Outcomes of the Technical Workshop on Multi-Hazard EWS at the XVth Session of Regional Association III (RA III)
September 20-21, 2010-09-22 Bogota, Colombia

In South America (WMO Regional Association III – RA III), between 1980 and 2007, nearly 87% of disasters, 66% of casualties and 80% of economic losses related to natural hazards were caused by recurrent meteorological-, hydrological- and climate-related events (EM-DAT). Based on a survey conducted by WMO-Disaster Risk Reduction (DRR Programme in 2006, among hazards of concern to countries in South America include floods (river flooding, flash floods and coastal flooding), strong winds, drought, forest and wild fires, thunderstorms and lightning, heat and cold waves, hailstorms, earthquakes and tsunami, landslides and mudslides and volcanic eruption. Particularly the link to the El Nino SouthernOscillation Cycles (ENSO) and link to the hydro-meteorological hazards was highlighted.

During the Technical Workshop of the RAIII-XVth session (September 20 – 21, 2010) the foundation of effective Disaster Risk Management based on the Hyogo Framework for Action 2005-2015 was discussed. It was noted that effective disaster risk management particularly pertaining to the role of the National Meteorological and Hydrological Services (NMHS) are founded on several fundamental principals:

(1) Strategic positioning of the NMHS within the national to local DRM governance and institutional multi-sectoral frameworks (policy, planning, legislation and budgetary aspects);
(2) Integrated approach to deliver multi-hazard technical capacity development of the NMHS and facilitation of multi-sectoral partnerships and service delivery to a wide range of DRM stakeholders to support:

(i) Risk assessment at national to local levels by providing hazard information, analysis and mapping;
(ii) Reduction of mortality risks through early warning systems (EWS) with Multi-Hazard approach;
(iii) Reduction of economic risks through medium- to long-term sectoral risk management and planning (e.g., land zoning, infrastructure and urban development, agricultural management, health, etc.) through provision of relevant climate services;
(iv) Risk transfer through catastrophe and weather-indexed insurance and other financial tools through provision of hazard information, historical statistical analysis and forward looking climate analysis and forecasting;
(v) Information/knowledge sharing and educational programmes at various levels and with multiple agencies.

While NMHS play a critical role in all aspects of effective disaster risk management and risk reduction framework, this workshop addressed the role of NMHS in multi-Hazard EWS. Effective early warning systems (EWS) have four components including: (1) detecting, monitoring and forecasting hazards; (2) analysing risks; (3) disseminating timely warnings, which should carry the authority of government; (4) activating emergency plans to prepare and respond. These four components need to be underpinned by clear policies, legal frameworks and budgetary/resourcing considerations at national to local levels and at the preparedness and operational levels require coordination across many agencies at national to community levels for the system to work. Failure in one component or lack of coordination across them would lead to the failure of the whole system. Based on presentations from a number of countries of good practices, followed by presentations from countries in RAIII, during the two-day Workshop the participants:

(1) Exchanged experiences and discussed lessons learnt from countries with good practices in MHEWS;
(2) Assessed national capacities and gaps related to planning, legislative, institutional and operational aspects of EWS;
(3) Discussed the existing regional initiatives in support of disaster risk reduction and particularly EWS;
(4) Identified and prioritized concrete areas for development and cooperation at national and (sub) regional levels in EWS with multi-hazard approach.

On the basis of the responses of countries to a Multi-Hazard EWS questionnaire, distributed to all Members prior to the Technical Workshop and discussions at the workshop, the following concrete recommendations emerged:

- Need for strengthening of disaster risk management and emergency preparedness coordination frameworks and governance as linked to MHEWS, particularly linking national to sub-national (regional) and local levels. It was noted that in most countries the national policy and legal frameworks were established and role of various ministries and institutions clearly identified, however, these policies and legal frameworks needs to be revised and improved to ensure effectiveness of effective and coordinated multi-sectoral approach to MHEWS;
- Strengthening observing networks on (near) real-time basis with in regional coordination, harmonization, interoperability and data sharing with in RAIII;
- Need for capacity development in risk assessment and modeling for hydro-meteorological hazards to support EWS and emergency management with considerations for risks associated with climate variability and change. Risk assessment and mapping at national to local level is the foundation for effective risk management policies and operational planning. In this regard, from the perspective of NMHS, the need for maintenance of standard databases, metadata for natural hazards (Type I, II and III), data rescue of hazard databases, and training on latest tools and methodologies for statistical hazard analyses and forward looking climate forecasting and trend analysis of extreme events was stressed. It was noted that there is need for strengthening technical cooperation of NMHS with agencies and institutions that maintains vulnerability and exposure information (e.g., population density, crop information, health, buildings and infrastructure) to enable the country to produce risk information;
- Strengthening of operational forecasting capacities for hydro-meteorological and marine-related hazards particularly through expansion of regional cooperation programmes for benefit of all countries in RAIII building on projects such as the Virtual Facility for Severe Weather forecasting currently engaging Brazil, Argentina, Uruguay and Paraguay, or the Climate Center engaging CIEFIN and Colombia and countries Andean Countries ;
- Strengthening of warning dissemination mechanisms particularly highlighting the link to Media as well as simple solutions for remote regions such as shortwave radio, service delivery, and development of operational cooperation reflected through quality management systems and Standard Operating Procedures (SOPs) engaging NMHS, DRM agencies, Media and other stakeholders;
- Improving national watch and warning systems, and exploring possible harmonization and coordination in the region particularly pertaining to trans-boundary large scale hazards;
- Need for development of a coordinated approach across the agencies and levels (national to local) in the countries for collecting systematic feedback to improve the systems after each event in all countries;
- Educational programmes in MHEWS targeted at the public and officials as well as training programmes engaging the NMHS and the DRM agencies, the Media and other stakeholder in MHEWS;
- The importance of strengthened regional cooperation in data exchange, technical capacity transfer and exchange and coordination with other agencies was very strongly stressed and supported by participants;
- Finally the importance of medium and long-term sectoral planning (land zoning, infrastructure retrofitting and development on basis on building codes, agricultural planning, etc) and the insurance markets (e.g., for property and agriculture) for reducing the major economic impacts of hydro-meteorological hazards in RA III , and opportunities for climate information and services that NMHS and Regional Climate Centers could provide was strongly stressed with a call for development and strengthening of these services nationally and regionally.