 3 – Maintenance of Hazard and Impacts Databases

Hazard	Categories	Global 139 /187	Developing Countries 85 / 137	LDC 25 / 50	SIDS 19 / 29	Developed Countries 25 / 25	RA I (Africa) 28 / 52	RA II (Asia) 25 / 34	RA III (South America) 10 / 12	RA IV (North America, Central America and the Caribbean) 18 / 22	RA V (South- West Pacific) 14 / 19	RA VI (Europe) 44 / 48
Airborne hazardous substances	<b>Status of Archiving data by NMHSs:</b>	<b>32</b>	<b>8</b>	<b>1</b>	<b>1</b>	<b>9</b>	<b>3</b>	<b>7</b>	<b>1</b>	<b>3</b>	<b>1</b>	<b>17</b>
	Includes Standardized HydroMet Info	25	6	1	1	6	1	7	1	2	1	13
	Includes Loss Life Info	11	2	1	1	5	1	1	1	2	1	5
	Includes Number Affected Info	8	2	1	1	3	1	1	1	1	1	3
	Includes Cost Info	8	2	1	1	3	1	2	0	2	1	2
Avalanche	<b>Status of Archiving data by NMHSs:</b>	<b>28</b>	<b>7</b>	<b>1</b>	<b>1</b>	<b>8</b>	<b>0</b>	<b>5</b>	<b>3</b>	<b>4</b>	<b>2</b>	<b>14</b>
	Includes Standardized HydroMet Info	23	7	1	1	6	0	5	4	4	1	9
	Includes Loss Life Info	14	4	1	1	6	0	3	2	3	1	5
	Includes Number Affected Info	11	5	1	1	4	0	2	2	3	1	3
	Includes Cost Info	13	3	2	1	6	0	3	0	4	1	5
Aviation hazards	<b>Status of Archiving data by NMHSs:</b>	<b>51</b>	<b>20</b>	<b>9</b>	<b>5</b>	<b>9</b>	<b>11</b>	<b>13</b>	<b>2</b>	<b>3</b>	<b>3</b>	<b>19</b>
	Includes Standardized HydroMet Info	41	16	7	3	8	9	10	3	2	3	14
	Includes Loss Life Info	11	3	4	1	2	3	3	1	2	1	1
	Includes Number Affected Info	14	6	4	1	2	3	5	1	2	1	2
	Includes Cost Info	13	6	2	1	3	1	5	1	3	1	2

Hazard	Categories	Global 139 / 187	Developing Countries 85 / 137	LDC 25 / 50	SIDS 19 / 29	Developed Countries 25 / 25	RA I (Africa) 28 / 52	RA II (Asia) 25 / 34	RA III (South America) 10 / 12	RA IV (North America, Central America and the Caribbean) 18 / 22	RA V (South- West Pacific) 14 / 19	RA VI (Europe) 44 / 48
Coastal flooding	<b>Status of Archiving data by NMHSs:</b>	<b>48</b>	<b>23</b>	<b>7</b>	<b>10</b>	<b>7</b>	<b>4</b>	<b>11</b>	<b>3</b>	<b>10</b>	<b>7</b>	<b>13</b>
	Includes Standardized HydroMet Info	36	15	5	6	5	2	10	2	6	6	10
	Includes Loss Life Info	18	7	3	2	5	1	5	1	4	4	3
	Includes Number Affected Info	16	7	4	3	3	1	5	1	3	5	1
	Includes Cost Info	17	8	2	2	4	1	5	0	4	5	2
Cold wave	<b>Status of Archiving data by NMHSs:</b>	<b>69</b>	<b>29</b>	<b>5</b>	<b>0</b>	<b>12</b>	<b>11</b>	<b>14</b>	<b>6</b>	<b>6</b>	<b>1</b>	<b>31</b>
	Includes Standardized HydroMet Info	58	24	4	0	9	9	13	6	5	1	24
	Includes Loss Life Info	17	8	2	0	4	3	6	1	3	0	4
	Includes Number Affected Info	15	9	2	0	2	3	6	2	2	0	2
	Includes Cost Info	15	7	2	0	3	3	6	0	3	0	3
Dense fog	<b>Status of Archiving data by NMHSs:</b>	<b>70</b>	<b>32</b>	<b>4</b>	<b>2</b>	<b>12</b>	<b>15</b>	<b>15</b>	<b>6</b>	<b>1</b>	<b>2</b>	<b>31</b>
	Includes Standardized HydroMet Info	58	27	3	1	10	12	12	6	1	2	25
	Includes Loss Life Info	13	6	0	0	4	2	4	1	1	0	5
	Includes Number Affected Info	11	7	0	0	2	3	4	1	0	0	3
	Includes Cost Info	10	6	0	0	2	3	4	0	1	0	2
Desert locust swarm	<b>Status of Archiving data by NMHSs:</b>	<b>13</b>	<b>7</b>	<b>5</b>	<b>1</b>	<b>1</b>	<b>10</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>
	Includes Standardized HydroMet Info	11	5	5	1	1	7	1	1	1	0	1
	Includes Loss Life Info	4	1	2	1	1	3	0	0	0	0	1
	Includes Number Affected Info	7	2	4	1	1	5	1	0	0	0	1
	Includes Cost Info	5	2	2	1	1	3	1	0	0	0	1
Drought	<b>Status of Archiving data by NMHSs:</b>	<b>97</b>	<b>41</b>	<b>18</b>	<b>12</b>	<b>13</b>	<b>21</b>	<b>17</b>	<b>5</b>	<b>12</b>	<b>11</b>	<b>31</b>
	Includes Standardized HydroMet Info	88	37	16	11	11	20	15	6	11	10	26
	Includes Loss Life Info	27	10	6	4	7	4	6	0	6	4	7
	Includes Number Affected Info	28	13	7	5	5	6	6	2	5	4	5
	Includes Cost Info	29	15	5	5	5	4	8	2	6	4	5

Hazard	Categories	Global 139 /187	Developing Countries 85 / 137	LDC 25 / 50	SIDS 19 / 29	Developed Countries 25 / 25	RA I (Africa) 28 / 52	RA II (Asia) 25 / 34	RA III (South America) 10 / 12	RA IV (North America, Central America and the Caribbean) 18 / 22	RA V (South- West Pacific) 14 / 19	RA VI (Europe) 44 / 48
Earthquakes	<b>Status of Archiving data by NMHSs:</b>	<b>49</b>	<b>23</b>	<b>8</b>	<b>5</b>	<b>9</b>	<b>4</b>	<b>13</b>	<b>3</b>	<b>8</b>	<b>6</b>	<b>15</b>
	Includes Standardized HydroMet Info	41	19	9	5	8	4	12	3	8	5	9
	Includes Loss Life Info	30	13	5	3	8	2	7	3	7	3	8
	Includes Number Affected Info	30	16	5	3	6	2	8	3	7	4	6
	Includes Cost Info	27	11	5	2	8	2	7	1	6	4	7
Flash flood	<b>Status of Archiving data by NMHSs:</b>	<b>76</b>	<b>31</b>	<b>14</b>	<b>10</b>	<b>9</b>	<b>12</b>	<b>14</b>	<b>5</b>	<b>12</b>	<b>9</b>	<b>24</b>
	Includes Standardized HydroMet Info	65	25	11	9	8	9	10	5	11	9	21
	Includes Loss Life Info	37	18	7	5	5	5	9	2	9	7	5
	Includes Number Affected Info	31	16	7	3	3	5	8	2	8	4	4
	Includes Cost Info	28	13	5	5	4	4	7	0	6	6	5
Forest or wild land fire	<b>Status of Archiving data by NMHSs:</b>	<b>46</b>	<b>22</b>	<b>8</b>	<b>4</b>	<b>6</b>	<b>10</b>	<b>6</b>	<b>6</b>	<b>8</b>	<b>3</b>	<b>13</b>
	Includes Standardized HydroMet Info	36	17	8	4	4	8	5	6	7	2	8
	Includes Loss Life Info	21	11	3	4	5	3	3	2	6	2	5
	Includes Number Affected Info	23	14	3	4	4	3	4	2	7	2	5
	Includes Cost Info	23	12	5	4	4	4	5	1	6	2	5
Freezing rain	<b>Status of Archiving data by NMHSs:</b>	<b>42</b>	<b>8</b>	<b>1</b>	<b>0</b>	<b>13</b>	<b>3</b>	<b>8</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>28</b>
	Includes Standardized HydroMet Info	36	7	1	0	10	2	7	2	2	0	23
	Includes Loss Life Info	10	2	1	0	5	0	3	1	2	0	4
	Includes Number Affected Info	9	3	1	0	3	0	4	1	1	0	3
	Includes Cost Info	11	5	1	0	3	3	4	0	2	0	2
Hailstorm	<b>Status of Archiving data by NMHSs:</b>	<b>71</b>	<b>31</b>	<b>3</b>	<b>5</b>	<b>14</b>	<b>7</b>	<b>16</b>	<b>5</b>	<b>7</b>	<b>5</b>	<b>31</b>
	Includes Standardized HydroMet Info	60	25	2	5	13	5	12	5	7	5	26
	Includes Loss Life Info	19	9	1	1	5	1	7	2	2	2	5
	Includes Number Affected Info	18	10	2	2	3	1	7	3	2	1	4
	Includes Cost Info	16	8	1	2	3	1	6	1	3	1	4

