Oceania
(Regional Association V)

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Working Group on DPM

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Agenda

- Impacts of hazards
- Preliminary results of the WMO country-level DPM survey
- Preliminary results of the WMO regional-level DPM survey
- Opportunities and recent initiatives for implementation of the Hyogo Framework for Action (HFA), and key partners
- Regional activities and capacities available through WMO network (RSMCs and RTCs)

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Impacts of hazards in Oceania

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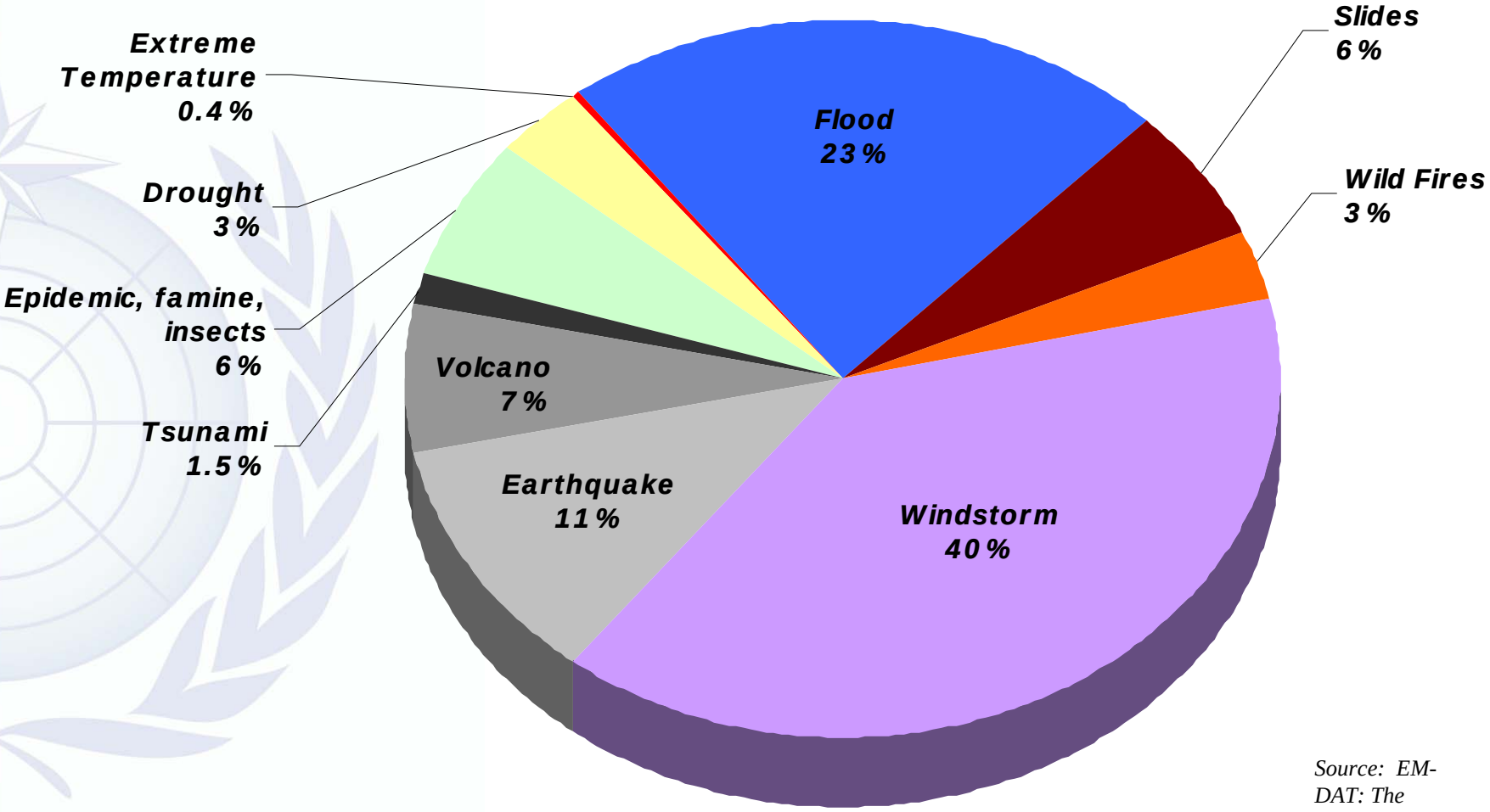
Number of Disasters (1980-2005)



Source: EM-DAT: The OFDA/CRED International Disaster Database - www.em-dat.net - Université Catholique de Louvain - Brussels - Belgiumc

More than **80%** of disasters are related to hydro-meteorological factors.

