

## **DISASTER PREVENTION AND MITIGATION PROGRAMME**

*(Submitted by WMO)*

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### **Summary and purpose of document**

This document provides CGMS with information on matters related to the implementation of the WMO Natural Disaster Prevention and Mitigation Programme, and outlines key actions for the consideration by CGMS.

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### **ACTION PROPOSED**

CGMS is invited to:

- (a) Review in detail the latest developments related to WMO Disaster Prevention and Mitigation Implementation;
- (b) Review and discuss key areas of activities of the DPM Programme and actions such as enhancement early warning systems, and risk management capabilities (with in a multi-hazard approach) pertinent to the activities of CGMS and areas of collaboration with the DPM Programme with the goal to strengthen disaster risk reduction in South western Indian Ocean;
- (c) Propose any other appropriate measures to advance the activities under the CGMS programme in support of disaster prevention and preparedness.

## DISCUSSION

### Natural Disaster Prevention and Mitigation Programme Implementation

1. Congress XIV (Geneva, May 2003) through Resolution 29 (Cg-XIV) decided to initiate a major cross-cutting Programme on Natural Disaster Prevention and Mitigation (DPM).
2. WMO contributed significantly to the successful preparation and outcome of the World Conference on Disaster Reduction (WCDR), which was held in Kobe, Japan in January 2005. The WCDR outcome is reflected in the Hyogo Declaration and Hyogo Framework for Action (HFA) 2005-2015: "Building the Resilience of Nations and Communities to Disasters" providing a vehicle to expand the international recognition of the importance of weather-, climate- and water-related information and services to disaster risk reduction". The HFA calls for an integrated, multi-hazard approach to disaster risk reduction, providing five high priority action areas, of which, one of the priorities includes "Identification, Assessment and Monitoring of Disaster Risks and Enhancement of Early Warnings". In this regard, WMO and the NMHSs are in an excellent position to take a leadership role at the national and international levels.
3. WMO has established a network of National DPM focal points and as of September 2005, 121 nominations had been received from the Permanent Representatives (PRs) of WMO.
4. The DPM Programme office in close collaboration with all relevant WMO Programmes, Regional Associations, Technical Commissions, the National Meteorological and Hydrological Services (NMHSs) and National DPM Focal Points has developed the Revised DPM Implementation Plan. With the highest priority, the DPM Programme is pursuing, i) integration of cross-cutting activities of all relevant WMO Programmes to address systematic and sustainable priorities and gaps in WMO's disaster prevention and mitigation activities in all six regions, ii) facilitation of strategic partnerships; and, iii) development of hazard mapping and risk assessment capabilities for hazards related to weather, climate and water.
5. All WMO major programmes contribute to different aspects of disaster prevention and mitigation. As its first goal, the DPM Programme aims to coordinate the activities of WMO programmes towards clear strategic goals at regional and national levels, such that WMO could enhance its contribution to disaster prevention and mitigation decision making at the national, regional and international levels. As the first step, the DPM Programme has initiated three major fact-finding projects, including:
  - "Regional level DPM Assessments" – With the goal to identify in a systematic manner key weather-, climate- and water-related hazards and to document capabilities (i.e., strengths and weaknesses), gaps and needs in WMO's core areas of activities related to observing, monitoring, forecasting and early warnings in all six WMO regions. In addition, the surveys will also address i) how effectively the products and services developed through the WMO regional structures are integrated in the disaster risk management process for different hazards in the region, ii) the linkages of the WMO regional capacities with risk management structures, iii) the need for capacity building and training, and educational and public outreach programmes at the regional level;
  - "Country level DPM Assessments" - The goal is to develop country profiles with respect to DPM related capabilities (i.e., strengths and weaknesses), gaps and needs in WMO's core areas of activities and how effectively the products and services developed by NMHSs are integrated in the disaster risk management and emergency response process for relevant hazards in their respective country;

- “Mapping of DPM activities of WMO Major Programmes” - Develop a comprehensive matrix of DPM related activities of all relevant WMO major programmes to determine scope, synergies, gaps, redundancies and related budgets.