Hazard	Categories	Global 139 /187	Developing Countries 85 / 137	LDC 25 / 50	SIDS 19 / 29	Developed Countries 25 / 25	RA I (Africa) 28 / 52	RA II (Asia) 25 / 34	RA III (South America) 10 / 12	RA IV (North America, Central America and the Caribbean) 18 / 22	RA V (South- West Pacific) 14 / 19	RA VI (Europe) 44 / 48
Heat wave	<b>Status of Archiving data by NMHSs:</b>	<b>81</b>	<b>32</b>	<b>10</b>	<b>1</b>	<b>13</b>	<b>18</b>	<b>15</b>	<b>5</b>	<b>7</b>	<b>3</b>	<b>33</b>
	Includes Standardized HydroMet Info	68	28	8	1	9	17	13	5	6	2	25
	Includes Loss Life Info	14	6	1	1	4	2	5	0	3	0	4
	Includes Number Affected Info	15	9	1	1	3	3	6	1	2	0	3
	Includes Cost Info	14	7	1	1	3	3	5	0	3	0	3
Heavy snow	<b>Status of Archiving data by NMHSs:</b>	<b>58</b>	<b>18</b>	<b>0</b>	<b>0</b>	<b>18</b>	<b>4</b>	<b>10</b>	<b>4</b>	<b>3</b>	<b>2</b>	<b>35</b>
	Includes Standardized HydroMet Info	46	12	0	0	14	2	8	4	2	2	28
	Includes Loss Life Info	13	5	0	0	5	0	4	2	2	0	5
	Includes Number Affected Info	11	6	0	0	3	0	5	2	1	0	3
	Includes Cost Info	11	4	0	0	4	0	5	0	2	0	4
Landslide or mudslide	<b>Status of Archiving data by NMHSs:</b>	<b>45</b>	<b>20</b>	<b>7</b>	<b>4</b>	<b>6</b>	<b>4</b>	<b>12</b>	<b>4</b>	<b>9</b>	<b>5</b>	<b>11</b>
	Includes Standardized HydroMet Info	37	15	7	4	6	3	10	4	8	5	7
	Includes Loss Life Info	29	14	5	4	5	2	8	2	8	5	4
	Includes Number Affected Info	23	12	5	3	3	2	6	2	6	5	2
	Includes Cost Info	23	9	5	3	5	2	7	0	5	5	4
Marine hazards	<b>Status of Archiving data by NMHSs:</b>	<b>31</b>	<b>12</b>	<b>1</b>	<b>0</b>	<b>7</b>	<b>4</b>	<b>6</b>	<b>2</b>	<b>1</b>	<b>3</b>	<b>15</b>
	Includes Standardized HydroMet Info	24	8	1	0	6	2	5	2	1	3	11
	Includes Loss Life Info	11	4	2	1	3	1	4	0	1	3	2
	Includes Number Affected Info	8	4	2	1	1	1	4	0	0	3	0
	Includes Cost Info	9	4	2	1	2	1	4	0	1	2	1
River flooding	<b>Status of Archiving data by NMHSs:</b>	<b>73</b>	<b>28</b>	<b>11</b>	<b>6</b>	<b>12</b>	<b>13</b>	<b>13</b>	<b>4</b>	<b>11</b>	<b>5</b>	<b>27</b>
	Includes Standardized HydroMet Info	64	24	10	6	9	10	12	5	10	4	23
	Includes Loss Life Info	38	16	8	4	8	4	10	2	9	5	8
	Includes Number Affected Info	35	16	8	4	7	4	9	2	9	4	7
	Includes Cost Info	33	13	7	4	8	4	8	1	7	4	9



Hazard	Categories	Global 139 /187	Developing Countries 85 / 137	LDC 25 / 50	SIDS 19 / 29	Developed Countries 25 / 25	RA I (Africa) 28 / 52	RA II (Asia) 25 / 34	RA III (South America) 10 / 12	RA IV (North America, Central America and the Caribbean) 18 / 22	RA V (South- West Pacific) 14 / 19	RA VI (Europe) 44 / 48
Sandstorm	<b>Status of Archiving data by NMHSs:</b>	<b>30</b>	<b>18</b>	<b>4</b>	<b>0</b>	<b>2</b>	<b>10</b>	<b>11</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>7</b>
	Includes Standardized HydroMet Info	25	14	3	0	2	8	9	1	1	0	6
	Includes Loss Life Info	6	3	0	0	2	1	2	0	1	0	2
	Includes Number Affected Info	5	4	0	0	0	1	3	0	0	0	1
	Includes Cost Info	6	4	0	0	1	1	3	0	1	0	1
Smoke, Dust or Haze	<b>Status of Archiving data by NMHSs:</b>	<b>54</b>	<b>29</b>	<b>9</b>	<b>5</b>	<b>4</b>	<b>13</b>	<b>17</b>	<b>2</b>	<b>4</b>	<b>3</b>	<b>15</b>
	Includes Standardized HydroMet Info	42	21	8	5	4	11	12	2	4	3	10
	Includes Loss Life Info	9	2	1	1	4	2	2	0	1	0	4
	Includes Number Affected Info	11	6	1	1	2	2	4	1	0	1	3
	Includes Cost Info	9	4	2	1	1	2	4	0	0	1	2
Storm surge	<b>Status of Archiving data by NMHSs:</b>	<b>41</b>	<b>14</b>	<b>6</b>	<b>8</b>	<b>11</b>	<b>2</b>	<b>8</b>	<b>2</b>	<b>9</b>	<b>6</b>	<b>14</b>
	Includes Standardized HydroMet Info	35	10	5	4	10	2	7	3	4	6	13
	Includes Loss Life Info	23	8	5	7	7	1	6	0	5	7	4
	Includes Number Affected Info	15	6	4	4	3	1	6	0	4	3	1
	Includes Cost Info	16	6	3	4	4	1	5	0	4	3	3
Strong winds	<b>Status of Archiving data by NMHSs:</b>	<b>110</b>	<b>46</b>	<b>17</b>	<b>15</b>	<b>20</b>	<b>21</b>	<b>18</b>	<b>7</b>	<b>12</b>	<b>13</b>	<b>39</b>
	Includes Standardized HydroMet Info	92	40	14	12	15	18	16	7	10	11	30
	Includes Loss Life Info	34	17	6	6	6	4	9	2	5	9	5
	Includes Number Affected Info	27	15	5	3	3	4	9	2	4	5	3
	Includes Cost Info	26	13	4	3	5	4	8	1	4	4	5
Thunderstorm or lightning	<b>Status of Archiving data by NMHSs:</b>	<b>103</b>	<b>47</b>	<b>15</b>	<b>13</b>	<b>17</b>	<b>20</b>	<b>20</b>	<b>7</b>	<b>11</b>	<b>11</b>	<b>34</b>
	Includes Standardized HydroMet Info	85	41	11	10	14	17	16	7	10	10	25
	Includes Loss Life Info	35	19	4	3	7	5	10	3	5	6	6
	Includes Number Affected Info	27	15	5	3	2	4	9	2	3	5	4
	Includes Cost Info	21	11	3	2	3	3	7	1	3	4	3

