

## Role of World Meteorological Organization and National Meteorological and Hydrological Services in Advancing the Hyogo Framework for Action 2005-2015

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## Outline

- WMO
- Disaster Management: Cycles
- Early Warnings
- Role of NMHSs in Disaster Management
- Advancing the Hyogo Framework for Action
- WMO's Initiatives
- Conclusions

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## WMO

- Established in 1950
- Specialized United Nations Agency to coordinate and support the national activities of its Members
- Technical and scientific matters related to **weather, water and climate**
- 187 Member countries and Territories
- 10 major international Scientific & Technical Programmes
  - Data Collection, Modelling and Forecasting, Dissemination of Information, Service Delivery, Technology Transfer and Capacity Building, Education and Training, Research

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## Cycles of Disaster Management

From Wilhite USDA 2005

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## Characteristics of an Early Warning System

- Operates continuously
- Warnings must be timely
- Warning process must be transparent
- **Early warning subsystem must be integrated into larger socioeconomic, cultural and political system**
- Expert staff
- Able to expand to other hazards and functions

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## WMO's Global Operational Network

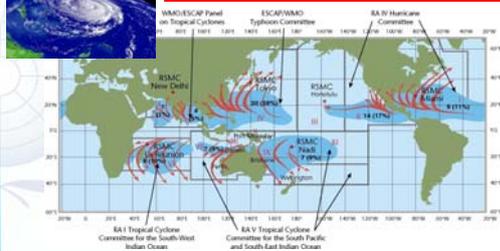
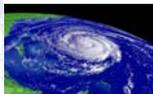
- Global Observing System
- Global Telecommunication System
- Global Data Processing And Forecasting System:
- 3 World Meteorological Centres
- 40 Regional Specialized Centres
- NMHSs deliver information and warning services

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## WMO's Global Tropical Cyclone Early Warning System

6 Regional Specialized Meteorological Centers  
5 Regional Tropical Cyclone Committees



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## NMHSs Contribution to Risk Management

- Early warning
  - Global, regional, national and local observations of critical environmental parameters
  - Numerical weather prediction
  - Forecasts of all weather-related hazards
  - Timely dissemination of **authoritative** warning information
- Risk and impact assessment
  - Who and what is at risk and why?
- Mitigation and response
  - Proactive programmes and actions to reduce risks
  - Increasing need for more reliable and useful forecasts
  - Increasing need for better analysis for policy decision support

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## Improving the Utility of Forecasts

- WMO Members are **extending the range** of skilful hazardous weather forecasts up to 14 days using probabilistic ensemble forecast techniques
- They are developing **accurate and timely weather warnings** in a form that can be readily used in decision-making support tools

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## Despite Significant Technical Progress Many Major Challenges Remain...

- **Legislative and legal framework:** National DRR plans, roles of agencies, information sharing, coordination from national to local levels
- **Organizational:** Resources, recognition, incentives for multi-disciplinary, multi-sectoral collaboration & coordination
- **Financial:** Investment in preventive measures
- **Technical and operational:** Sustainability, relevance, durability, interoperability
- **Capacity building and training**
- **Cultural** – From reactive to preventive

Need for strategic partnerships & coordinated efforts to overcome these challenges

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## WMO and Hyogo Framework for Action

- WMO has a Strong Commitment to Advance Hyogo Framework for Action 2005-2015
- High priority area “Identify, assess and monitor disaster risks and enhance early warnings”

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## WMO Initiatives in Natural Disaster Prevention and Mitigation

- Fourteenth WMO Congress (May 2003) initiated *WMO major programme on Natural Disaster Prevention and Mitigation* as a *crosscutting* programme
- Built on all relevant WMO Programmes
- *to enhance cooperation and collaboration in the field of natural disaster reduction activities*

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## WMO Plans in Support of Members' DPM Activities

- Enhance WMO core capabilities in support of disaster risk reduction
- Establish strategic partnerships

## WMO Initiatives in Support of Members' DPM Activities

- Advocacy at high ministerial level
- Systematic incorporation of user-needs
- Enhance information sharing and global information products
- Good practices portfolio
- Resource mobilization

## WMO's Principal Activities in Support of Disaster Risk Reduction

1. Archiving and cataloguing Meteorological and Hydrological Hazards
2. Capacity Building in Hazard Mapping and input into Risk
3. Multi-Hazard approach to early warning system
4. Education, training and public outreach of NMHSs and their stakeholders (e.g., Authorities, operational NDMOs, Media, etc.)
5. Products and Services of NMHSs in support of post-disaster Emergency Response activities

Strong Focus on Developing and Least Developed Countries

## Conclusions

- Effective **disaster risk management** depends on mitigation, preparedness, prediction and early warning
- Early warning depends on a **comprehensive** observing, forecasting, and dissemination and communication system
- New forecasting methods are improving the forecast of weather related risks
- Conveying **uncertainty** in the warning is critical to the successful use of the warning

## Conclusions

- NMHSs responsible for weather related hazard warnings must work within the **broader framework** of a warning network and risk management system
- A **multi-hazard** approach is appropriate for related hazards of weather, water and climate origin. It is especially beneficial for sequential hazards