The outcome of “Regional-level and Country-level DPM Assessments”, as well as “Mapping of DPM activities of WMO Major Programmes,” will be compiled, reviewed, and utilized through multi-disciplinary expert teams with the aim of identifying clear strategic goals and priorities for each region and develop concrete projects, which can be built with a cross-cutting approach to the activities of WMO Programmes, Regional Associations, and Technical Commissions, to address these goals in a systematic and sustainable manner. A set of DPM performance measures would be developed through multi-disciplinary expert teams to monitor the implementation and success of the projects.

6. The DPM Programme is initiating a project on “Cataloguing of Weather-, Climate- and Water-related Hazards and Their Impacts” to develop a standard methodology for collection of information about hazardous events causing damages.

7. The DPM Programme, together with relevant partners will be initiating a project on “Methodologies for Hydrometeorological Hazard Mapping and Risk Assessment,” to identify a portfolio of hazard mapping and risk assessment methodologies for weather-, climate- and water-related hazards.

8. Mechanisms to facilitate cross-cutting activities through the Regional Associations and Technical Commissions are being established. DPM Working Groups have been established in RA II and RA IV. DPM Rapporteurs have been designated within the Management Group of CBS. Within the WMO Secretariat, the Secretary-General has established a Steering Committee on Disaster Risk Reduction and all WMO programmes have designated a DPM Focal Point to work with the DPM Programme office on the DPM implementation.

9. WMO is taking a leading role in participating in the Third International Early Warning Conference (EWC III) sponsored by the Government of Germany, to be held in March 2006. Furthermore, WMO is participating in the Global Early Warning Survey, the Global Survey of the Early Warning Systems requested by the UN Secretary General, Mr Kofi Annan, in his report to the General Assembly “In Larger Freedom: towards development, security and human rights for all” (A/59/2005, 21 March 2005).

### **WMO Partnerships in the Area of Disaster Prevention and Mitigation**

10. WMO is working to strengthen its strategic partnerships with other organizations at the regional and international levels. WMO is working closely with International Strategy for Disaster Reduction through its Interagency Task Force (ISDR/IATF) in several areas.

- WMO had actively participated in all the four Working Groups of ISDR’s Inter-Agency Task Force (IATF) and encouraged Members to contribute to the work of ISDR;
- WMO continues to co-chair Working Group 1 on Climate and Disasters;
- WMO is co-chairing a new advisory group, guiding the implementation of the Global Survey of the Early Warning Systems requested by the UN Secretary General, Mr Kofi Annan.

11. WMO is also working to develop new partnerships based on the complementary roles and activities of the organizations, their value added towards advancing DPM goals, as well as contributions to the area of disaster risk reduction as a whole. The DPM Programme office in close collaboration with other WMO programmes is carrying out a systematic evaluation of potential partners through the ISDR Interagency Task Force for Disaster Reduction (ISDR/IATF),

conferences, and bilateral and multilateral meetings, and discussions are underway with several international and regional agencies (e.g., IFRC, OCHA, and Asian Disaster Reduction Center). It is urging NMHSs to seek targeted partnerships at the national level and through participation in the emerging National Disaster Reduction Platforms. Particularly, WMO will be assisting NMHSs in the Developing and Least Developed Countries (LDCs) and Small Island Developing States (SIDS), in their efforts to establish their partnerships at the national level.

### **WMO's Contribution to the Development of a Tsunami Early Warning System**

12. WMO is working together with UNESCO-IOC, ISDR and other key partners at the international, regional, and national levels to contribute its relevant capabilities to the development of end-to-end tsunami early warning systems in the Indian Ocean and other regions at risk. WMO is also committed to developing the capabilities of the National Meteorological and Hydrological Services (NMHSs) of the Indian Ocean Rim countries to establish an effective tsunami early warning system within a multi-hazard framework, particularly related to national multi-hazards alert and response mechanisms. However, the value of this effort applies not only to all the Indian Ocean Rim countries, but also to all regions at risk. WMO has developed and initiated several concrete projects and is working towards raising resources to assist its members in the region. These projects are outlined below.