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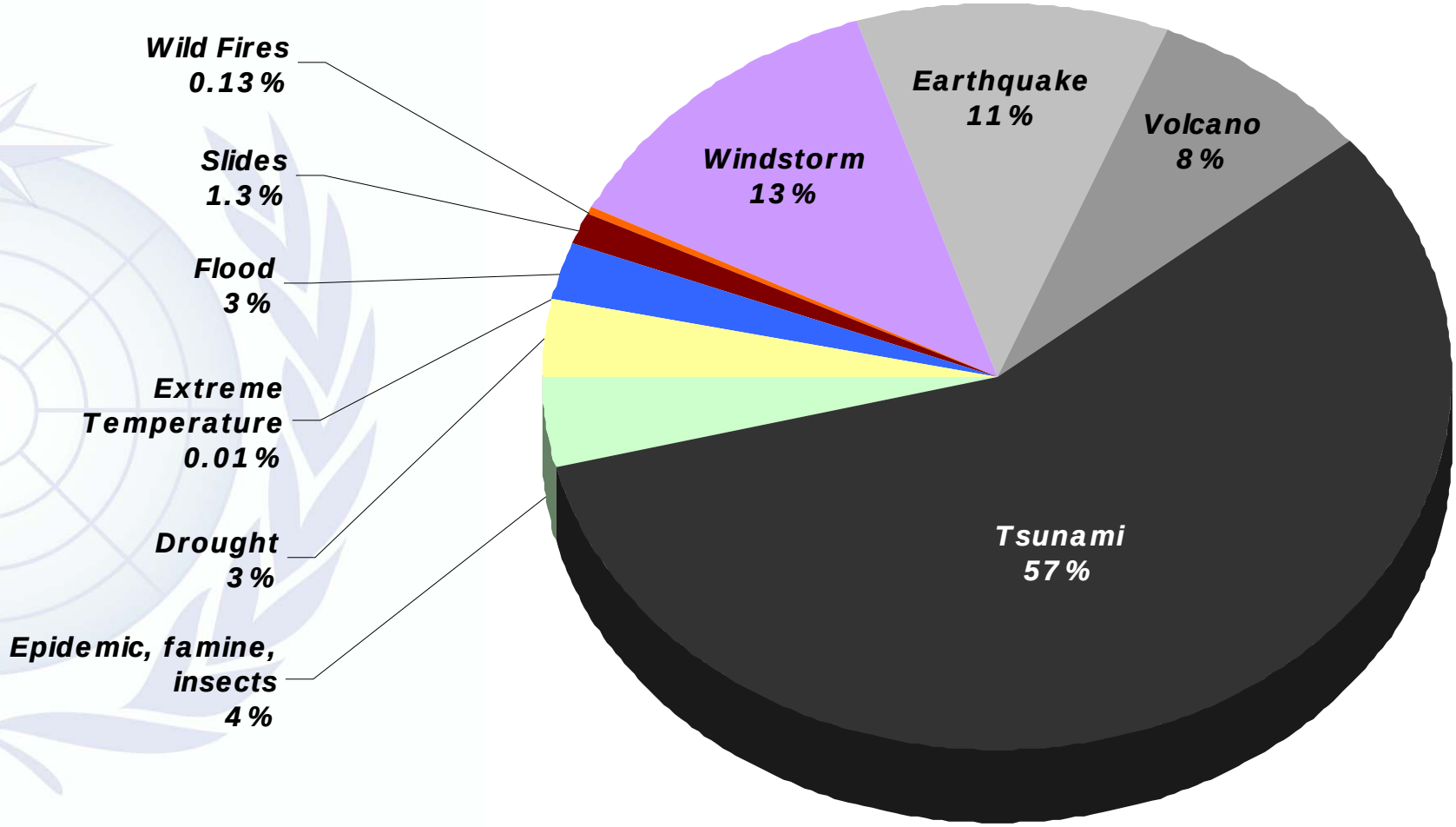
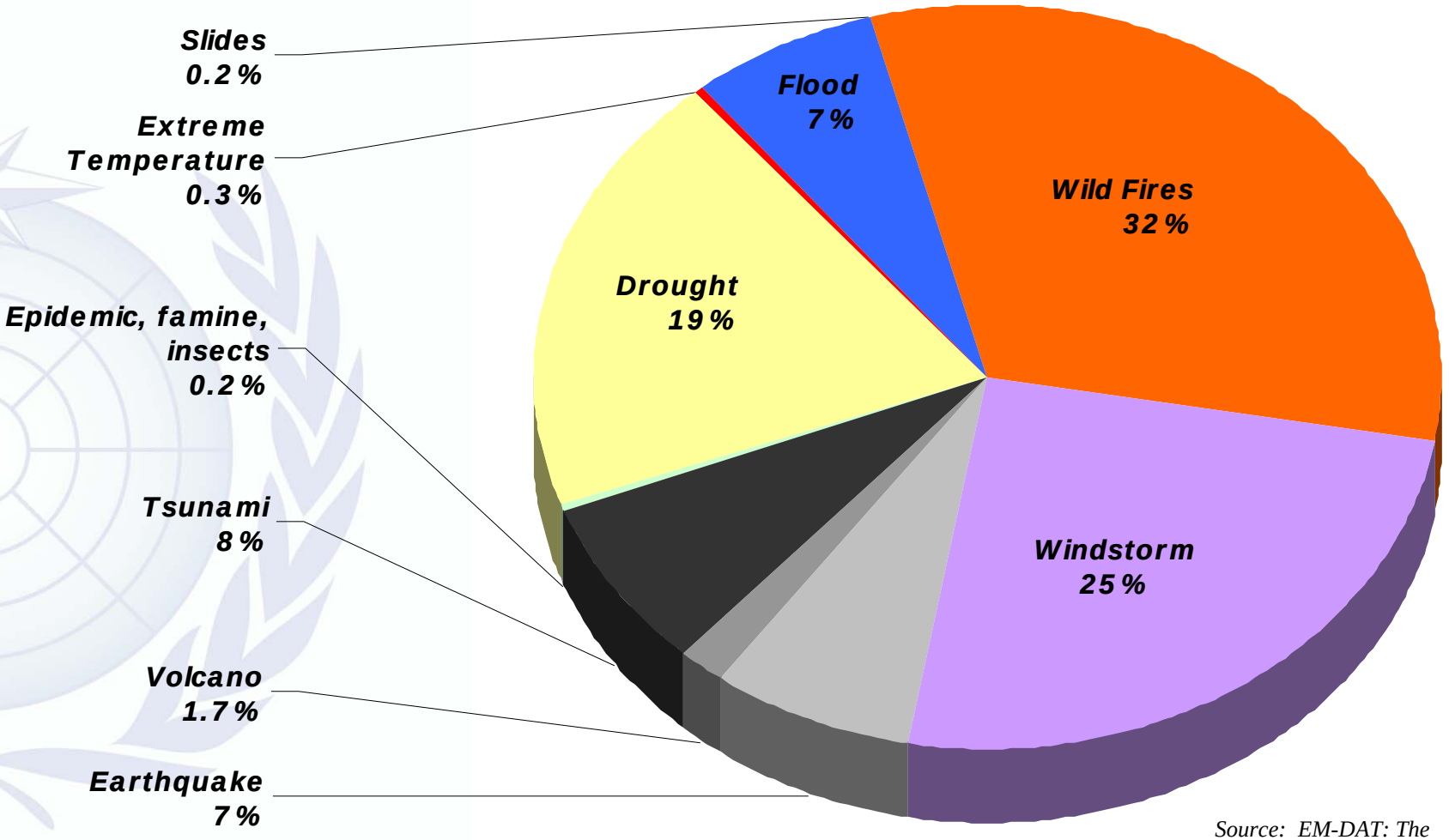
Loss of Human Life (1980-2005)



