



SYMPOSIUM ON MULTI-HAZARD EARLY WARNING SYSTEMS FOR INTEGRATED DISASTER RISK MANAGEMENT

23-24 May 2006, WMO Headquarters, Geneva, Switzerland

ANNOTATED AGENDA

Day 1 - Tuesday, 23 May 2006

(Room: C1-C2)

7.30 – 9.00

Registration

8.30 – 9.00

Coordination meetings between Sessions Co-chairs and the Panellists (Room C1)

9.00 – 9.45

OPENING SESSION (Room C1)

Welcome Address and Official Opening by Mr Michel Jarraud,
Secretary-General of WMO (5 minutes)

Keynote speech by Ms Margareta Wahlström, UN Assistant-Secretary-General for Humanitarian Affairs,
and Deputy to Mr Jan Egeland, Leader of the ISDR System (15 minutes)

Opening Remarks by Representatives of Co-Sponsoring Agencies (15 minutes)

- Mr James Rawley (UNDP) (To be confirmed) (3 minutes)
- Ms Yvette Stevens (OCHA) (3 minutes)
- Mr Johan Schaar (IFRC) (3 minutes)
- Mr Saroj Kumar Jha (The World Bank) (3 minutes)
- Dr Patricio Bernal (UNESCO) (3 minutes)

9.45 – 11.15

SESSION I: Governance and Organisational Issues Related to Early Warning Systems for Integrated Disaster Risk Reduction (Room C1)

Chair: Ms Margareta Wahlström

Panellists:

- Mr Reid Basher (ISDR Secretariat)
Review of the Hyogo Framework for Action: Governance and Organisational Framework and Reference to Early Warning Systems.
- Dr Xu Tang (China Meteorological Administration)
Lessons Learned and Recommendations from Managing Disaster Risks in Mega-Cities.
- Dr Javad Bodagh Jamali (Meteorological Organization, I.R. of Iran) (Tentative)
Governance and Organisational Issues Based on Iran's Experience in Setting up National Committee on Disaster Reduction
- Mr Everett Ressler (UNICEF)
Lessons Learnt through an Inter-Agency Approach for Early Warning / Early Action of Different Hazards.
- Dr Maxx Dilley (on behalf of Inter American Development Bank)
Disaster Risk Management and Examples of Early Warning Projects.

Format:

- Chairperson to present key issues, goals and objectives of Session I and relation to all Panels and Working Groups (10 minutes)
- 10-minute presentations by each panellist (50 minutes)
- Discussion session and Chairperson Summary (30 minutes)

Key issues:

- i) Need for integration of early warning systems in the national and regional disaster risk reduction plans?
- ii) Need for a multi-stakeholder approach to the development of the national early warning and response plans? Need for identification of roles and responsibilities of different agencies?
- iii) Need for incentive mechanisms for collaboration and coordination across agencies, sectors and at different government levels (national to local)?
- iv) Need for legislations and legal framework for enforcing roles and responsibilities?

- v) Who are the major stakeholders? Importance of multi-stakeholders' participation?
- vi) Need for capacity building, resources, and expertise (facilities, staff, training) for organisational strengthening? Need for cross-agency collaboration and training?
- vii) Need for cross-sectoral utilisation of early warning information?
- viii) Financial challenges and implications for countries and donors for capacity building in early warning systems and sustainability of systems?
- ix) Specific needs and challenges for developing and least developed countries.
- x) Identification and prioritisation of governance and organisational issues for strengthening early warning systems.
- xi) Identification and prioritisation of regional and international activities (e.g. capacity building, advocacy, standardization, progress monitoring and reporting, etc.) in support of strengthening national early warning systems.