13. The WMO Global Telecommunication System (GTS) will be upgraded, where needed, to address requirements for tsunami-related information exchange in the Ocean Indian Rim. The GTS already provides for the exchange of warnings related to cyclones and severe weather, including in the Indian Ocean region, and supports the current Pacific Tsunami Warning System in the Pacific basin. The GTS, including its satellite-based telecommunications sub-systems and the data collection and data distribution components of meteorological satellites, will support the exchange of tsunami warnings and related information in the Indian Ocean Rim. The WMO Global Telecommunication System is being upgraded, where needed, to address requirements for tsunami-related information exchange for the interim period and longer term. WMO held a multi-disciplinary workshop from 14 to 18 March 2005 in Jakarta, Indonesia, during which it developed a detailed plan for upgrading the GTS and identified twelve countries in need of equipment upgrades, including:

- Asia: Bangladesh, Maldives, Myanmar, and Sri Lanka;
- Arab Region: Yemen;
- Africa: Comoros, Djibouti, Kenya, Madagascar, Seychelles, Somalia, and Tanzania.

GTS Expert Teams visited the NMHSs of these countries in July through September of 2005 to identify specific GTS equipment needs of each country.

14. WMO is assisting in the enhancement of multi-hazard national warning alert mechanisms of the National Meteorological and Hydrological Services to support 24 hours per day and seven days a week (24/7) dissemination of tsunami warnings, and to raise public awareness through development of their educational and public outreach programmes to support around-the-clock dissemination of tsunami warnings to authorities, the general public and the mariners. Currently, most Indian Ocean Rim countries have designated their NMHSs as their tsunami focal point. Under the aegis of UNESCO-IOC, expert teams including tsunami experts and representatives from IOC, WMO, ISDR and other agencies have completed national assessment visits to 16 countries of which 9 are in the southwestern Indian Ocean. As the first step, WMO has carried out a preliminary survey of NMHSs to identify their needs related to enhancing warning dissemination and their education and outreach programmes. As part of the expert visits, WMO investigated the needs and requirements of the NMHSs, for dissemination of tsunami warnings as part of the multi-hazard approach.

15. WMO, through its Space Programme, is uniquely qualified as the sole intergovernmental organization responsible for the coordination of the complete global set of environmental satellites. Not only are satellite systems the only truly global observing system but they also provide for a global capability for data collection from remote sites including ocean areas, as well as the ability to disseminate information immediately to users at the local, regional and global levels. Disaster prevention and mitigation for all hazards represent an area where satellite system capabilities are a fundamental tool to increase capacity building in all countries, especially in developing countries.

16. WMO has developed a plan of action to identify specific observing capabilities presently available from existing satellite systems but not yet utilized in alert mechanisms, data collection needs, as well as contributing to dissemination systems made possible through environmental satellite systems. The improved satellite system capabilities will directly support NMHSs and other agencies. A consolidated statement of needs to which space agencies can respond will be developed through a series of regional workshop with participation by Indian Ocean Rim countries and space agencies to identify local, regional and global requirements, as well as to increase awareness of existing and planned improvements through enhanced satellite system utilization. Longer-term improvements to satellite systems will also be identified in the development of the consolidated plan.

17. WMO, together with its partners, will also ensure that the tsunami and other hazard observation and monitoring requirements are incorporated in the implementation plan for the Global Earth Observing System of Systems (GEOSS) to ensure that this critical aspect is part of the GEOSS Work Programme.

18. There is a need for a multi-hazard approach to the development of the tsunami early warning system in the Indian Ocean. However, all efforts at the regional level are solely focused on tsunami related issues. WMO continues to promote the benefits of a multi-hazard approach to the tsunami early warning system and significantly contribute to its implementation. WMO has initiated an effort to define and develop a "multi-hazard" approach to early-warning capabilities by defining synergies among the grouping of hazards.

19. WMO will take a leadership role to ensure that the tsunami early warning system in the Indian Ocean is linked with the existing tropical cyclone early warning system and storm height forecasting, activities related to tropical cyclone and storm surge related flood forecasting to ensure that these early warning systems are linked, when appropriate, to maximize the benefits of these capabilities for the saving of life and property in the coastal regions. To this end, WMO is planning a first meeting in Fall 2005 to bring experts from the tropical cyclone and storm surge forecasting community, hydrological experts in coastal and river flooding together with tsunami and coastal zone management experts. Details of this meeting will be available in early October.

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