



**Expert Meeting on
Disaster Warning and Response Systems
in Small Island Developing States Regions**
Christ Church, Barbados, 8 – 9 August 2005

**Summary of Findings and
Recommendations to the Regional Secretaries General**

Prepared by
the Commonwealth Secretariat*
for
the Caribbean Community,
Indian Ocean Commission and Pacific Island Forum Secretariat

* This paper was prepared for the Commonwealth Secretariat by Ms Rowena Hay, Managing Director, Umvoto Africa (Pty) Ltd. The views expressed are not necessarily those of the Commonwealth Secretariat

Conclusions of an Expert Meeting on Disaster Warning and Response Systems in Small Island Developing States Regions

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Executive Summary

This report has been prepared at the request of the Secretaries-General of the Commonwealth, Caribbean Community, Indian Ocean Commission and the Pacific Islands Forum in follow-up to their informal meeting of 13 January 2005, held in Mauritius in the wings of the United Nation's International Meeting to Review the Implementation of the Barbados Programme of Action (BPoA) on the Sustainable Development of Small Island Developing States (SIDS).

The Secretaries-General met in the immediate aftermath of the 26 December 2004 tsunami. Recognising the strength of their institutions in working across international borders, they decided to examine ways in which they could collectively reduce the future impact of natural disasters by strengthening advance warning networks across international borders. They noted that in some areas, there were already advance disaster warning networks in place. In other areas, new investment and fresh initiatives were required. With this in mind, Secretaries-General resolved to: (a) develop inventories of the advance warning resources and systems available in each of the Caribbean, Indian and Pacific Ocean regions; and through this, to (b) identify aspects of these systems which need strengthening, including the human and institutional capacity and information systems that underpin effective disaster warning and response. The Commonwealth Secretariat was asked to facilitate this work.

Each region collated information and prepared a report on its warning and response systems. These reports were then considered at a meeting of technical experts from the three regions, with a review to: reviewing their respective disaster warning and response systems; identifying the gaps in the systems; and identifying potential measures required to address the gaps.

The Commonwealth Secretariat engaged a consultant, Ms Rowena Hay of Umvoto Africa (Pty) Ltd, to provide a review of current international efforts to strengthen advance warning systems and consider the regional reports, ahead of the technical experts meeting, which was held in Barbados (8-9 August 2005). Ms Hay's report on 'Disaster Warning and Response Systems in Small Island Developing States (SIDS) Regions', and the three regional reports are published separately and form part of the documentation for this initiative.

This report presents the conclusions of the expert meeting in Barbados. Key findings were as follows:

- The regions face a similar hydrometeorological hazards and are generally well organised with respect to early warning for tropical storms and cyclones. Warning systems for other types of hazard (flooding, earthquakes, volcanic eruptions and slow on set disasters such as drought) are more variable in their effectiveness and generally need to be further developed. Critically, the three regions need to strengthen the multi-hazard approach to preparedness and response.

- All three regions lack co-ordinated early warning mechanisms for tsunamis of local and/or regional origin. All regions also identified the need for capacity building at the community and various leadership levels as being a priority gap that needs to be addressed.
- Each region identified specific issues that need to be addressed. In the Indian Ocean region, a critical concern is the establishment of a regional technical institution (and the development of requisite skills) of the kind that exist in other SIDS regions. In the Pacific, one concern is the need to upgrade existing communications systems to meet present-day needs, especially at the community level. In the Caribbean, there is a need to give effect to disaster-related policies and strategies, and to allocate resources at the national level. The issue here is the extent to which IGOs, by working together at a political level within the international community, can help to highlight these concerns and work to address them.

The recommendations for action by Secretaries-General centre on their capacity to highlight issues at a high political level, facilitate and support action by regional specialist bodies, and mobilise resources. They are detailed on page 10 of this report.

The meeting highlighted an important role for IGOs in three spheres:

1. The first was political will and leadership. Leadership is needed at all levels to support effective disaster risk reduction (DRR) and disaster management (DM) in SIDS. Sustained political will is also needed at the highest political levels to secure a consistent and long-term approach to and funding of disaster risk management, as well as early warning systems that are effective right down to the community level. Through their regular political processes, the IGOs could play an important role in developing political will and leadership – keeping international approaches on track, and supporting efforts towards effective national and regional-level planning. The IGOs are also well placed to highlight and mobilise resources to meet outstanding technology requirements in each region, and to facilitate efforts to share and collectively address capacity building needs.
2. The second was in the area of sharing experiences and developing pooled capacity and expertise. Fruitful areas include the provision of professional training, development of university courses, leadership skills, best practice guidelines, exchange programmes, and the establishment of self-sustained preparedness training and local communities.
3. The third was in promoting and monitoring the integration of disaster risk reduction into all MDG initiatives which will also significantly support sustainable development and poverty reduction. This would give practical expression to the need to closely integrate efforts on disaster risk reduction, PRSPs and the MDGs.