24% of loss of life are related to hydro-meteorological factors

Source: EM-DAT: The OFDA/CRED International Disaster Database - www.em-dat.net - Université Catholique de Louvain - Brussels - Belgium

Economic Losses (1980-2005)



Source: EM-DAT: The OFDA/CRED International Disaster Database - www.em-dat.net - Université Catholique de Louvain - Brussels - Belgium

More than **80%** of economic losses are related to hydro-meteorological factors

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Preliminary results of the WMO country-level DPM survey in RA V (Oceania)

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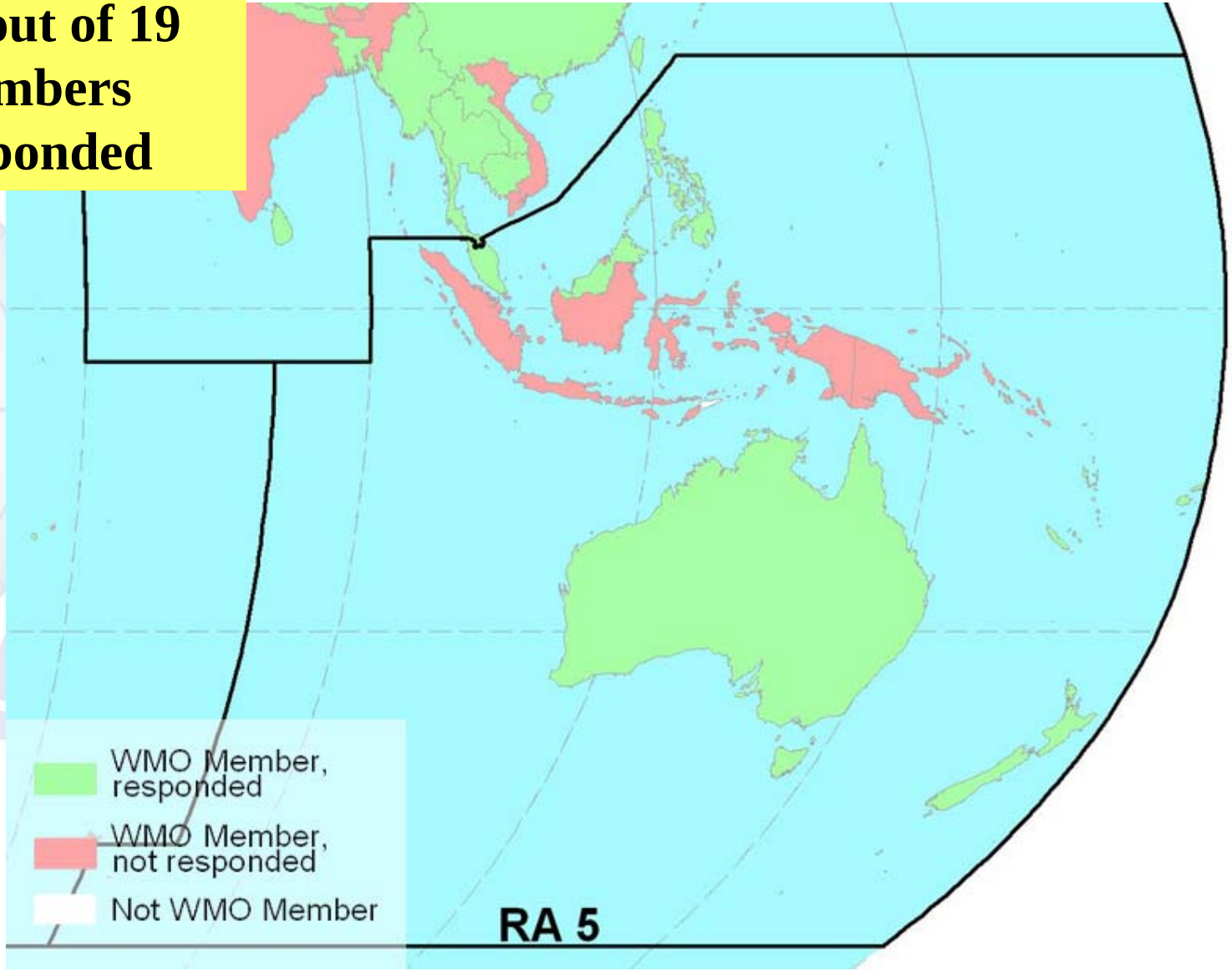
Responses to the WMO Country-Level DPM Survey in Oceania

14 out of 19 Members responded



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Ranking of the hazards from the country-level survey

Hazard	Countries affected (out of 14)
Strong winds	14
Tropical cyclone	13
Flash flood	12
Thunderstorm or lightning	11
Coastal flooding	10
Drought	10
Storm surge	10
River flooding	9
Tsunami	9
Landslide or mudslide	8
Earthquakes	7
Forest or wild land fire	7
Marine hazards	7
Volcanic events	7
Hailstorm	5
Hazards to aviation	5
Smoke, Dust or Haze	5
Tornado	5
Airborne substances	4
Heat wave	4
Waterborne hazards	4
Dense fog	2
Avalanche	1
Desert locust swarm	1
Heavy snow	1
Cold wave	
Freezing rain	
Sandstorm	