Hazard	Categories	Global 139 / 187	Developing Countries 85 / 137	LDC 25 / 50	SIDS 19 / 29	Developed Countries 25 / 25	RA I (Africa) 28 / 52	RA II (Asia) 25 / 34	RA III (South America) 10 / 12	RA IV (North America, Central America and the Caribbean) 18 / 22	RA V (South- West Pacific) 14 / 19	RA VI (Europe) 44 / 48
Tornado	<b>Status of Archiving data by NMHSs:</b>	<b>40</b>	<b>16</b>	<b>4</b>	<b>3</b>	<b>11</b>	<b>4</b>	<b>8</b>	<b>3</b>	<b>5</b>	<b>5</b>	<b>15</b>
	Includes Standardized HydroMet Info	32	10	4	3	10	3	6	2	4	5	12
	Includes Loss Life Info	21	9	3	2	8	2	7	1	3	4	4
	Includes Number Affected Info	16	7	3	1	5	1	7	1	3	2	2
	Includes Cost Info	13	6	2	1	5	1	5	1	3	1	2
Tropical cyclone	<b>Status of Archiving data by NMHSs:</b>	<b>47</b>	<b>26</b>	<b>11</b>	<b>13</b>	<b>6</b>	<b>6</b>	<b>11</b>	<b>2</b>	<b>14</b>	<b>11</b>	<b>3</b>
	Includes Standardized HydroMet Info	43	23	11	12	5	6	10	2	12	11	2
	Includes Loss Life Info	29	18	5	8	4	2	8	1	9	8	1
	Includes Number Affected Info	27	16	6	8	3	1	8	1	9	7	1
	Includes Cost Info	25	14	6	8	3	1	7	0	8	8	1
Tsunami	<b>Status of Archiving data by NMHSs:</b>	<b>27</b>	<b>14</b>	<b>5</b>	<b>3</b>	<b>5</b>	<b>2</b>	<b>9</b>	<b>2</b>	<b>6</b>	<b>6</b>	<b>2</b>
	Includes Standardized HydroMet Info	23	11	5	3	5	2	9	1	4	5	2
	Includes Loss Life Info	17	9	3	2	4	0	7	1	4	4	1
	Includes Number Affected Info	16	8	3	1	4	0	7	1	3	4	1
	Includes Cost Info	13	6	2	2	4	0	5	0	3	4	1
Volcanic events	<b>Status of Archiving data by NMHSs:</b>	<b>16</b>	<b>7</b>	<b>3</b>	<b>1</b>	<b>4</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>5</b>	<b>3</b>	<b>2</b>
	Includes Standardized HydroMet Info	15	7	3	1	4	3	1	2	5	3	1
	Includes Loss Life Info	12	5	2	1	4	2	1	1	4	3	1
	Includes Number Affected Info	12	6	2	1	3	2	1	1	4	3	1
	Includes Cost Info	12	4	2	1	5	2	1	0	4	3	2
Waterborne hazards	<b>Status of Archiving data by NMHSs:</b>	<b>33</b>	<b>9</b>	<b>3</b>	<b>2</b>	<b>8</b>	<b>3</b>	<b>8</b>	<b>2</b>	<b>3</b>	<b>2</b>	<b>15</b>
	Includes Standardized HydroMet Info	25	7	3	2	5	2	6	2	2	2	11
	Includes Loss Life Info	10	1	2	1	4	2	1	0	2	2	3
	Includes Number Affected Info	9	2	2	1	3	2	1	1	1	2	2
	Includes Cost Info	10	1	3	1	4	2	2	0	2	1	3



**Annex 4 – Status of Issuance of Warnings for Different Hazards**



**Table 2. Status of Issuance of Warnings for Different Hazards Globally**

Hazards	Warnings issued	Issued By			Sole issuer of warning	Are further improvements necessary?	Is information included about the potential impacts?
		NMS	NHS	Combined Service			
Strong winds	130	88	0	37	112	111	71
Thunderstorm or lightning	114	74	0	30	95	103	55
Avation hazards	102	66	0	21	86	86	47
Flash flood	99	35	22	38	82	91	59
River flooding	94	16	34	40	70	86	59
Heat wave	94	61	0	32	78	82	47
Drought	92	47	2	36	69	82	57
Dense fog	79	51	0	21	67	70	44
Cold wave	74	44	0	28	62	63	37
Hailstorm	65	40	0	23	55	55	26
Smoke, Dust or Haze	64	43	0	16	55	57	41
Coastal flooding	63	26	11	23	48	58	43
Storm surge	62	32	1	21	51	55	43
Tropical cyclone	61	45	0	14	56	53	52
Forest or wild land fire	59	27	0	23	28	43	27
Heavy snow	58	31	1	24	51	50	29
Landslide or mudslide	43	14	1	21	26	40	31
Freezing rain	42	22	1	16	33	37	22
Marine hazards	37	18	2	13	29	30	22
Sandstorm	34	25	0	7	29	31	18
Waterborne hazards	33	7	3	14	19	23	13
Avalanche	30	11	0	15	19	24	19
Earthquakes	28	11	1	7	19	20	15
Airborne hazardous substances	28	8	1	15	18	21	14
Tsunami	28	18	0	4	21	25	24
Tornado	25	17	0	7	21	22	14
Volcanic events	23	12	0	6	16	19	15
Desert locust swarm	16	11	0	3	10	12	10

**Table 3. Status of Issuance of Warnings for Different Hazards in Africa.**

Hazards	Warnings issued	Issued By			Sole issuer of warning	Are further improvements necessary?	Is information included about the potential impacts?
		NMS	NHS	Combined Service			
Strong winds	26	25	0	0	24	24	13
Thunderstorm or lightning	23	22	0	0	21	22	11
Flash flood	21	9	9	2	18	18	10
Heat wave	21	20	0	0	20	20	14
Drought	20	17	1	1	13	17	13
Aviation hazards	20	17	0	0	18	19	11
River flooding	19	4	13	1	15	16	11
Dense fog	17	16	0	0	16	16	11
Smoke, Dust or Haze	17	14	0	1	16	16	9
Sandstorm	12	12	0	0	12	11	6
Coastal flooding	11	7	3	1	8	9	7
Cold wave	11	10	0	0	11	10	7
Desert locust swarm	11	8	0	2	7	9	7
Forest or wild land fire	10	6	0	3	4	8	5
Hailstorm	9	9	0	0	8	8	2
Tropical cyclone	9	9	0	0	9	9	8
Earthquakes	5	2	1	1	4	4	2
Landslide or mudslide	5	3	0	2	2	4	4
Waterborne hazards	5	0	1	2	4	4	2
Marine hazards	5	3	1	1	4	4	3
Tsunami	5	4	0	0	4	5	4
Heavy snow	4	4	0	0	4	4	1
Storm surge	4	2	1	1	3	2	3
Volcanic events	3	1	0	1	2	2	2
Tornado	2	2	0	0	2	2	1
Airborne hazardous substances	2	0	1	1	1	1	0
Freezing rain	1	1	0	0	1	1	0
Avalanche	0	0	0	0	0	0	0