Introduction

This paper presents the findings and recommendations of a meeting of experts, (Barbados, 8-9 August 2005), which was organised in response to a statement of the Secretaries-General of the Commonwealth, Caribbean Community (CARICOM), Indian Ocean Commission (henceforward COI¹ – Commission de l’Océan Indien), and Pacific Islands Forum (PIF) Secretariat, concluded during the Mauritius International Meeting in January 2005 in the immediate aftermath of the 26 December 2004 tsunami. In their statement, the Secretaries-General committed themselves to examining ways in which their institutions could collectively reduce the future impact of natural disasters by strengthening advance warning networks including the human and institutional capacity and the information systems that underpin effective disaster warning and response across international borders.

The Expert Consultation included representatives from the Inter-Governmental Organisations (IGOs) from the Pacific, Indian Ocean and Caribbean Regions, representatives from regional specialist organisations, and various experts in tsunami and hydro-meteorological early warning, geohazard assessment, medical disaster response and community empowerment. A list of participants is provided as an annex to this report.

The meeting reviewed the background document “Collaborative Project on Disaster Warning and Response systems in Small Island Developing States Regions”, which provides a review of current efforts at regional and international levels to develop early warning systems in SIDS regions, and synthesises reports produced by each region on the status of early warning systems, and gaps that need to be addressed..

The meeting also took into account the outcome of the World Conference on Disaster Risk (WCDR) – namely the Hyogo Framework for Action 2005 – 2015: “Building the Resilience of Nations communities to Disasters”

The meeting recognised that:

1. Small island developing states (SIDS) “are located among the most vulnerable regions in the world in relation to the intensity and frequency of natural and environmental disasters and their increasing impact, and face disproportionately high economic, social and environmental consequences.” This was highlighted by the tragic impacts of the Indian Ocean tsunami on the 26 December last year and of the 2004 hurricane/cyclone/typhoon season in the Caribbean and Pacific.
2. The results from both the Mauritius Strategy and the Global International Waters Assessment (GIWA) project of the United Nations Environment Program (UNEP) indicate that issues of Early Warning and Disaster Response in the SIDS regions cannot be confined to consideration of “natural hazards”, whether of hydro-meteorological, geological or biological origin, but must also include those caused by technological, environmental and social factors.
3. Community involvement during all phases of implementation and maintenance of Early Warning (EW) and Disaster Response (DR) is important, regardless of the local socio-economic conditions.

¹ The French acronym not only records the dominant language of this regional community, but serves to avoid confusion with another IOC, namely, the Intergovernmental Oceanographic Commission of UNESCO.

4. There are a number of global initiatives currently underway (*see endnote*) that would support inter-regional, regional and national initiatives within the three SIDS regions to bring about effective multi-hazard, community-oriented, early warning systems.

STATUS OF DISASTER WARNING AND RESPONSE SYSTEMS IN SIDS REGIONS

The meeting acknowledged the key findings and common issues identified by the accompanying background document within the three SIDS regions – Caribbean, Pacific and Indian Ocean² as follows:

- The regions (CARICOM, PIF, and COI) have a common tropical-subtropical geographic situation and consequently face a similar range of hydro-meteorological hazards typically associated with the seasonal development of tropical revolving storms.
- The regions differ widely in their respective social and economic, governance at both national and local levels, in their skills and institutional capacity, and in their geotectonic settings. Within each of the regions the nation states have varying capacities to cope with disasters.
- Common to all the regions is the need to strengthen the multi-hazard approach and to build on the existing capabilities in the Early Warning Systems in place for the frequently recurring hazards such as cyclones. It was found that

For lower frequency (earthquakes and volcanic eruptions) and slow onset disasters both the scientific and the EWS infrastructure were less well developed.