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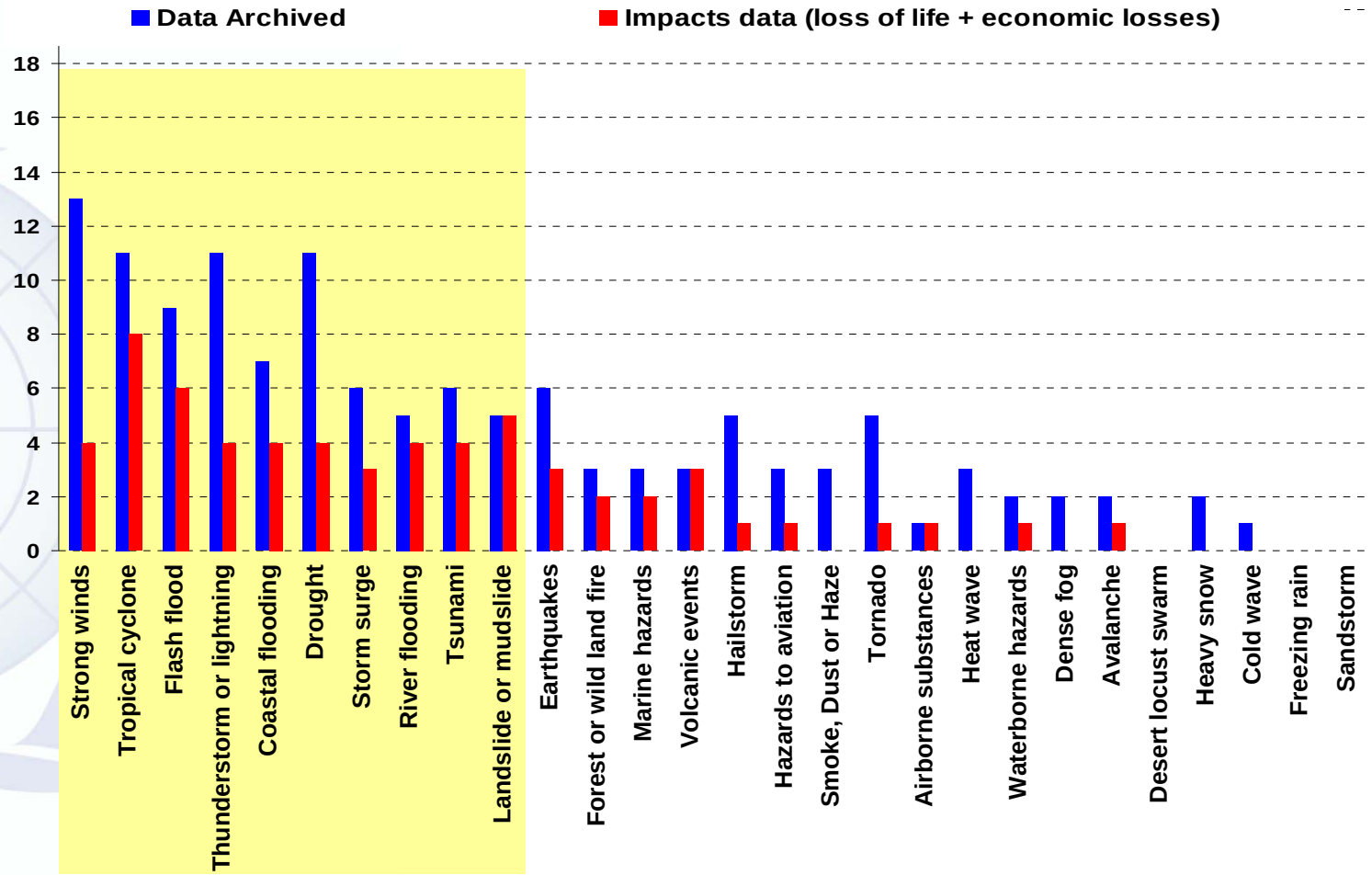
Number of countries keeping data archives

HIGH IMPACT → LOW IMPACT



- **Very few countries maintain impact databases**
- **Need for strengthening National Meteorological and Hydrological Services' capacities for hazard data archiving**

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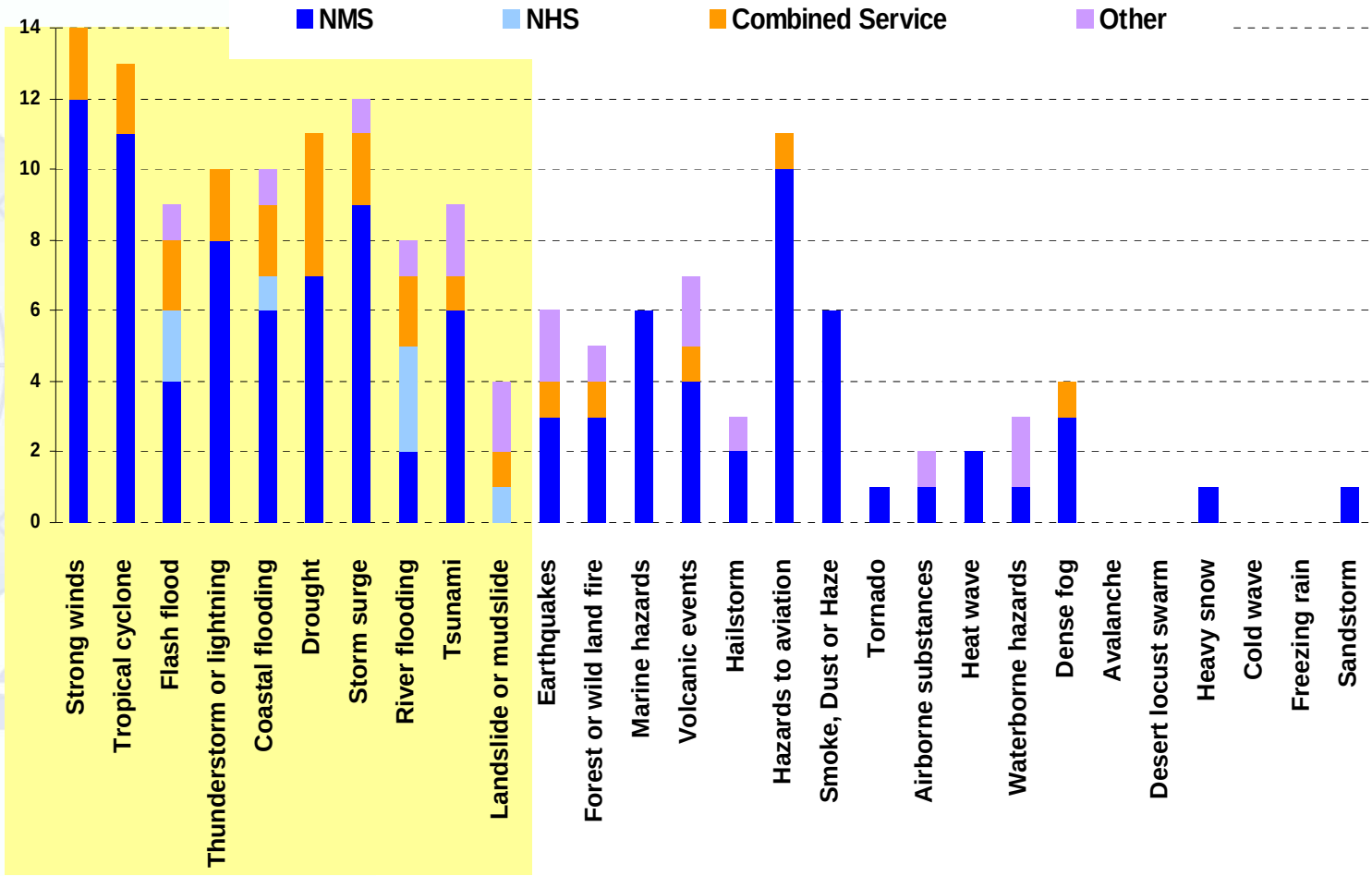
Number of countries issuing warnings