**Table 4. Status of Issuance of Warnings for Different Hazards in Asia.**

Hazards	Warnings issued	Issued By			Sole issuer of warning	Are further improvements necessary?	Is information included about the potential impacts?
		NMS	NHS	Combined Service			
Strong winds	22	14	0	6	20	20	15
Aviation hazards	20	12	0	3	14	16	10
Thunderstorm or lightning	19	12	0	4	16	16	12
Heat wave	18	13	0	5	14	16	9
Flash flood	17	8	1	7	12	17	15
Cold wave	17	11	0	5	15	16	11
Drought	14	4	0	7	11	13	10
River flooding	14	1	3	8	10	13	12
Dense fog	14	9	0	3	13	13	9
Tropical cyclone	14	12	0	1	13	14	13
Smoke, Dust or Haze	13	9	0	4	13	13	11
Hailstorm	11	8	0	3	10	9	6
Sandstorm	11	6	0	3	10	11	7
Landslide or mudslide	11	4	0	6	8	11	9
Heavy snow	10	4	0	5	10	10	7
Coastal flooding	10	4	2	4	8	9	7
Storm surge	10	7	0	3	8	9	8
Tsunami	9	7	0	1	7	8	8
Forest or wild land fire	8	3	0	3	4	5	6
Earthquakes	6	5	0	1	6	6	4
Waterborne hazards	6	3	0	3	6	6	3
Freezing rain	6	3	1	2	6	6	4
Tornado	5	4	0	0	4	4	4
Avalanche	5	1	0	4	5	5	3
Marine hazards	4	3	0	0	3	3	3
Desert locust swarm	3	2	0	1	2	2	2
Airborne hazardous substances	3	1	0	2	3	3	2
Volcanic events	2	2	0	0	2	2	2

**Table 5. Status of Issuance of Warnings for Different Hazards in South America.**

Hazards	Warnings issued	Issued By			Sole issuer of warning	Are further improvements necessary?	Is information included about the potential impacts?
		NMS	NHS	Combined Service			
Strong winds	9	5	0	3	7	7	1
Drought	9	5	0	3	8	9	1
Thunderstorm or lightning	8	4	0	3	6	8	1
Cold wave	8	5	0	3	7	8	1
Heat wave	8	5	0	3	7	8	1
River flooding	7	0	3	4	6	7	1
Hailstorm	6	4	0	2	5	6	1
Flash flood	5	1	1	3	5	5	0
Dense fog	5	4	0	1	4	4	1
Forest or wild land fire	4	3	0	1	3	3	0
Aviation hazards	4	2	0	1	4	4	1
Heavy snow	4	3	0	1	4	4	1
Landslide or mudslide	3	0	0	3	2	3	1
Avalanche	3	1	0	1	2	2	1
Tropical cyclone	3	2	0	1	3	3	2
Tornado	2	2	0	0	1	2	0
Volcanic events	2	2	0	0	2	2	0
Smoke, Dust or Haze	2	2	0	0	2	2	1
Storm surge	2	2	0	0	2	2	1
Sandstorm	2	1	0	1	2	2	0
Coastal flooding	1	1	0	0	1	1	0
Waterborne hazards	1	1	0	0	1	1	0
Marine hazards	1	0	1	0	1	1	0
Freezing rain	1	1	0	0	1	1	0
Airborne hazardous substances	1	1	0	0	1	1	0
Earthquakes	0	0	0	0	0	0	0
Tsunami	0	0	0	0	0	0	0
Desert locust swarm	0	0	0	0	0	0	0

**Table 6. Status of Issuance of Warnings for Different Hazards in North and Central America and the Caribbean**

Hazards	Warnings issued	Issued By			Sole issuer of warning	Are further improvements necessary?	Is information included about the potential impacts?
		NMS	NHS	Combined Service			
Tropical cyclone	18	8	0	9	16	15	16
Strong winds	18	9	0	9	15	17	16
Drought	15	5	0	9	11	15	11
Thunderstorm or lightning	15	7	0	6	13	15	12
Storm surge	15	6	0	7	13	15	13
Flash flood	14	7	1	6	11	13	14
Coastal flooding	14	5	1	7	12	14	12
Aviation hazards	14	7	0	6	11	12	9
River flooding	12	4	1	7	10	12	11
Heat wave	12	3	0	9	9	12	7
Smoke, Dust or Haze	11	5	0	5	7	10	7
Landslide or mudslide	9	5	0	4	6	9	9
Forest or wild land fire	6	2	0	4	4	6	4
Cold wave	6	1	0	5	4	6	4
Dense fog	6	2	0	4	6	5	4
Tornado	5	2	0	3	4	5	5
Hailstorm	5	1	0	4	4	4	3
Earthquakes	4	0	0	3	2	4	4
Volcanic events	4	0	0	3	1	3	3
Avalanche	4	1	0	3	2	4	4
Waterborne hazards	4	0	0	3	0	3	3
Marine hazards	4	0	0	3	3	4	4
Tsunami	3	0	0	2	2	3	3
Airborne hazardous substances	3	1	0	2	2	3	3
Heavy snow	2	0	0	2	2	2	2
Freezing rain	2	0	0	2	2	2	2
Desert locust swarm	1	1	0	0	1	1	1
Sandstorm	1	0	0	1	0	1	1



**Table 7. Status of Issuance of Warnings for Different Hazards in the South-West Pacific.**

Hazards	Warnings issued	Issued By			Sole issuer of warning	Are further improvements necessary?	Is information included about the potential impacts?
		NMS	NHS	Combined Service			
Strong winds	14	12	0	2	12	11	10
Tropical cyclone	13	11	0	2	11	10	10
Storm surge	12	9	0	2	10	11	10
Drought	11	7	0	4	8	9	7
Aviation hazards	11	10	0	1	10	8	4
Thunderstorm or lightning	10	8	0	2	9	9	5
Coastal flooding	10	6	1	2	6	10	8
Flash flood	9	4	2	2	7	8	6
Tsunami	9	6	0	1	7	8	7
River flooding	8	2	3	2	5	8	7
Volcanic events	7	4	0	1	5	6	7
Earthquakes	6	3	0	1	4	4	4
Marine hazards	6	6	0	0	5	5	4
Smoke, Dust or Haze	6	6	0	0	5	5	3
Forest or wild land fire	5	3	0	1	1	3	3
Landslide or mudslide	4	0	1	1	3	4	3
Dense fog	4	3	0	1	3	4	3
Hailstorm	3	2	0	0	3	3	3
Waterborne hazards	3	1	0	0	2	1	1
Heat wave	2	2	0	0	1	1	1
Airborne hazardous substances	2	1	0	0	1	1	1
Tornado	1	1	0	0	1	0	1
Heavy snow	1	1	0	0	1	1	0
Sandstorm	1	1	0	0	1	1	1
Avalanche	0	0	0	0	0	0	0
Desert locust swarm	0	0	0	0	0	0	0
Cold wave	0	0	0	0	0	0	0
Freezing rain	0	0	0	0	0	0	0