Background documentation for Session I:

- [Hyogo Framework for Action: Building the Resilience of Nations and Communities to Disasters](#) (World Conference on Disaster Reduction, 18-22 January 2005, Kobe)
- [Global Survey of Early Warning Systems: An assessment of capacities, gaps and opportunities toward building a comprehensive global early warning system for all natural hazard](#) (Third International Early Warning Conference, 27-29 March 2006, Bonn)
- Filipe Lucio : [Challenges and Issues for Implementation of Multi-Hazard Early Warning Systems for Integrated Risk Reduction in Developing and Least Developed Countries](#)
- Mostafa Mohaghegh : [Early Warnings and Late Reactions? Challenges and Opportunities for Effective National and Global Early Warning Systems](#)

11.15 – 11.45 Coffee break: Bar – ground floor (just above the spiral staircase)

11.45 – 13.00 SESSION II: Risk Identification and Linkages to Early Warnings (Room C1)

Co-chairs: Dr Maxx Dilley (UNDP)
& Dr Carlos Costa-Posada (Instituto de Hidrologia y Estudios Ambientales, Colombia)

Panellists:

- Mr Pascal Peduzzi (UNEP)
[Emerging Issues and New Risk Patterns: What is Needed for Identifying Risk?](#)
- Dr Steve Zebiak (International Research Institute for Climate and Society (IRI), USA)
[Adding Risk Information to Early Warnings for Decision-Support.](#)
- Dr Hussein Gadain (Famine Early Warning Systems (FEWS), Kenya)
[How Risk Identification is Linked to Early Warnings: Tana River Example.](#)
- Dr David Green (National Oceanic and Atmospheric Administration, USA)
[Role of Technical Agencies Responsible for Hazard monitoring, Observations, Data and Analysis.](#)
- Mr Paolo Reggiani (WL Delft Hydraulics, Netherlands)
[Flood Risk Assessment for Emergency Preparedness and Response.](#)

Format of the Session:

- Co-Chairs to present key issues, goals and objectives of *Session II* and *Working Group A* (10 minutes)
- 10-minute presentations by each panellist (50 minutes)
- Discussion session and Summary by Co-Chairs (15 minutes)

Key issues:

- i) What role does evidence on disaster risks play in disaster risk reduction policies and decision-making?
- ii) What are the practical challenges of risk identification (assessment) at the country level, particularly in high-risk countries?
- iii) What are the challenges particular to assessing and quantifying risks of different hazards at the country level?
- iv) Who are the major stakeholders in risk identification and management? Importance of coordination and partnerships?
- v) What is the linkage between risk information and development of early warnings? How can risk information be incorporated in warning messages?
- vi) What synergies do exist in risk identification mechanisms for different hazards? What does multi-hazard approach to risk identification mean? What economies and synergies could be realized through a multi-hazard approach to risk identification for enhancing warnings? How can viability of such approach be demonstrated?
- vii) Governance and organisational aspects?

- viii) Specific needs and challenges for developing and least developed countries.
- ix) Identification and prioritisation for actions for risk identification at national level in support of early warning systems?
- x) Identification and prioritisation for actions at regional and international level to support strengthening of national capacities for risk identification?

Background documentation for Session II and Working Group A:

- Maxx Dilley: *Risk Identification, a Critical Component of Disaster Risk Management*, WMO Bulletin 55 (1), Jan 2006
- Maxx Dilley, Robert S. Chen, Uwe Deichmann, Arthur L. Lerner-Lam, Margaret Arnold, Jonathan Agwe, Piet Buys, Oddvar Kjekstad, Bradfield Lyon and Gregory Yetman: *Natural Disaster Hotspots: a Global Risk Analysis*, The World Bank and Columbia University, March 2005

13.00 – 14.00 Lunch - WMO Cafeteria - Attic level (sitting reserved in Room D for symposium participants)

14.00 – 15.30 SESSION III: Technical and Operational Capacities for Observing, Detecting, Monitoring, Forecasting and Warnings of Hazards (Room C1)

Co-chairs: Mr Dieter Schiessl (WMO)
& Ms Zoe Trohanis (The World Bank)

Panellists:

- Dr Alan Douglas (UK Met Office, UK)
Status of Existing Observing Networks for Weather-, Water-, and Climate-Related Hazards: Gaps and Needs in Current Observing Networks.
- Dr David Burridge (Former Executive Director of ECMWF, UK)
Modelling and Forecasting Technologies for Hydro-Meteorological Events from the Next Hour to Climate Time Frames: Gaps and Needs for Enhancing Forecasting Capabilities and Technologies.
- Mr Curtis Barrett (National Weather Service, USA)
Viability of a Multi-hazard Approach to Operational Regional Centre in Support of Early Warning Systems.
- Dr Patricio Bernal (UNESCO-IOC)
Tsunami Early Warning System: Viability of a Multi-Hazard Approach for Enhanced Coastal Risk Management.
- Dr Masahiro Yamamoto (Seismological & Volcanological Dept, Japan)
Status of Early Warning Systems for Geological Hazards: Gaps, Needs and Challenges.
- Mr Filipe D. F. Lucio (Instituto Nacional de Meteorologia, Mozambique)
Status of Scientific and Technical Capacities in Developing and Least Developed Countries in Support of Early Warning Systems: Needs, Gaps and Challenges.

Format:

- Co-Chairs to identify key issues, goals and objectives of *Session III* and *Working Group B* (10 minutes)
- 10-minute presentations by each panellists (60 minutes)
- Discussion session and Summary by Co-Chairs (20 minutes)

Key issues:

- i) Taking stock - Which hazard-specific early warning systems are in existence? Who are the stakeholders and partners? What are their coordination mechanisms? Which are the major deficiencies, if any?
- ii) What are the implications of a multi-hazard approach for existing systems? Would they need to change, and if so, how?
- iii) Can we identify synergies and economies that may be achievable through a multi-hazard approach?
- iv) Which governance and organizational aspects are particular to multi-hazard early warning systems?
- v) Can we show that the basic infrastructure for observations and information exchange could be more efficiently used in a multi-hazard approach?
- vi) Are there multi-hazard multi-disciplinary potentials for development of hazard forecast and outputs (e.g. numerical weather prediction models, flood forecasting models, etc.)?
- vii) Is there a conceptual difference between regional and national multi-hazard approach?
- viii) What are the challenges and needs of developing and least-developed countries with respect to development and sustainability of technical capacities for multi-hazard early warning systems? What should be the priorities for strengthening their infrastructure for early warning systems? Can synergies and economies be achieved through enhanced collaboration at regional level? Does a

multi-hazard approach open up new opportunities for developing countries and least developed countries?

Background documentation for Session III and Working Group B:

- John Kelly: *The Global Observing System: its impacts and future*
- Susan Barrell: *Benefits, challenges and issues of multi-hazard approach to observing networks*
- WMO-HWR: *Benefits, challenges and issues of multi-hazard (e.g. hydro-meteorological) approach for the development of warnings*

15.30 – 16.00 Coffee break: Bar – ground floor (just above the spiral staircase)

16.00 – 17.30 Parallel Working Groups A and B

<p>WORKING GROUP A: Risk Identification and Linkages to Early Warnings</p> <p>Co-chairs: Dr Maxx Dilley (UNDP) & Dr Carlos Costa-Posada (Colombia)</p> <p>Discussion format</p> <p>Room: C2</p>	<p>WORKING GROUP B: Technical and Operational Capacities for Observing, Detecting, Monitoring, Forecasting and Warnings of Hazards</p> <p>Co-chairs: Mr Dieter Schiessl (WMO) & Ms Zoe Trohanis (The World Bank)</p> <p>Presentation by Dr Philippe Dandin (10 min)</p> <p>Discussion format</p> <p>Room: C1</p>
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17.30 Closing of the meeting for Day 1.

17.30 – 18.00 Meeting of Co-Chairs to integrate recommendations of Sessions I, II, III and Working Groups A and B in a draft outcome document.