- For the slow onset disasters (droughts, epidemics, famine), the appropriate initiatives to adapt livelihood strategies are much less well developed, particularly in the COI region.
- The EW and the DR activities associated with secondary and tertiary hazards of a hydro-meteorological nature were well developed in the CARICOM states but less so in the PIFS and COI regions.
- Throughout the regions, it was recognised that limited attention had been paid to the less well-known and less documented hazards of a biological or technological nature, both of which have the potential to contaminate freshwater supplies and further pollute a coastal environment already subject to pressure from urban migration and oil spills.
- All three regions lack coordinated warning mechanisms for tsunamis of local/regional origin. The integrated development of capacity, and the local technical capability to sustain it, is seen as a major concern.
- The key issue identified is empowerment and engagement of local communities within an integrated warning and preparedness system.

² Within the International community, the Indian Ocean is part of the Atlantic, Indian Ocean, Mediterranean and South China Seas (AIMS) group of SIDS. IOC has been mandated with supporting follow-up to the Mauritius Strategy for all countries in the AIMS group.

The meeting further acknowledged that the findings and issues specific to each region are as follows:

Atlantic Indian Ocean, Mediterranean and South China Seas (AIMS) region

- The COI states differ not only in their tectonic but also in their socio-economic circumstances. Thus they experience the impact of hydro-meteorological disasters in very different ways, as was seen following the recent tsunami.
- All the COI states face common threats of maritime pollution, environmental degradation, air, road and shipping accidents but the impact and capacity to recover from these threats varies according to socio-economic circumstances. Madagascar is particularly vulnerable.
- There is a need in this region to strengthen the institutional relationships between Réunion and Mauritius and the other island states. There also needs to be a stronger relationship between the COI and the states, and the Regional Economic Communities of the eastern seaboard of Africa. Building scientific skills and institutional capacity at a regional level would support these relationships within and between the African mainland and the Indian Ocean island states. All islands other than Mauritius and Réunion require improved 24/7 communications systems, especially to outlying areas, with associated technical support and training, as well as financial support to ensure the ongoing upgrade and maintenance of such infrastructure.
- The Maldives islands are highly vulnerable to short-term sea level rise and require external technical and financial support to establish appropriate EW and DR systems. In contrast, Mauritius and Réunion are not especially vulnerable to short-term sea level rise and have good local technical, financial and institutional capacity to address both the frequently recurring threat of cyclones as well as the slow onset hazard of sea level rise associated with climate change.
- The Comores, the Maldives, Madagascar and the Seychelles are vulnerable to long-term sea level rise and require external financial and technical support to address this threat as well as the other slow onset threats of drought, famine and epidemics.

Pacific Region

- The Pacific Island Forum states have prepared a comprehensive and detailed Framework for Action, in alignment with the Hyogo Framework for Action. This will be presented to the Pacific Islands Forum leaders for formal endorsement later in 2005.
- A thorough record of the status, challenges, needs and priorities of the PIFS in the medium term is in place. In terms of EW, it calls for the development of integrated systems that are both easily understood and people-focused, with an emphasis on education and public awareness.
- The region has a well-coordinated meteorological system across state and cultural boundaries that support the EW systems for the most frequently occurring cyclone hazard. In the less developed and outlying regions however the EW system is not manned 24/7 and there is limited local capacity to use the meteorological information

to predict the secondary and tertiary hazards of storm surges, droughts and coastal flooding, *inter alia*.

- The primary challenge in this region is to develop both the infrastructure and the skills to expand the existing EW systems to include secondary and tertiary hazards associated with cyclones, as well geohazards, biohazards and possible kinds of technohazards that might threaten the PIFS, and to overcome the problems of distance and communications. Linkages in countries with external EW systems need strengthening.
- There is a problem of waste disposal and associated pollution of freshwater lenses in atoll environments, environmental degradation and the impact of urban migration particularly to coastal areas, the impact of climate change, sea-level rise, deforestation, soil erosion, loss of biodiversity, and the like.
- The primary role of the South Pacific Applied Geoscience Commission (SOPAC) has shifted from hazard assessment to that of assisting in the development of disaster risk management strategies and the strengthening of National Disaster Management Organisations (NDMOs). SOPAC is also increasingly undertaking a regional coordinating and planning role for disaster preparedness and response, but does not have a specific mandate in relation to development and operation of EW systems.
- In general there appears to be good preparedness/training for frequent or commonly encountered hazards, such as annually recurring cyclones, but poor or negligible preparedness/training for very infrequent and/or unfamiliar hazards, such as catastrophic tsunamis, volcanic activity, landslides and technohazards.
- The PIFS region lacks a coordinated warning mechanism for local/regional tsunamis. The development of such capacity, and technical capability in the region to sustain it, is seen as a major concern.
- The empowerment and engagement of local communities within an integrated, multi-hazard early-warning and preparedness system is identified as a key issue.