**Table 8. Status of Issuance of Warnings for Different Hazards in Europe.**

Hazards	Warnings issued	Issued By			Sole issuer of warning	Are further improvements necessary?	Is information included about the potential impacts?
		NMS	NHS	Combined Service			
Strong winds	41	23	0	17	34	32	16
Thunderstorm or lightning	39	21	0	15	30	33	14
Heavy snow	37	19	1	16	30	29	18
River flooding	34	5	11	18	24	30	17
Flash flood	33	6	8	18	29	30	14
Heat wave	33	18	0	15	27	25	15
Dense fog	33	17	0	12	25	28	16
Aviation hazards	33	18	0	10	29	27	12
Freezing rain	32	17	0	12	23	27	16
Cold wave	32	17	0	15	25	23	14
Hailstorm	31	16	0	14	25	25	11
Forest or wild land fire	26	10	0	11	12	18	9
Drought	23	9	1	12	18	19	15
Storm surge	19	6	0	8	15	16	8
Avalanche	18	8	0	7	10	13	11
Airborne hazardous substances	17	4	0	10	10	12	8
Marine hazards	17	6	0	9	13	13	8
Coastal flooding	17	3	4	9	13	15	9
Smoke, Dust or Haze	15	7	0	6	12	11	10
Waterborne hazards	14	2	2	6	6	8	4
Landslide or mudslide	11	2	0	5	5	9	5
Tornado	10	6	0	4	9	9	3
Earthquakes	7	1	0	1	3	2	1
Sandstorm	7	5	0	2	4	5	3
Volcanic events	5	3	0	1	4	4	1
Tropical cyclone	4	3	0	1	4	2	3
Tsunami	2	1	0	0	1	1	2
Desert locust swarm	1	0	0	0	0	0	0

**Table 9. Status of Issuance of Warnings for Different Hazards in Developing Countries**

Hazards	Warnings issued	Issued By			Sole issuer of warning	Are further improvements necessary?	Is information included about the potential impacts?
		NMS	NHS	Combined Service			
Strong winds	79	61	0	14	68	71	48
Thunderstorm or lightning	70	53	0	11	60	66	40
Drought	64	36	1	21	47	59	39
Aviation hazards	61	45	0	7	50	54	33
Flash flood	60	27	14	16	49	55	41
Heat wave	55	43	0	11	46	52	30
River flooding	54	10	22	19	42	50	37
Tropical cyclone	48	36	0	10	43	44	41
Smoke, Dust or Haze	44	36	0	5	39	42	29
Dense fog	42	34	0	6	38	38	26
Coastal flooding	39	20	7	11	30	36	29
Cold wave	38	28	0	8	33	36	21
Storm surge	33	21	1	9	26	30	26
Forest or wild land fire	30	16	0	10	15	22	16
Hailstorm	30	24	0	5	26	27	12
Landslide or mudslide	27	13	1	12	17	26	21
Sandstorm	25	21	0	2	23	24	13
Tsunami	21	15	0	3	15	20	17
Earthquakes	17	9	1	5	14	16	11
Heavy snow	16	12	0	3	16	16	9
Desert locust swarm	15	11	0	3	10	12	10
Waterborne hazards	13	4	1	4	9	10	5
Marine hazards	13	9	2	2	10	11	8
Volcanic events	13	6	0	4	9	11	9
Tornado	12	11	0	0	9	11	7
Avalanche	9	4	0	4	6	8	6
Freezing rain	7	6	0	1	7	7	4
Airborne hazardous substances	6	3	1	1	4	4	2

**Table 10. Status of Issuance of Warnings for Different Hazards in Least Developed Countries.**

Hazards	Warnings issued	Issued By			Sole issuer of warning	Are further improvements necessary?	Is information included about the potential impacts?
		NMS	NHS	Combined Service			
Strong winds	21	17	0	3	19	21	14
Drought	19	14	0	5	13	18	12
Thunderstorm or lightning	18	14	0	2	15	18	11
River flooding	18	3	10	3	14	16	12
Flash flood	17	8	6	3	15	17	11
Aviation hazards	16	11	0	3	11	15	10
Heat wave	15	13	0	2	13	15	10
Tropical cyclone	14	12	0	2	14	13	13
Smoke, Dust or Haze	13	11	0	1	12	13	8
Coastal flooding	9	4	2	3	8	9	7
Cold wave	9	8	0	1	8	9	8
Storm surge	8	5	1	2	8	8	8
Dense fog	7	6	0	1	6	7	5
Tsunami	7	4	0	1	6	7	6
Desert locust swarm	7	4	0	2	3	6	5
Forest or wild land fire	6	3	0	2	2	4	3
Sandstorm	5	5	0	0	5	5	3
Landslide or mudslide	4	2	0	2	3	4	4
Volcanic events	4	1	0	1	4	4	4
Earthquakes	3	1	0	1	3	3	2
Hailstorm	3	3	0	0	2	3	1
Waterborne hazards	3	1	0	0	3	3	3
Tornado	2	2	0	0	2	2	2
Marine hazards	2	1	1	0	2	2	2
Avalanche	1	0	0	1	1	1	1
Freezing rain	1	1	0	0	1	1	1
Heavy snow	0	0	0	0	0	0	0
Airborne hazardous substances	0	0	0	0	0	0	0

**Table 11. Status of Issuance of Warnings for Different Hazards in Small Island Developing States**

Hazards	Warnings issued	Issued By			Sole issuer of warning	Are further improvements necessary?	Is information included about the potential impacts?
		NMS	NHS	Combined Service			
Strong winds	18	15	0	3	15	16	15
Tropical cyclone	17	13	0	3	15	14	15
Thunderstorm or lightning	16	13	0	2	13	15	12
Drought	15	9	0	5	11	14	10
Aviation Hazards	15	12	0	3	13	13	9
Flash flood	14	10	1	3	11	12	12
Storm surge	13	8	0	3	11	13	12
Coastal flooding	13	8	1	3	11	13	12
River flooding	12	6	2	4	11	12	11
Smoke, Dust or Haze	11	8	0	2	8	10	5
Landslide or mudslide	8	4	1	2	5	8	7
Tsunami	6	5	0	1	4	6	4
Forest or wild land fire	5	1	0	4	2	5	4
Dense fog	4	2	0	2	3	4	3
Heat wave	4	2	0	2	3	4	2
Marine hazards	4	3	0	1	3	4	3
Earthquakes	4	3	0	1	3	4	3
Volcanic events	4	2	0	1	3	4	4
Tornado	3	3	0	0	2	3	3
Hailstorm	2	1	0	1	2	2	2
Waterborne hazards	2	0	0	1	0	1	1
Desert locust swarm	1	1	0	0	1	1	1
Avalanche	1	0	0	1	1	1	1

**Table 12. Status of Issuance of Warnings for Different Hazards in Developed Countries**

Hazards	Warnings issued	Issued By			Sole issuer of warning	Are further improvements necessary?	Is information included about the potential impacts?
		NMS	NHS	Combined Service			
Strong winds	23	19	0	3	17	15	9
Aviation hazards	21	14	0	3	18	16	5
Thunderstorm or lightning	20	15	0	3	13	15	7
Heavy snow	20	15	1	3	13	13	8
River flooding	18	6	9	3	7	15	7
Freezing rain	17	12	0	3	9	13	7
Dense fog	16	13	0	2	10	12	6
Flash flood	15	6	5	4	9	13	6
Hailstorm	15	12	0	2	10	10	5
Storm surge	15	7	0	5	12	12	8
Heat wave	14	12	0	2	8	9	5
Cold wave	14	12	0	2	8	8	4
Forest or wild land fire	14	9	0	1	3	9	4
Coastal flooding	12	5	3	3	7	11	6
Marine hazards	12	6	0	3	7	8	6
Avalanche	10	5	0	3	5	6	4
Drought	9	6	1	2	6	7	5
Tropical cyclone	8	6	0	2	8	6	6
Airborne hazardous substances	8	4	0	2	3	4	4
Smoke, Dust or Haze	8	5	0	2	4	6	5
Waterborne hazards	7	2	1	2	1	3	2
Earthquakes	7	2	0	2	3	3	3
Volcanic events	7	4	0	2	4	6	4
Landslide or mudslide	5	0	0	3	1	4	4
Tornado	4	2	0	2	3	4	3
Sandstorm	4	3	0	1	1	2	2
Tsunami	4	3	0	1	3	3	4
Desert locust swarm	1	0	0	0	0	0	0