18.00 – 20.00 Welcome Cocktails (sponsored by WMO) WMO Cafeteria – Attic

Day 2 - Wednesday, 24 May 2006
(Room: C1-C2)

9.00 – 10.30 SESSION IV: Communication and Dissemination Mechanisms (Room C1)

Co-chairs: Ms Tanja Cegnar (Slovenia Environmental Agency)
& Mr Jean-Michel Rainer (WMO, to be confirmed)

Panellists:

- Telecommunication Infrastructures and Mechanisms:

- Dr Cosmas Zavazava (ITU)
National Challenges and Needs for Emergency Communication.
- Mr Fredrick Branski (NOAA, USA)
Global Communication Needs for multi-hazard data and information at International and Regional levels in support of National Early Warning Systems.
- Mr Pierre-Alexandre Genillon (WorldSpace France)
Satellite-Based Technologies for the National and Regional Dissemination of Early Warnings and Related Critical Data and Information.

- Communication and Information Sharing:

- Mr José Rubiera (Met Service of Cuba)
Experience of Cuba in Early Warnings.
- Ms Eunice Mucache (Mozambique Red Cross Society)
Disseminating messages to vulnerable communities.
- Ms Haleh Kootval (WMO)
Critical Need for Education, Training and Public Outreach Programmes between Technical Agencies, and their Stakeholders (Emergency Preparedness Authorities, Media, other Relevant National Agencies).

Format:

- Presentation by Chairperson to identify key issues, goals and objectives of *Session IV* and *Working Group C* (10 minutes)
- 10-minute presentations by each panellist (60 minutes)
- Discussion session (input from the audience and summary of recommendations) (20 minutes)

Key Issues:

- i) Need for proven operational telecommunication mechanisms at international and regional levels for exchange of critical data and information in support of early warnings for multi-hazards? Issues, needs, challenges, capabilities.
- ii) Need for alert mechanisms to get the early warning messages to local communities for all hazards posing risk to the communities? Need for alignment of these mechanisms with national needs, resources, and culture (e.g., ranging from utilisation of technologies to volunteers at national to local levels).
- iii) Challenges of developed and developing countries, related to resource requirements for development of warning communication and dissemination capabilities?
- iv) Who are the major stakeholders? Importance of coordination and partnerships?
- v) Need for integration of risk information in hazard warning messages? Challenges, gaps and needs?
- vi) Need for collaboration of technical agencies responsible for development of hazard warnings with agencies involved in risk assessment and emergency response to develop understandable warning messages?
- vii) Need for single, authoritative source for warnings to avoid confusion? Who is responsible for disseminating warnings of which hazards? Centralized versus decentralized approach?
- viii) Role of community-based agencies, volunteers, media in dissemination of warnings to the public at risk? Critical importance of for ensuring credibility of the information and source of warning?
- ix) Need for cross-training between the technical agencies responsible for development of hazard warnings and agencies involved in dissemination of information and emergency preparedness and response authorities?
- x) Are there economies and synergies that can be achieved through a multi-hazard approach to communication and alert systems?
- xi) Need for public understanding of the warning messages?
- xii) Specific needs and challenges for developing and least developed countries.
- xiii) Identification and prioritisation for actions to address gaps and needs in communication and dissemination of warnings at national level?
- xiv) Identification and prioritisation for actions at the regional and international levels for strengthening national capacities for communication and dissemination of warnings?

10.30 – 11.00 Coffee break: Bar – ground floor (just above the spiral staircase)

11.00 – 12.30 SESSION V: Integration of Risk Information and Early Warnings in Emergency Preparedness, Planning and Response (Room C1)

Co-chairs: Mr Ricardo Mena (OCHA)
& Dr Horst Letz (IFRC)

Panellists:

- Ms Eunice Mucache (Mozambique Red Cross Society)
Integrating Early Warnings in Disaster Preparedness and Response Plans.
- Dr Françoise Bénichou (Météo-France) & Mr Jean-Michel Tanguy (SCHAPI)
Lessons Learned from France's Vigilance System for Enhanced Emergency Preparedness and Response.
- Dr Juan Carlos Villagran de Leon (Institute for Environment and Human Security, UNU)
The Anticipated Response: an Essential Element in End-to-End Community-Early Warning Systems.
- Ms Joanne Burke (UNDP Disaster Management Training Programme)
Tentative: Lessons Learnt through UNDP's Capacity Building Programme for Disaster Risk Reduction and Opportunities for Capacity Building in Early Warning Systems.
- Mr Kazuhiko Fukami (International Centre for Water Hazard and Risk Management)

Format:

- Co-Chairs to identify key issues, goals and objectives of Session V and Working Group D (10 minutes)
- 10-minute presentations by each panellist (60 minutes)
- Discussion session and Summary of Co-Chairs (20 minutes)

Key Issues:

- i) Needs for hazard and risk information for development of national to local emergency preparedness and response mechanisms?
- ii) Who are the major stakeholders? Importance of coordination and partnerships?
- iii) Need for integration of early warnings in emergency preparedness and response? Understanding of warnings, lead-times and early planning and response actions?

- iv) Need for readiness level mechanisms (traffic light concept based on potential risk of emerging hazards) Need for simulation exercises and emergency drills for responding to warnings?
- v) Linkage between operational technical agencies responsible for monitoring and issuance of hazard warnings and authorities and agencies responsible for disaster preparedness? Need for development of understandable warning messages, emergency plans and response coordination and action? Need for coordination, collaboration and training among these agencies at the operational level.
- vi) Are there economies and synergies that can be achieved through a multi-hazard approach in the integration of risk knowledge and warnings for emergency preparedness and response?
- vii) Need for public awareness and education in high-risk areas?
- viii) Need for regional and international coordination for integration of alerts for enhanced international humanitarian response
- ix) Governance and organisational aspects?
- x) Specific needs and challenges for developing and least developed countries.
- xi) Identification and prioritisation for actions to address gaps and needs for integration of warnings in emergency planning and preparedness at national level?
- xii) Identification and prioritisation for actions at the regional and international levels for strengthening national capacities for integration of warnings for enhanced emergency planning and preparedness?

Background Documentation for Session V and Working Group D:

- Ricardo Mena: [Integration of Risk Information and Early Warnings in Emergency Preparedness, Planning and Response](#)
- Horst Letz: [Community-Based Preparedness and Response to Multi-Hazard Early Warning](#)
- WMO-HWR: [Building Resilience through Community Participation: A Report on the Pilot Project on Community Flood Management in Bangladesh, India and Nepal](#)

12.30 – 13.30 Lunch - WMO Cafeteria - Attic level - (sitting reserved in Room D for symposium participants)

13.30 – 15.00 Parallel Working Groups C and D

<p>WORKING GROUP C: Communication and Dissemination Mechanisms</p> <p>Co-chairs: Ms Tanja Cegnar (Slovenia) & Mr Jean-Michel Rainer (WMO)</p> <p>Discussion format</p> <p>Room: C2</p>	<p>WORKING GROUP D: Integration of Risk Information and Early Warnings in Emergency Preparedness, Planning and Response</p> <p>Co-chairs: Mr Ricardo Mena (OCHA) & Mr Horst Letz (IFRC)</p> <p>Discussion format</p> <p>Room: C1</p>
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15.00 – 15.30 Coffee break: Bar – ground floor (just above the spiral staircase)

15.30 – 17.15 SYNTHESIS SESSION: Review of the Outcomes of Sessions and Working Groups and Finalisation and Prioritization of Recommendations. (Room C1)

Chair: Professor Hong Yan, Deputy Secretary-General of WMO

Presentations by Chairpersons from all four Working Groups (15 minutes each) followed by discussions (10 minutes) after each presentation. Final discussions and follow up actions.

17.15 – 17.30 Official Closing of the Symposium

Professor Hong Yan, Deputy Secretary General of WMO

Please note that the Symposium will be conducted in English only.