Global Platform
for Disaster Risk Reduction
Third Session, Geneva, Switzerland
8-13 May 2011

Name of Event: [Side Event] Saving Lives and Improved Coastal Risk Management through Regional Cooperation in Ocean and Marine Related Early Warning Systems
Date of Event: May 10, 2011
Reporter: Dr. Maryam Golnaraghi, Chief of DRR, WMO
Contact Details: mgolnaraghi@wmo.int / +41 22 730 8006

Organizers: World Meteorological Organization, Economic and Social Commission of Asia and the Pacific (ESCAP), UNESCO-IDC, International Group on Win-Related Disaster Risk Reduction (IG-WRDRR)

Speakers:

- Dr. Maryam Golnaraghi, WMO (Facilitator)
- B. Y. Lee, Hong Kong Observatory "Key issues in ocean and marine related Early Warning Systems in Asia"
- Amir Mohyuddin, Director Mitigation and Preparedness, Disaster Management Authority Pakistan, " Disaster Mitigation and Preparedness in Pakistan"
- Yukio Tamura, Chairman, International Group for Wind-Related Disaster Risk Reduction, "Saving of Lives and Improved Coastal Risk Management through Regional Cooperation in Ocean and Marine Related Early Warning Systems in Asia"
- Atsushi Koresawa, Asian Disaster Reduction Center, "Great East Japan Earthquake"

1) Outline

The issues addressed included: (i) Components of effective early warning systems (EWS) and need for institutional coordination at national to regional levels, with multi-stakeholder and multi-hazard approach; (ii) Challenges with development and sustainability of EWS as a critical component of effective national disaster risk reduction strategies and the need for clear policies, legal frameworks and budgeting at national to local levels; (iii) Importance of coordination and leveraging of bi-lateral and multi-lateral cooperation projects for the longer term development and sustainability of EWS; (iv) Examples of key lessons learned from effective EWS and national and regional cooperation related to marine and ocean related hazards (tropical cyclone and storm surges, tsunamis, etc.) in Asia; (v) Components of effective coastal zone management linked to reduction of risks associated with ocean and marine related hazards and building better community resilience, and, (vi)

Importance and benefits of education at various levels and targeted at different stakeholders and awareness campaigns.

2) Key messages, outcomes, recommendations

- There is need for strong political recognition of the benefits of EWS reflected in harmonized national to local disaster risk management policies, planning, legislation and budgeting at national to local levels. EWS should be designed with consideration for long-term sustainability of the system building on institutional structure and capacities, available resources, socio-economic and cultural factors. Implementation of EWS requires multi-agency, multi-sector coordination with roles and responsibilities of the various agencies and coordination mechanisms clearly defined and documented within national to local plans, legislation, directives, MOUs, etc.

- Effective EWS are built upon four components: (i) hazard detection, monitoring and forecasting with particular attention to understanding of sources and dynamics of hazards; (ii) analyzing risks and incorporation of risk information in emergency planning and warnings; (iii) disseminating timely and "authoritative" warnings; and, (iv) community planning and preparedness.

- Hazard, exposure and vulnerability information are used to carry-out risk assessments at different levels, as critical input into emergency planning and development of warning messages. The messages should be (i) clear, consistent and include risk information, (ii) designed with consideration for linking threat levels to emergency preparedness and response actions (e.g., using colour, flags, etc) and understood by authorities and the population, (iii) issued from a single (or unified), recognized and "authoritative" source. Warning dissemination mechanisms should be able to reach the authorities, other EWS stake-holders and the population at risk in a timely and reliable fashion. Emergency response plans should be developed with consideration for hazard/risk levels, characteristics of the exposed communities, and standard operating procedures should be developed among agencies at national to local levels to support activation of these plans. Feedback and improvement mechanisms should be in place at all levels of EWS to ensure system improvement over time.

- National EWS must be supported with strong technical regional cooperation for monitoring, detecting and forecasting of large scale hazards such as hurricanes and tsunamis as no single country can build alone all the required capabilities. While significant regional cooperation, and regional operational capacities have been developed for tropical cyclones and tsunamis, there remain a number of areas that require further cooperation and investigation, such as sources of tsunamis, further technical development for forecasting of storm surges,

mapping of coastal bathymetries and correlations and forecasting of inter-connected hazards such as tropical cyclones and related severe winds, storm surges, coastal flooding, tornados, land and mud slides.

- Early warning systems are a component of a comprehensive risk reduction strategy and must be complemented with other risk reduction initiatives in the coastal zones, such as zoning, and strengthening of community resilience, of which an important aspect would be well designed infrastructure and buildings. Building community resilience must be accompanied by educational and training programmes at all levels targeting the policy-makers, operational agencies, local government and the public in at-risk communities, particularly through schools and special programmes for children

3) Conclusions

Advancements in monitoring of a number of hydro-meteorological and geological hazards combined with political will and development of emergency preparedness capacities in a number of hi-risk countries led to development of effective early warning systems, with clearly demonstrated benefits in saving lives. Development of EWS must be considered with a multi-hazard approach, and sustainability of the systems over time, thus must be part of the comprehensive national disaster risk reduction programmes supported through effective policy, legal framework, resources and institutional coordination at national to local levels. Education of the communities and general public are critical factors, where many countries such as Bangladesh, Cuba, and Pakistan have been actively working on, engaging the public and volunteers as part of the system for dissemination of warnings from national authorities to the local communities. While significant progress has been made in the technical and operational aspects of forecasting and warnings, there is need for further investments in understanding the sources of hazards, improving forecasting and lead-times strengthening or development of effective standard operating procedures among agencies at national to local level and strengthening risk awareness.

4) Reference

Maryam Golnaraghi, Douris J, and Baubion, C, 'Good practices in multi-hazard early warning systems' Risk Returns, Tudor Rose Publications, pp. 95-97