## Annex 5 – Dissemination Methods and Target Audiences

**Table 1. Dissemination Systems and Target Audiences – Global Situation**

Hazard	Historical Data Archives	Real-Time Monitoring	Forecasts And Outlooks	Early Warnings
Head of the Government?	48.70%	64.29%	78.81%	79.49%
Ministry that oversees the National Meteorological and Hydrological Service?	64.80%	74.59%	84.50%	85.60%
Other Ministries?	68.85%	73.33%	86.61%	89.60%
Head of the National Committee for Disaster Risk Reduction	58.47%	69.75%	79.34%	78.81%
Emergency response services? (i.e. hospitals, police, fire department)	51.67%	67.50%	80.49%	80.00%
General public?	62.30%	81.30%	97.73%	96.03%
News media?	63.93%	79.20%	97.76%	97.64%
Businesses?	50.00%	56.90%	73.39%	66.95%
WMO Regional Specialized Meteorological Centre(s)?	43.44%	49.58%	48.74%	46.15%
The United Nations Country Coordinator (UNDP)?	19.33%	18.75%	24.14%	23.48%
National Red Cross and Red Crescent Societies	23.28%	28.44%	33.33%	37.17%
Other organizations with interest in disaster prevention and mitigation (i.e., development banks, NGOs, academia)?	41.80%	38.05%	48.72%	46.55%
Internet based data (e.g. FTP downloads)	41.82%	55.56%	69.91%	69.16%
Sent to the recipient on recorded media (i.e. CD, video tape, or DVD)	38.33%	21.43%	27.43%	25.45%
Hard copy mailings	45.38%	39.47%	53.39%	48.72%
Posted on a web page	46.72%	69.35%	87.40%	81.75%
By facsimile	52.89%	62.60%	85.83%	82.17%
Mobile phone text messaging (e.g. SMS, MMS)	13.22%	27.42%	31.97%	31.71%
Use of sirens, signal balls, flags, etc?	4.20%	14.78%	11.40%	14.91%
Through meetings or briefings (in person, conference call or teleconference call)	47.93%	65.85%	76.19%	72.58%
Other (please specify):	32.00%	48.98%	55.10%	58.00%

**Table 2. Dissemination Methods and Target Audiences in Africa**

<b>Hazard</b>	<b>Historical Data Archives</b>	<b>Real-Time Monitoring</b>	<b>Forecasts And Outlooks</b>	<b>Early Warnings</b>
Head of the Government?	43.48%	47.62%	80.00%	77.78%
Ministry that oversees the National Meteorological and Hydrological Service?	69.23%	79.17%	96.00%	91.67%
Other Ministries?	72.00%	66.67%	96.00%	87.50%
Head of the National Committee for Disaster Risk Reduction	54.17%	62.50%	78.26%	76.19%
Emergency response services? (i.e. hospitals, police, fire department)	28.00%	43.48%	54.17%	54.55%
General public?	57.69%	69.57%	100.00%	95.83%
News media?	62.96%	72.00%	100.00%	96.00%
Businesses?	50.00%	47.62%	79.17%	68.18%
WMO Regional Specialized Meteorological Centre(s)?	36.00%	45.83%	43.48%	42.86%
The United Nations Country Coordinator (UNDP)?	26.09%	21.05%	26.32%	30.00%
National Red Cross and Red Crescent Societies	19.05%	29.41%	33.33%	36.84%
Other organizations with interest in disaster prevention and mitigation (i.e., development banks, NGOs, academia)?	43.48%	40.00%	52.63%	50.00%
Internet based data (e.g. FTP downloads)	21.05%	27.78%	57.89%	52.94%
Sent to the recipient on recorded media (i.e. CD, video tape, or DVD)	13.64%	13.04%	22.73%	22.73%
Hard copy mailings	39.13%	45.45%	58.33%	56.52%
Posted on a web page	26.09%	31.82%	65.22%	50.00%
By facsimile	50.00%	56.52%	75.00%	69.57%
Mobile phone text messaging (e.g. SMS, MMS)	8.70%	17.39%	19.05%	22.73%
Use of sirens, signal balls, flags, etc?	0.00%	9.09%	0.00%	0.00%
Through meetings or briefings (in person, conference call or teleconference call)	45.83%	70.83%	76.00%	75.00%
Other (please specify):	37.50%	37.50%	57.14%	50.00%



**Table 3. Dissemination Methods and Target Audiences in Asia.**

<b>Hazard</b>	<b>Historical Data Archives</b>	<b>Real-Time Monitoring</b>	<b>Forecasts And Outlooks</b>	<b>Early Warnings</b>
Head of the Government?	57.89%	65.00%	86.36%	86.36%
Ministry that oversees the National Meteorological and Hydrological Service?	63.64%	76.19%	91.67%	95.65%
Other Ministries?	71.43%	71.43%	95.83%	100.00%
Head of the National Committee for Disaster Risk Reduction	66.67%	63.64%	82.61%	82.61%
Emergency response services? (i.e. hospitals, police, fire department)	57.89%	55.00%	86.36%	86.36%
General public?	59.09%	60.00%	91.67%	95.45%
News media?	57.14%	59.09%	91.67%	95.65%
Businesses?	50.00%	40.00%	59.09%	55.00%
WMO Regional Specialized Meteorological Centre(s)?	60.00%	47.37%	61.90%	61.90%
The United Nations Country Coordinator (UNDP)?	30.00%	26.32%	36.36%	33.33%
National Red Cross and Red Crescent Societies	30.00%	21.05%	33.33%	33.33%
Other organizations with interest in disaster prevention and mitigation (i.e., development banks, NGOs, academia)?	23.81%	30.00%	39.13%	36.36%
Internet based data (e.g. FTP downloads)	47.62%	57.89%	80.95%	80.00%
Sent to the recipient on recorded media (i.e. CD, video tape, or DVD)	50.00%	22.22%	26.32%	31.58%
Hard copy mailings	54.55%	33.33%	56.52%	56.52%
Posted on a web page	50.00%	66.67%	91.67%	87.50%
By facsimile	50.00%	73.91%	91.67%	95.83%
Mobile phone text messaging (e.g. SMS, MMS)	14.29%	31.82%	45.45%	40.91%
Use of sirens, signal balls, flags, etc?	14.29%	31.82%	36.36%	27.27%
Through meetings or briefings (in person, conference call or teleconference call)	36.36%	45.45%	72.73%	60.87%
Other (please specify):	18.18%	41.67%	50.00%	54.55%

**Table 4. Dissemination Systems and Target Audiences in South America.**

<b>Hazard</b>	<b>Historical Data Archives</b>	<b>Real-Time Monitoring</b>	<b>Forecasts And Outlooks</b>	<b>Early Warnings</b>
Head of the Government?	50.00%	80.00%	90.00%	90.00%
Ministry that oversees the National Meteorological and Hydrological Service?	70.00%	80.00%	80.00%	90.00%
Other Ministries?	70.00%	77.78%	80.00%	90.00%
Head of the National Committee for Disaster Risk Reduction	70.00%	90.00%	100.00%	100.00%
Emergency response services? (i.e. hospitals, police, fire department)	70.00%	70.00%	80.00%	88.89%
General public?	70.00%	90.00%	100.00%	100.00%
News media?	60.00%	80.00%	100.00%	100.00%
Businesses?	30.00%	44.44%	50.00%	40.00%
WMO Regional Specialized Meteorological Centre(s)?	30.00%	37.50%	44.44%	44.44%
The United Nations Country Coordinator (UNDP)?	0.00%	11.11%	11.11%	11.11%
National Red Cross and Red Crescent Societies	10.00%	11.11%	22.22%	22.22%
Other organizations with interest in disaster prevention and mitigation (i.e., development banks, NGOs, academia)?	20.00%	22.22%	33.33%	33.33%
Internet based data (e.g. FTP downloads)	55.56%	66.67%	77.78%	77.78%
Sent to the recipient on recorded media (i.e. CD, video tape, or DVD)	40.00%	11.11%	11.11%	11.11%
Hard copy mailings	10.00%	11.11%	11.11%	0.00%
Posted on a web page	55.56%	66.67%	100.00%	100.00%
By facsimile	55.56%	50.00%	100.00%	90.00%
Mobile phone text messaging (e.g. SMS, MMS)	0.00%	10.00%	10.00%	20.00%
Use of sirens, signal balls, flags, etc?	0.00%	0.00%	0.00%	0.00%
Through meetings or briefings (in person, conference call or teleconference call)	30.00%	40.00%	60.00%	55.56%
Other (please specify):	20.00%	40.00%	60.00%	60.00%