Caribbean Region

- The CARICOM states have relatively advanced EW and DR systems for the management of hydro-meteorological hazards, viz., cyclones, floods, heavy rains, and the secondary and tertiary associated hazards. These systems are based on co-operation with the Regional and International partners, the WMO and the other Caribbean states. There are initiatives underway to further the detection and monitoring of geologic and seismic activity and the ability to issue effective EWS for these hazards. This is primarily being undertaken by the scientific institutions that are also responsible for the EWS of the CARICOM states as well as for other Caribbean States in similar geotectonic setting
- CDERA through its regional programme framework 2005 – 2015, which is linked to the Hyogo Framework of Action and the Barbados Plan of Action (BPoA) and incorporates the principles of Comprehensive Disaster Management (CDM), has identified priority areas for the region as: Hazard Mapping and Vulnerability Assessment, Flood Management, Community Disaster Planning, Early Warning Systems, Climate Change and Knowledge Enhancement.
- There are initiatives underway to further the monitoring of, and ability to issue effective EW for, volcanic and earthquake related hazards. This is primarily being

undertaken by the scientific institutions who are also responsible for the EWS of the CARICOM states, as well as for other Caribbean states in similar geotectonic setting.

- There is an expressed need to enhance policy definition, define strategies, mobilize and allocate resources for DR at the national level. Within the region it is agreed that it is necessary to mobilize and secure resources over an appropriate time frame to support the operationalisation of existing policies and protocols at regional, national, local and community level within the DM arena.

There is a need to learn and share lessons learned in DR, not only from other SIDS regions but also from other Caribbean states outside of the CARICOM.

INTER-REGIONAL CONCERNS OF SIDS

The meeting discussed the key concerns in the respective SIDS regions, and considered areas where action across international borders, and collective action by the regional IGOs, is needed to ensure that EW systems are developed and maintained and that effective risk and disaster management is achieved in all SIDS communities, within a comprehensive multi-hazard framework.

Advocacy at international and national levels

The meeting recognized that there are a number of areas where political leadership and consensus building is required to ensure that risks are effectively addressed across all the SIDS regions:

- The efforts currently being made to establish tsunami early warning systems in the Indian Ocean and the Caribbean region are strongly welcomed, but the meeting also noted that the South West Pacific Region is particularly at risk from tsunami events and requires funding for similar programmes to strengthen existing, fragmented systems;
- Sustained political will is needed at the highest levels – both nationally and internationally – to undertake a consistent and long-term approach to disaster risk management, thereby ensuring that EW systems are effective right down to the community level, and that disaster recovery plans are in place and reviewed, so that lessons are learned over time. Through discussions at the highest levels, Disaster Risk Reduction (DRR) needs to be fully integrated into national development planning, country Poverty Reduction Strategy Papers (PRSPs) and the Millennium Development Goals (MDG) framework. To support this process, greater capacity and effort is required in the economic assessment of the costs of disaster impacts the benefits of DRR interventions.
- Closely related to the requirement for political will is the need for leadership at all levels in disaster risk management. Champions in the process are required. This will require novel integral approaches that enable all communities at risk, and all citizens, men and women, to be involved.
- The three SIDS regions each have different levels of regional institutional capacity. Some of the capacity gaps should be addressed through international forums. In particular, there is a need for a SOPAC-like technical support body for the COI region

and the whole of the AIMS group. Other approaches to addressing institutional gaps could include the development of warning and preparedness services through UNEP, IFRC, UNESCO, UNDP, UNESCAP and UNICEF, linked to the ISDR system.

- Broadly speaking, the regional institutional capacities should support research and development, monitoring and evaluation, education, training and professional development. This can best be planned on the basis of a clear audit of the structure, roles and responsibilities in hazard assessment and risk management, through the full gamut of players. The meeting noted that, in the current tsunami early warning context, UNESCO's Intergovernmental Oceanographic Commission (IOC) is undertaking a brief survey of this kind in the Indian Ocean region. Other SIDS regions should seek assistance for comparable, multi-hazard analyses and planning, drawing on the IOC-UNESCO experience.

Resource mobilization

Patterns of resource mobilization in the three regions vary and there is a potential for the regional organisations to share their experiences on effective approaches to mobilizing and harnessing donor and other finance, such as that employed through the Eastern Caribbean Donor Group.

The meeting noted that proposals had been made at the Kobe Summit to channel 10 per cent of development assistance towards disaster reduction. There is a role for the regional IGOs in tracking the levels and deployment of donor assistance to ensure it can best promote sustainable livelihoods, sustainable community development, and sustainable disaster risk management principles.