HIGH IMPACT → LOW IMPACT



Warnings could be significantly enhanced through strengthening of National Meteorological and Hydrological Services' capacities

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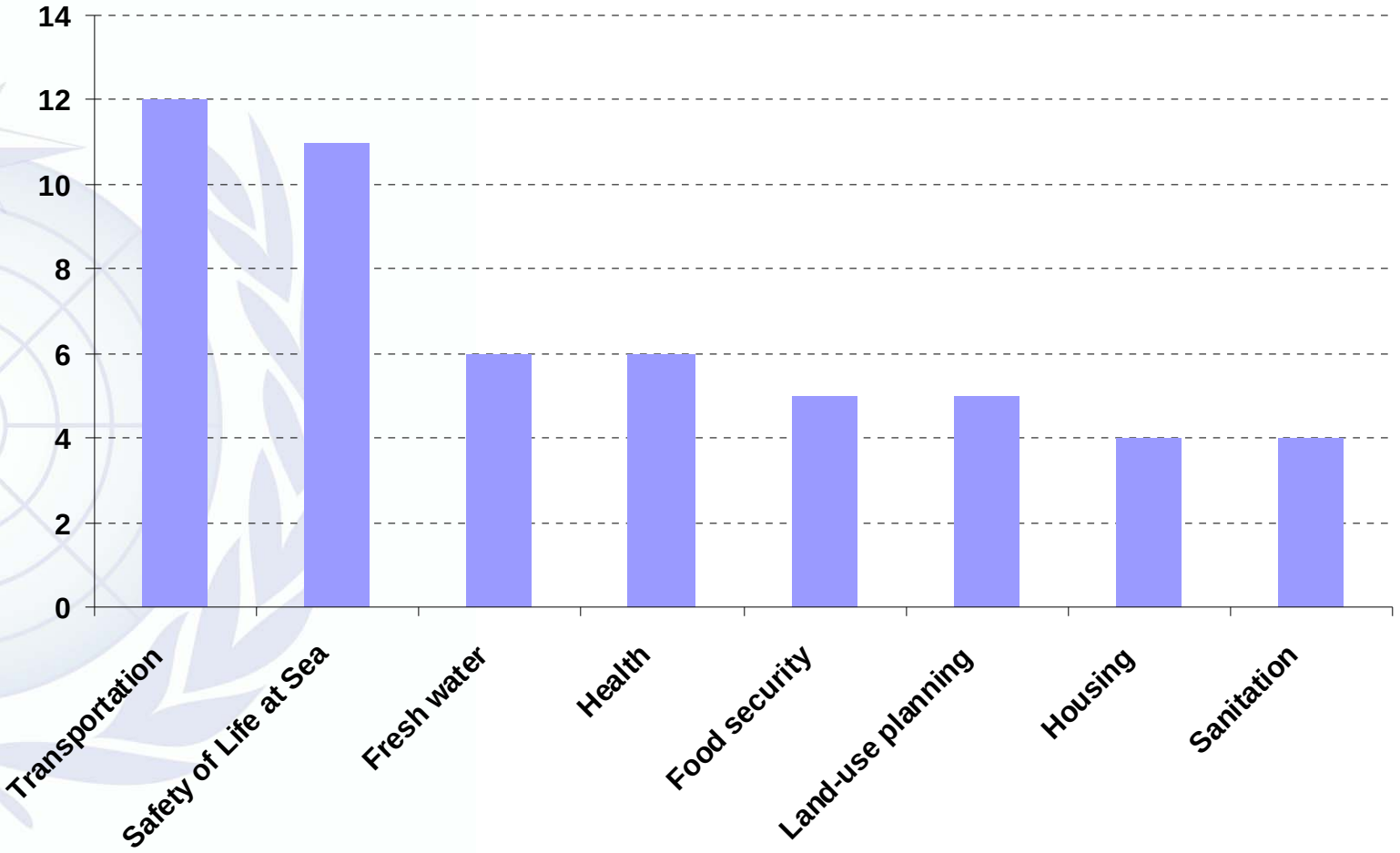
Contributions of NMHSs to key sectors relevant to Disaster Risk Management



The contributions could be significantly enhanced through strengthening of National Meteorological and Hydrological Services' capacities