**Table 5. Dissemination Systems and Target Audiences in North and Central America and the Caribbean.**

<b>Hazard</b>	<b>Historical Data Archives</b>	<b>Real-Time Monitoring</b>	<b>Forecasts And Outlooks</b>	<b>Early Warnings</b>
Head of the Government?	62.50%	87.50%	94.12%	94.12%
Ministry that oversees the National Meteorological and Hydrological Service?	71.43%	85.71%	100.00%	93.33%
Other Ministries?	85.71%	80.00%	93.33%	100.00%
Head of the National Committee for Disaster Risk Reduction	87.50%	93.75%	100.00%	94.12%
Emergency response services? (i.e. hospitals, police, fire department)	66.67%	81.25%	88.24%	82.35%
General public?	80.00%	100.00%	100.00%	100.00%
News media?	73.33%	93.33%	100.00%	100.00%
Businesses?	73.33%	73.33%	100.00%	100.00%
WMO Regional Specialized Meteorological Centre(s)?	60.00%	75.00%	60.00%	42.86%
The United Nations Country Coordinator (UNDP)?	35.71%	35.71%	47.06%	40.00%
National Red Cross and Red Crescent Societies	46.67%	64.29%	64.71%	82.35%
Other organizations with interest in disaster prevention and mitigation (i.e., development banks, NGOs, academia)?	81.25%	64.29%	87.50%	93.75%
Internet based data (e.g. FTP downloads)	50.00%	61.54%	78.57%	76.92%
Sent to the recipient on recorded media (i.e. CD, video tape, or DVD)	53.33%	30.77%	35.71%	33.33%
Hard copy mailings	61.54%	42.86%	71.43%	64.29%
Posted on a web page	62.50%	81.25%	94.12%	93.75%
By facsimile	68.75%	73.33%	93.75%	94.12%
Mobile phone text messaging (e.g. SMS, MMS)	0.00%	26.67%	26.67%	26.67%
Use of sirens, signal balls, flags, etc?	0.00%	21.43%	13.33%	35.71%
Through meetings or briefings (in person, conference call or teleconference call)	71.43%	100.00%	100.00%	100.00%
Other (please specify):	25.00%	42.86%	42.86%	55.56%

**Table 6. Dissemination Systems and Target Audiences in the South West Pacific.**

<b>Hazard</b>	<b>Historical Data Archives</b>	<b>Real-Time Monitoring</b>	<b>Forecasts And Outlooks</b>	<b>Early Warnings</b>
Head of the Government?	69.23%	71.43%	78.57%	78.57%
Ministry that oversees the National Meteorological and Hydrological Service?	71.43%	78.57%	71.43%	71.43%
Other Ministries?	71.43%	78.57%	85.71%	85.71%
Head of the National Committee for Disaster Risk Reduction	71.43%	85.71%	85.71%	85.71%
Emergency response services? (i.e. hospitals, police, fire department)	71.43%	85.71%	100.00%	100.00%
General public?	69.23%	100.00%	100.00%	100.00%
News media?	71.43%	100.00%	100.00%	100.00%
Businesses?	64.29%	92.86%	85.71%	85.71%
WMO Regional Specialized Meteorological Centre(s)?	78.57%	85.71%	71.43%	78.57%
The United Nations Country Coordinator (UNDP)?	28.57%	28.57%	28.57%	35.71%
National Red Cross and Red Crescent Societies	42.86%	50.00%	50.00%	50.00%
Other organizations with interest in disaster prevention and mitigation (i.e., development banks, NGOs, academia)?	57.14%	71.43%	78.57%	71.43%
Internet based data (e.g. FTP downloads)	50.00%	76.92%	78.57%	78.57%
Sent to the recipient on recorded media (i.e. CD, video tape, or DVD)	42.86%	28.57%	42.86%	30.77%
Hard copy mailings	53.85%	46.15%	50.00%	38.46%
Posted on a web page	50.00%	85.71%	85.71%	85.71%
By facsimile	53.85%	78.57%	85.71%	85.71%
Mobile phone text messaging (e.g. SMS, MMS)	14.29%	28.57%	28.57%	35.71%
Use of sirens, signal balls, flags, etc?	0.00%	15.38%	7.69%	23.08%
Through meetings or briefings (in person, conference call or teleconference call)	57.14%	92.86%	85.71%	92.86%
Other (please specify):	50.00%	50.00%	50.00%	50.00%

**Table 7. Dissemination Systems and Target Audiences in Europe.**

<b>Hazard</b>	<b>Historical Data Archives</b>	<b>Real-Time Monitoring</b>	<b>Forecasts And Outlooks</b>	<b>Early Warnings</b>
Head of the Government?	32.35%	54.84%	62.86%	66.67%
Ministry that oversees the National Meteorological and Hydrological Service?	56.41%	64.10%	72.50%	76.92%
Other Ministries?	57.89%	72.97%	74.36%	82.50%
Head of the National Committee for Disaster Risk Reduction	33.33%	54.55%	57.58%	60.61%
Emergency response services? (i.e. hospitals, police, fire department)	45.95%	75.68%	83.78%	81.08%
General public?	55.56%	82.05%	97.56%	92.50%
News media?	62.86%	82.05%	97.67%	97.50%
Businesses?	40.54%	54.05%	68.42%	59.46%
WMO Regional Specialized Meteorological Centre(s)?	23.68%	31.58%	32.43%	28.95%
The United Nations Country Coordinator (UNDP)?	5.26%	5.41%	5.71%	5.56%
National Red Cross and Red Crescent Societies	8.33%	13.89%	14.29%	15.15%
Other organizations with interest in disaster prevention and mitigation (i.e., development banks, NGOs, academia)?	34.21%	22.22%	27.78%	22.86%
Internet based data (e.g. FTP downloads)	40.00%	55.56%	61.11%	61.76%
Sent to the recipient on recorded media (i.e. CD, video tape, or DVD)	37.84%	22.86%	25.71%	22.86%
Hard copy mailings	44.74%	42.86%	52.78%	47.22%
Posted on a web page	47.37%	82.05%	92.68%	85.37%
By facsimile	48.65%	52.63%	82.50%	73.17%
Mobile phone text messaging (e.g. SMS, MMS)	23.68%	35.00%	40.00%	35.00%
Use of sirens, signal balls, flags, etc?	5.41%	8.82%	6.06%	8.82%
Through meetings or briefings (in person, conference call or teleconference call)	48.65%	57.89%	68.42%	64.10%
Other (please specify):	41.67%	72.73%	66.67%	72.73%