On the matter of catastrophe insurance and re-insurance (toward immediate post-disaster assistance for governments), the meeting noted that the World Bank was currently developing proposals for the creation of natural hazards insurance pools, which may be presented in September 2005 at the Small States Forum in the wings of the World Bank/IMF Annual Meeting. There is a need to consider these proposals and review whether they are effectively tailored to the needs of national governments in SIDS and the need to ensure effective life-support infrastructure.

- All kinds of levels of technology are required, from the most basic to the most sophisticated, depending on the terrain and the target group, and the capacity of local communities to afford and maintain the communications infrastructure. Regions need a clear picture of their equipment requirements, maintenance and renewal programmes, and regular reviews of effective approaches, in order to ensure a good match between their own needs, donor assistance, and cost-effective solutions that consider also the role of the private sector in disaster response, resource mobilization, technology and process research, and risk management.

Assessment and information sharing

There are a number of areas where the exchange of best practice between the SIDS' regions and the development of common services could provide efficiency gains and ensure that SIDS-appropriate approaches are available.

The initiatives highlighted below could best be developed collectively by SIDS regions as part of their implementation of the Mauritius Strategy, through a SIDS university consortium and inter-regional centres of excellence, covering:

- Provision of professional training and support;
 - Development of university courses;
 - Development of the necessary leadership and management skills required for co-ordination;
 - Dissemination of best practice guidelines;
 - Promotion of exchange programmes and training attachments across regions;
 - Provision of self-sustained preparedness training among local communities.
- A key opportunity is the establishment of regional and inter-regional standards for accreditation processes, based on available best practices in hazard assessment and risk management. This will help countries to examine and remedy the gaps in their services and improve efficiency and effectiveness. It would also promote technology transfer and the best use of scarce resources.
 - The regions need to define as priorities the development and exchange of model legislation, national disaster policies/strategies/frameworks, and the mainstreaming of disaster management in development planning. Training manuals and guidance for policy, planning and implementation should be developed and published.
 - There is a critical need to strengthen data, information exchange and communication strategy from, to and at community level. This was highlighted as a key priority in all three SIDS regions. The regions should engage with, optimise and share the knowledge within communities and between communities/regions.
 - Traditional knowledge needs to be integrated into disaster management systems and expanded and disseminated.

Elements of risk management systems are often housed within different geopolitical bodies. Existing agreements for co-ordination and collaboration on information and sharing of experience should be used to ensure the effective integration of all systems in a region, and across regions.

Improving Disaster Management systems

A major finding of the group was that, while all regions are well organized to address tropical cyclones, other hazards have yet to be as effectively and comprehensively identified and managed. The key challenge for all three regions is to develop a multi-hazard approach to the development of EW and DR systems, and build preparedness for effective community-based resilience.

In a situation where there is a critical constraint on resources, organisations in the regions need to develop effective decision-making tools to assess the cost effectiveness of DRR interventions, including EW and DR systems.

The regions need also to undertake a critical identification and assessment of the vulnerability of existing 'lifeline' infrastructure and resources (e.g., schools, hospitals, community shelters, evacuation routes, emergency water and power supplies, etc.).

It is now evident that, beyond the existing technocratic methods, management practices need to be developed for the social, psychological and economic aspects of disaster. This requires an evaluation of:

- Both traditional and non-traditional mechanisms for disseminating early warnings;
- How the socio-psychological aspects of the impacts of disaster/trauma are to be addressed;
- How the specifics of the local situation, including geography, language, cultural needs of communities and individuals, are accommodated by technical solutions;
- The effectiveness of different models for community engagement and participation.

RECOMMENDATIONS TO SECRETARIES-GENERAL

The meeting recommended that the Secretaries-General mobilize the necessary political will and resources to:

1. *Promote a more integrated approach to hazard and risk management* and for this purpose publish the findings of this experts' consultation within their regions
2. *Use their high-level inter-governmental processes to:*
 - a. Strongly advocate for the acceptance of Disaster Risk Reduction (DRR) as a core element in national development strategies, with specific targets and indicators for this purpose, coordinated where appropriate with country PRSPs and the wider MDG framework.
 - b. Foster awareness and initiate actions at the highest political levels to ensure that community participation is an integral factor in all DRR activities, with particular emphasis on the role of women,; and
 - c. Develop the political will within member states to ensure their long-term commitment at the national level, and by donors, to the adoption of DRR practices within all the SIDS regions.
3. *Use their political influence to ensure that the following issues are integrated into negotiating approaches* within the Association of Small Island States (AOSIS), the natural disasters facility of the African-Caribbean-Pacific and European Union (ACP-EU) grouping, and the UN:
 - a. The SW Pacific needs for better EW and preparedness against local/regional tsunamis;
 - b. The Indian Ocean (COI) and wider AIMS region requirement for a counterpart scientific/technical organization, fulfilling a role comparable to that played by CDERA in the case of CARICOM and SOPAC in the vase of the PIF Secretariat;