Limiting factors of NMHSs in their contribution to disaster risk management

Most critical factors limiting contributions of NMHSs to disaster risk management	South-West Pacific - RA V (out of 14 responses)	GLOBAL (out of 139 responses)
Visibility and recognition of NMHSs within the Government as one of the main contributing agencies to disaster risk reduction	**10/14**	**108/134**
Understanding at the ministerial level of the socio-economic benefits of hydrometeorological products and services	**12/14**	**124/132**
National disaster risk reduction organizational structures	**6/13**	**49/132**
Lack of understanding by governmental authorities of the value that NMHSs provides	**9/14**	**82/130**
Legislation or policies regarding the role of the National Meteorological and Hydrological Service in DRR	**6/14**	**72/131**
Observing networks for hydro-meteorological conditions	**10/14**	**91/129**
Resources for the maintenance of the observing networks	**8/14**	**95/131**
Value-added services in support of hydrometeorological risk assessment	**13/13**	**114/127**
Resources and infrastructure to deliver products and services	**11/12**	**105/114**
Operational forecasting and warning services	**12/13**	**119/128**
Readiness level system to ensure appropriate response by authorities to the levels of information issued by NMHSs	**11/13**	**106/126**
Collaboration and coordination with the WMO Regional Specialized Meteorological Centres	**9/14**	**100/130**
Linkages with other organizations involved in disaster risk reduction	**7/14**	**68/133**
Coordination with neighboring or adjacent countries	**11/14**	**115/132**
Forecaster training	**8/14**	**74/131**
Joint training between NMHS staff and disaster risk managers	**8/14**	**91/132**
Joint training between NMHS staff and media	**8/14**	**90/135**
Joint training between NMHS staff and emergency authorities and managers	**8/14**	**89/133**
Educational modules that NMHSs could target at Media, Public, disaster risk reduction authorities	**12/14**	**117/134**
Public understanding of the effects of hazards	**12/14**	**111/133**
Public understanding of warnings	**12/14**	**109/133**

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Areas in which WMO's global and regional efforts could enhance NMHSs' contribution to disaster risk management

Statement	RA V (South-West Pacific) 14 / 19	Global 139 /187
Provision of technical advice and specifications (e.g. to enhance observing networks, operational infrastructures, relevant products and services for disaster risk reduction applications)	**1**	2
Technology transfer, capacity building, technical guidelines and technical trainings (e.g. forecasting tools and methodologies, hazard mapping, and other inputs to risk assessment tools, etc.)	**2**	1
Strengthening strategic partnerships with stakeholders (e.g. disaster risk managers, media, etc.)	**3**	6
Education, training and public outreach programs in disaster risk reduction (e.g. targeted at National Meteorological and Hydrological Service and their stakeholders)	**4**	3
Cost benefit analysis of hydro-meteorological services in disaster risk reduction	**5**	5
Strengthening strategic partnerships with other technical organizations and agencies (e.g. meteorology, hydrology, ocean services, etc.)	**6**	8
Resource mobilization	**7**	9
Assist members in the development of the national disaster risk reduction plans	**8**	7
Advocacy for enhanced visibility of National Meteorological and Hydrological Service' in the area of disaster risk reduction	**9**	4
Establishment of regional emergency protocols for the National Meteorological and Hydrological Services in support of each other in case of disruption of services due to the impact of a disaster	**10**	10

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Preliminary results of the WMO regional-level DPM survey in RA V (Oceania)

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Regional-level DPM survey is being implemented by RA Working Group on DPM to address issues related to:

i) Providing information on initiatives through various economic groupings and agencies to develop regional strategic plans for implementing the Hyogo Framework for Action (HFA)

ii) Strengthening regional capacity's in disaster risk management

iii) Identification and prioritization of hazards that pose the greatest risk resulting in a need for cross boundary / sub-regional / regional collaboration and cooperation

iv) Understanding the current capacities and activities in the region in support of disaster risk management, and how these regional capacities and activities support these focus areas, including the projects underway through the working groups of the Regional Association

v) Identification of gaps and needs and cross-boundary challenges for enhancing capacities in support of disaster risk management

vi) Regional priorities with respect to addressing these gaps and needs

vii) Identification of existing and potential future partnerships and concrete project areas of the regional association with other agencies involved in disaster risk reduction.

viii) Prioritization of activities / projects in support of Members capacities in disaster risk management in your Regional Association.

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RA V DPM

- RA V DPM –WG
  - established April 2006.
  - Membership confirmed.
  - Not yet had first meeting.
  - Looking for guidance from outcomes of this meeting
- WMO DPM Regional-Level Survey – Early responses
  - New Zealand;
  - Singapore;
  - Australia;
  - Honolulu;
- Overview
  - Much regional Disaster Mitigation activity within various regional groupings,
  - Strong support for ISDR,
  - ‘Capacity Building’ is a priority
  - Some key activities and priorities identified – too early for collated Regional level review

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Opportunities and recent initiatives for implementation of the Hyogo Framework for Action (HFA), and key partners

The ASEAN Agreement on Disaster Management and Emergency Response (ASEAN Admer) was endorsed by Member Countries in July 2005 to harmonise ASEAN's own principles, UN principles and those adopted in Hyogo World Conference on Disaster Reduction in January 2005.

FRANZ Agreement – supporting Disaster Response in the Pacific Region (France / Australia / New Zealand)

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Opportunities and recent initiatives for implementation of the Hyogo Framework for Action (HFA), and key partners

- SW Pacific - Strengthening Regional Capacity
  - Pacific Plan **The Pacific Plan** adopted by Pacific Leaders in October 2005 is the overriding blueprint for the whole South West Pacific region. The goal of the Plan is to ***enhance and stimulate Economic Growth (EG), Sustainable Development (SD), Good Governance (GG) and SEcurity (SE) for Pacific countries through regionalism.*** To meet this goal, the Pacific Plan's strategic objectives are: ***EG*** *(*Increased sustainable trade (including services) and investment), ***SD*** (reduced poverty, improved natural resource and environmental management, improved health, improved education and training, improved gender equality, enhanced involvement of youth, increased levels of participation and achievement in sports, recognised and protected cultural values, identities and traditional knowledge), ***GG*** (Improved transparency, accountability, equity and efficiency in the management and use if resources in the Pacific) and **SE** (Improved political and social conditions for stability and safety).
  - **DRM comes (directly and indirectly) under all components of the Pacific Plan.** However, the SD component of the Plan, through continuation of the development of adaptation and mitigation efforts linked to the ***Pacific Climate Change Framework 2006-2015*** and the ***Pacific Disaster Risk Reduction and Disaster Management Framework for Action, 2006-2015,*** is the main driver for promoting DRM programmes and activities (current/planned) in the region.