**Table 8. Dissemination Systems and Target Audiences in Developing Countries.**

<b>Hazard</b>	<b>Historical Data Archives</b>	<b>Real-Time Monitoring</b>	<b>Forecasts And Outlooks</b>	<b>Early Warnings</b>
Head of the Government?	55.56%	75.93%	89.09%	86.79%
Ministry that oversees the National Meteorological and Hydrological Service?	66.67%	83.33%	92.86%	90.91%
Other Ministries?	71.43%	72.22%	92.86%	92.73%
Head of the National Committee for Disaster Risk Reduction	63.16%	78.95%	91.07%	88.89%
Emergency response services? (i.e. hospitals, police, fire department)	50.91%	61.82%	78.95%	77.78%
General public?	66.67%	78.18%	98.28%	96.43%
News media?	64.91%	75.44%	98.28%	96.43%
Businesses?	56.14%	57.41%	77.19%	68.52%
WMO Regional Specialized Meteorological Centre(s)?	46.43%	50.00%	53.85%	50.00%
The United Nations Country Coordinator (UNDP)?	25.45%	26.00%	30.77%	29.41%
National Red Cross and Red Crescent Societies	27.27%	36.00%	38.46%	44.23%
Other organizations with interest in disaster prevention and mitigation (i.e., development banks, NGOs, academia)?	44.64%	40.00%	52.94%	50.98%
Internet based data (e.g. FTP downloads)	43.14%	52.00%	72.00%	69.39%
Sent to the recipient on recorded media (i.e. CD, video tape, or DVD)	39.29%	14.00%	20.41%	18.75%
Hard copy mailings	45.45%	32.69%	50.00%	47.17%
Posted on a web page	53.57%	64.91%	91.07%	83.93%
By facsimile	55.17%	60.34%	89.29%	86.21%
Mobile phone text messaging (e.g. SMS, MMS)	7.41%	25.00%	29.63%	31.48%
Use of sirens, signal balls, flags, etc?	3.70%	18.87%	17.31%	19.23%
Through meetings or briefings (in person, conference call or teleconference call)	50.00%	69.64%	82.46%	76.36%
Other (please specify):	22.22%	38.46%	48.00%	51.85%

**Table 9. Dissemination Systems and Target Audiences in Least Developed Countries.**

<b>Hazard</b>	<b>Historical Data Archives</b>	<b>Real-Time Monitoring</b>	<b>Forecasts And Outlooks</b>	<b>Early Warnings</b>
Head of the Government?	50.00%	50.00%	77.78%	78.95%
Ministry that oversees the National Meteorological and Hydrological Service?	77.27%	80.00%	91.30%	95.45%
Other Ministries?	85.71%	75.00%	95.45%	95.45%
Head of the National Committee for Disaster Risk Reduction	80.95%	75.00%	90.91%	90.91%
Emergency response services? (i.e. hospitals, police, fire department)	47.62%	52.63%	68.42%	70.00%
General public?	63.64%	85.71%	95.65%	100.00%
News media?	65.22%	85.71%	95.65%	100.00%
Businesses?	47.37%	58.82%	73.68%	73.68%
WMO Regional Specialized Meteorological Centre(s)?	66.67%	71.43%	60.00%	60.00%
The United Nations Country Coordinator (UNDP)?	36.84%	35.29%	42.11%	50.00%
National Red Cross and Red Crescent Societies	44.44%	37.50%	50.00%	55.00%
Other organizations with interest in disaster prevention and mitigation (i.e., development banks, NGOs, academia)?	52.38%	57.89%	65.00%	71.43%
Internet based data (e.g. FTP downloads)	44.44%	50.00%	57.89%	58.82%
Sent to the recipient on recorded media (i.e. CD, video tape, or DVD)	26.32%	31.58%	40.00%	40.00%
Hard copy mailings	52.63%	55.00%	61.90%	60.00%
Posted on a web page	38.10%	45.00%	61.90%	57.14%
By facsimile	68.42%	75.00%	68.18%	72.73%
Mobile phone text messaging (e.g. SMS, MMS)	19.05%	25.00%	30.00%	28.57%
Use of sirens, signal balls, flags, etc?	5.00%	15.00%	10.00%	10.00%
Through meetings or briefings (in person, conference call or teleconference call)	50.00%	61.90%	72.73%	72.73%
Other (please specify):	60.00%	63.64%	72.73%	72.73%

**Table 10. Dissemination Systems and Target Audiences in Small Island Developing States.**

<b>Hazard</b>	<b>Historical Data Archives</b>	<b>Real-Time Monitoring</b>	<b>Forecasts And Outlooks</b>	<b>Early Warnings</b>
Head of the Government?	76.47%	75.00%	94.12%	94.44%
Ministry that oversees the National Meteorological and Hydrological Service?	88.24%	86.67%	94.12%	94.12%
Other Ministries?	93.75%	68.75%	93.75%	88.24%
Head of the National Committee for Disaster Risk Reduction	88.24%	87.50%	94.44%	94.44%
Emergency response services? (i.e. hospitals, police, fire department)	58.82%	56.25%	75.00%	76.47%
General public?	81.25%	100.00%	100.00%	100.00%
News media?	82.35%	100.00%	100.00%	100.00%
Businesses?	70.59%	81.25%	94.12%	94.44%
WMO Regional Specialized Meteorological Centre(s)?	68.75%	70.59%	60.00%	58.82%
The United Nations Country Coordinator (UNDP)?	41.18%	33.33%	44.44%	50.00%
National Red Cross and Red Crescent Societies	41.18%	46.67%	47.06%	66.67%
Other organizations with interest in disaster prevention and mitigation (i.e., development banks, NGOs, academia)?	76.47%	62.50%	75.00%	83.33%
Internet based data (e.g. FTP downloads)	50.00%	53.33%	68.75%	68.75%
Sent to the recipient on recorded media (i.e. CD, video tape, or DVD)	37.50%	20.00%	43.75%	40.00%
Hard copy mailings	75.00%	56.25%	75.00%	68.75%
Posted on a web page	41.18%	58.82%	76.47%	76.47%
By facsimile	75.00%	64.71%	76.47%	83.33%
Mobile phone text messaging (e.g. SMS, MMS)	5.88%	18.75%	11.76%	17.65%
Use of sirens, signal balls, flags, etc?	0.00%	6.25%	0.00%	12.50%
Through meetings or briefings (in person, conference call or teleconference call)	70.59%	82.35%	88.24%	88.24%
Other (please specify):	40.00%	40.00%	40.00%	40.00%



**Table 11. Dissemination Systems and Target Audiences in Developed Countries.**

<b>Hazard</b>	<b>Historical Data Archives</b>	<b>Real-Time Monitoring</b>	<b>Forecasts And Outlooks</b>	<b>Early Warnings</b>
Head of the Government?	40.00%	47.37%	47.62%	45.00%
Ministry that oversees the National Meteorological and Hydrological Service?	54.55%	52.38%	56.52%	61.90%
Other Ministries?	66.67%	75.00%	73.91%	81.82%
Head of the National Committee for Disaster Risk Reduction	42.11%	47.37%	50.00%	52.63%
Emergency response services? (i.e. hospitals, police, fire department)	52.38%	85.00%	85.71%	85.00%
General public?	65.00%	86.36%	95.83%	90.91%
News media?	68.42%	85.71%	96.00%	95.24%
Businesses?	42.86%	61.90%	66.67%	60.00%
WMO Regional Specialized Meteorological Centre(s)?	28.57%	40.00%	45.00%	30.00%
The United Nations Country Coordinator (UNDP)?	4.76%	5.26%	10.00%	5.26%
National Red Cross and Red Crescent Societies	10.00%	21.05%	20.00%	16.67%
Other organizations with interest in disaster prevention and mitigation (i.e., development banks, NGOs, academia)?	28.57%	26.32%	20.00%	16.67%
Internet based data (e.g. FTP downloads)	68.42%	73.68%	73.68%	76.47%
Sent to the recipient on recorded media (i.e. CD, video tape, or DVD)	50.00%	27.78%	31.58%	22.22%
Hard copy mailings	40.00%	27.78%	33.33%	27.78%
Posted on a web page	70.00%	90.00%	90.91%	86.36%
By facsimile	40.00%	60.00%	77.27%	66.67%
Mobile phone text messaging (e.g. SMS, MMS)	25.00%	45.00%	55.00%	50.00%
Use of sirens, signal balls, flags, etc?	10.53%	23.53%	5.88%	18.75%
Through meetings or briefings (in person, conference call or teleconference call)	55.00%	68.42%	75.00%	68.42%
Other (please specify):	37.50%	71.43%	62.50%	71.43%