- c. The facilitation of intra- and inter-regional co-operation between different geopolitical groupings in SIDS regions to ensure a seamless and integrated Early Warning/Disaster Response/Risk Management approach, combining the best practices of the Comprehensive Hazard Assessment and Risk Management (CHARM) approach in the Pacific Region and the Comprehensive Disaster Management (CDM) approach in the Caribbean region;
 - d. The integration of a CHARM/CDM paradigm with Disaster Risk Reduction plans that also aim to realize country PRSPs and the MDGs.
4. *Facilitate and support the effective collaboration of their respective technical institutions* in addressing the priorities highlighted above, through their role in coordinating regional strategies to implement the Mauritius Strategy, the following being considered priorities for such collaborative action:
- a. Establish an inter-regional process of exchange of best practice to develop a set of DRR systems and guidelines appropriate to SIDS regions;
 - b. Establish an inter-regional DRR assessment service available to all three SIDS regions;
 - c. Develop integrated DRR leadership through joint action to deliver education, training, professional development, and common services (i.e., centres of excellence for research, monitoring and evaluation);
 - d. Restructure current systems (mandates, organizations, approaches, communications) to ensure a people-centred approach; and
 - e. Commit resources for implementation of plans of actions, resolutions, and recommendations and call for periodic review and feedback on progress.
5. *Facilitate the mobilization and management of resources* by:
- a. Promoting compliance with the donor commitment at Kobe that 5% of donor funding being allocated to DRR
 - b. Reviewing proposals by the World Bank on Catastrophe insurance and re-insurance (toward immediate post-disaster assistance for governments)
 - c. Promoting long-term political commitment of member states through their regional inter-governmental processes.

Finally, it is noted that these interventions require high-level political commitment over at least 10 – 15 years and are central to achieving the Millenium Development Goals. Without this sustained support and longer-term view it is most likely that ad-hoc or short term interventions will at best spend money to stay in the same place, and at worst initiate apathy. The core elements of the recommendations are:

- Training and awareness at all levels of government and society;
- Maintained investment and support over at least one decade; and
- Support and integration of global initiatives with local programmes with respect to data, information, knowledge, training and technology, accepting of disparity in capacity.

Endnote:

- (a) The secretariat of the United Nations International Strategy for Disaster Reduction (UN/ISDR) is presently tasked with the coordination of a “survey of existing capacities and gaps” with regard to the “establishment of a worldwide early warning system for all natural hazards, building on existing national and regional capacity, to complement broader disaster preparedness and mitigation initiatives”, consequent to the Secretary-General’s report (A/59/2005, 21 March 2005) to the UN General Assembly.
- (b) The International Early Warning Programme (IEWP) was launched on 19 January 2005 at the World Conference on Disaster Reduction (WCDR), together with the preparations for the Third International Early Warning Conference (EWC-III) to be held in Bonn, Germany during March 2006. The UN system-wide survey of world early warning capacities and gaps is being closely coordinated with the EWC-III, thus providing an opportunity to address the gaps identified.
- (c) The intergovernmental Group on Earth Observation (GEO) was formally established at the Third Earth Observation Summit held in Brussels, Belgium, on February 16, 2005, which endorsed a 10-year Implementation Plan to create a Global Earth Observation System of Systems (GEOSS). The sections of the GEOSS plan deal with the societal benefit area of “Disasters”, with 2-year targets that relevant in the short term.
- (d) New Intergovernmental Coordination Groups (ICGs) for tsunami warning and mitigation systems within a global multi-hazards framework were formally established by resolutions of the Twenty-third Assembly of the Intergovernmental Oceanographic Commission of UNESCO (IOC/UNESCO) in June 2005.
- (e) The programmes of Commission for Sustainable Development, and activities associated with the International Decade of Education for Sustainable Development, have a bearing on the building of institutional capacity and the development of professional skills in hazard assessment and risk management at the regional or local level.

**Consultation on Disaster Warning and Response Systems in SIDS regions
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