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– Other regional initiatives include Council of Pacific Regional Organisations and Programmes (CROP) Action Plans and Strategies (e.g. SPREP Action Plan for the Management of Natural Resources, SOPAC Programme of Action, etc). In the meteorological area, the ***Strategic Action Plan for the Development of Meteorology in the Pacific (SDMP), 2000-2009,*** adopted in 1999 is the blueprint for the development of NMSs to fulfill their roles and responsibilities in DRM related activities. The SDMP is currently under review.

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SW Pacific - ISDR and other Regional and International cooperative DM activities

- Links through the Pacific Disaster Risk Reduction and Disaster Management Framework for Action, 2006-2015 and Pacific Climate Change Framework.
- ***Regional:*** Other CROP agencies such as the Pacific Centre for Sustainable Development (PACE), University of the South Pacific (USP), Fiji, SPC, Noumea, FFA, Honiara, East West Centre (EWC), University of Hawaii, Honolulu, Pacific Tsunami Warning Centre, Honolulu, US NOAA Pacific Disaster Centre, Maui, Hawaii, US NOAA Pacific ENSO Application Centre (PEAC), Honolulu. Pacific NGOs (PIANGO) and local (civil society) communities (e.g. village councils, women's committees, churches, etc) also play major roles in DRM activities in the region.
- ***International****:* World Bank, FAO, UNDP, UNEP, WHO and international NGOs such as WWF, Greenpeace Pacific, etc.
- ***Pacific region***: **The Pacific Plan**, Strategic Action Plan for the Development of Meteorology (SDMP), 2000-2009, PI-GCOS Action Plan, PI-GOOS Action Plan, Pacific Disaster Risk Reduction and Disaster Management Framework for Action, 2006-2015, Individual CROP Agencies (e.g. SOPAC and SPREP) Action Plans and Strategies, NZAID Plans, RA V Tropical Cyclone Plan.

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Australia BoM – 'Whole of Government' DM activities - Nationally and Regionally

DRM initiatives in the Asia Pacific region that have relevance NMHSs: (Australian Aid officer)
- ISDR's regional office is involved in:

- the promotion of the Hyogo Framework for Action throughout the Asia Pacific region and forging of partnerships at the regional level to facilitate its implementation;
- The follow-up and strengthening of projects carried out under the United Nations Flash Appeal for the IOTWS;
- and the development of an effective information management system.
- The Asian Disaster Preparedness Centre has a Climate Risk Management Programme, Community Based DRM Programme and Disaster Management Systems Program.
  - SOPAC, funded by EU, has conducted some hazard mapping in the Pacific region.
  - NMHSs frequently work closely with NDMOs in the region and are therefore a stakeholder in the various DRM capacity building projects throughout the region.
- NMHSs participate in the various trainings and workshops conducted as part of these projects.

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Capacity Building

- *Capacity building* projects to strengthen national and provincial DRM systems funded by AusAID in the Asia Pacific region are located in Solomon Islands, PNG,Indonesia and Vietnam. The World Bank is also funding a project to build the capacity of Samoa's NDMO.

  - Indian Ocean Consortium Initiative - Strengthening National Capacities for Tsunami Early Warning and Response Systems in the Indian Ocean (WMO is part of this consortium).
  - Geoscience Australia, funded by AusAID, is conducting regional tsunami hazard assessments in both the Indian and Pacific Oceans.

  - Pacific Wave Exercise 2006 involved NMHSs throughout the Pacific region.

  - South Pacific Regional Environmental Programme has many programmes related to DRM directly and indirectly.

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Regional activities and capacities available through WMO network (RSMCs and RTCs)

Asia Pacific and Indian Ocean Region

- **UNESCAP-WMO Typhoon Committee and Panel on Tropical Cyclones** implemented many regional programmes through three components; namely meteorology, hydrology and disaster preparedness and prevention
  - ASEAN was set up with three main objectives in mind: to promote the economic, social and cultural development of the region through cooperative programmes ASEAN Committee on Disaster Management (ACDM) was set up in 2003 to enhance regional emergency response mechanism. ASEAN Coordinating Centre for Humanitarian Assistance (AHA Centre). The Centre will manage disaster risk
  - ASEAN Disaster Information Sharing and Communication Network (DISCNet) and On-line Southeast Asia Disaster Inventory (OSADI) have been formed. The overall objective of the Network aims to improve early warning and decision making through electronic link up amongst Member Countries with the AHA Centre and with other parties, The ACDM has also developed the ASEAN Regional Programme on Disaster Management. This programme which was recently adopted covers a wide range of activities, including capacity building, sharing of information and resources, engaging external partnerships, and public education, awareness and advocacy in disaster management. ASEAN Sub-Committee on Meteorology and Geophysics (ASMG) is another sub-Committee that is actively involved in the disaster preparedness and prevention

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RSMC Honolulu -

The Typhoon Committee Working Group on Hydrology:

- Establishment of Flash Flood Warning Systems including debris flow
- Implementation of Flood Hazard maps
- Identification of User Friendly Hydrology Services and Product

The Typhoon Committee Working Group on Disaster Preparedness and Planning:

- 1. Disaster Database System focusing on an inventory of early warning systems

RSMC Provides info and training for emergency management

Identified gaps

- Dissemination mechanisms / infrastructure to deliver weather information to remote islands
- Education for emergency managers on applications of weather information in routine and non-routine operations
- Education and training on customer service concepts for weather information, forecasts and warnings

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WMO initiatives in Earthquake/Tsunami early warning and mitigation system in the Indian Ocean.

- Over the last one and a half years, much progress has been made in the setting up of the Indian Ocean Tsunami Early Warning and Mitigation System (IOTWS). The Intergovernmental Coordination Group (ICG) for the IOTWS has been formed together with five working groups. Three coordination meetings have been held to address several key issues.
- WMO has participated actively in all major conferences, including the three ICG meetings, to contribute its infrastructure (i.e., Global Telecommunication System) and relevant technical capabilities to the development of the Indian Ocean Tsunami Early Warning and Mitigation System (IO-TWS).
- 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.

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WMO initiatives in Earthquake/Tsunami early warning and mitigation system in the Indian Ocean.

- A Coordination Meeting on GTS upgrade in the Indian Ocean to support multi-hazard early warning systems, including Tsunami warning, was held in Geneva from 17 to 19 October 2005, which reviewed and consolidated the proposed projects (technical feasibility, cost, implementation schedule) for ensuring a consistent GTS upgrade plan for the whole Indian Ocean rim, with a view to a coordinated implementation plan. (Additional information can be obtained from WMO website)
- WMO is working together with UNESCO-IOC, International Strategy for Disaster Reduction (ISDR) and other key partners at the international, regional, and national levels to contribute its relevant capabilities and existing infrastructure to the development of end-to-end tsunami early warning systems in the Indian Ocean and other regions at risk. WMO organized this **WORKSHOP ON MULTI-HAZARD, EARLY WARNING CENTRES' CONCEPT OF OPERATIONS FOR THE INDIAN OCEAN TSUNAMI WARNING SYSTEM IN SINGAPORE, 21-23 NOVEMBER 2005.** This workshop was to gather the wealth of knowledge and experience of its established Regional Specialized Meteorological Centres, the "RSMCs" and the related role of National Meteorological and Hydrometeorological Services (NMHS), and existing Tsunami Warning Centres (TWC) to further promote and develop the concept of operations of multi-hazard multipurpose early warning systems.

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WMO initiatives in Earthquake/Tsunami early warning and mitigation system in the Indian Ocean.

- WMO was invited by **The Second Meeting of the Technical Task Force for the Establishment of Monitoring Network of the Tsunami Early Warning System in ASEAN** that was held on 4-5 April 2006 at the Bandar Seri Begawan, Brunei Darussalam. WMO representative has highlighted the following initiatives and activities of WMO in relation to its early warning system :
- WMO's Global Telecommunication System (GTS)
- Support of the Regional Tsunami Centers
- Enhancement of Multi-Hazard national warning alert and response mechanisms
- Identification of user-requirements for utilization of Satellites for IO-EWS
- Enhancement of Maritime safety
- Integration of TWS within a multi-hazard framework (e.g., tropical cyclones, storm surges, etc.)

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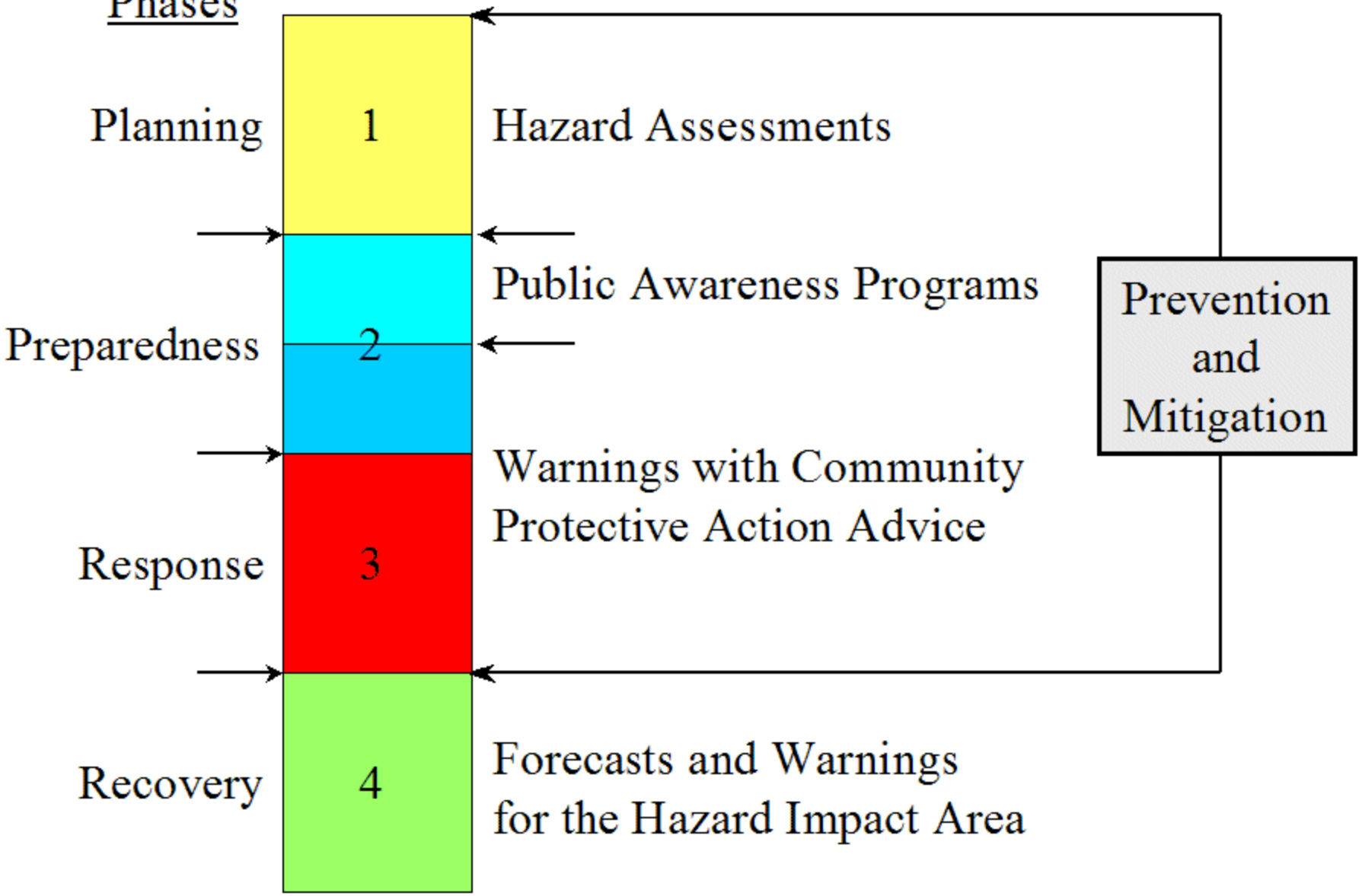
Role of the RSMCs/TCWCs



Conclusion – for discussion

- Early results
- Lots happening
- Strong support for cooperative multi-agency initiatives
- Capacity building a priority
- Primary role (responsibilities) NMHS's

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