

Regional Cooperation on Disaster Management in South Asia: Challenges and Opportunities for Regional Early Warning System for Natural Disasters

**P.G.Dhar Chakrabarti
Director**

**SAARC Disaster Management Centre
Executive Director**

National Institute of Disaster Management

South Asia



Hazards of nature

- Largest, youngest and most seismic active mountain system
- Largest non-polar glacial deposits melting due to effects of global warming
- Heavy rainfall and high silt load on water bodies causing recurrent flood over large areas
- Larger area facing droughts due to scanty rainfall and depleting ground water level
- 12000 km coastline and many islands threatened by cyclones, storm surge and sea level rise



Layers of vulnerabilities

- With 23% of world population, South Asia produces only 1.3% of world income
- 40% of world poor (500 million) live in South Asia
- Half of malnourished children belong to South Asia
- 46% of world illiterates also belong to South Asia
- South Asia has the lowest sex ratio reflecting deeply rooted gender discrimination in society
- 1.4 billion people of South Asia is still growing at more than 2% per annum
- Unplanned urban areas growing at faster rate of 4.5% per annum creating further layer of urban vulnerabilities

Disasters in South Asia

(1970-2009)

Countries	Total		% share	
	Events	Deaths	Events	Deaths
Afghanistan	126	19794	11.13	2.28
Bangladesh	254	528503	22.44	60.82
Bhutan	7	287	0.62	0.03
India	462	179459	40.81	20.65
Maldives	5	325	0.44	0.04
Nepal	78	11390	6.89	1.31
Pakistan	137	91886	12.10	10.57
Sri Lanka	63	37362	5.57	4.30
Total	1132	869006	100	100

Recent mega disasters of South Asia

Country	Disaster	Deaths	People affected
Bangladesh	Cyclone 1970	300,000	20 million
Bangladesh	Cyclone 1991	138,000	15 million
India	Earthquake 1993	9475	1 million
India	Cyclone 1999	10086	15 million
India	Earthquake 2001	13805	1.8 million
India	Tsunami 2004	12405	3.5 million
Pakistan	Earthquake 2005	83,000	5 million
Afghanistan	Drought 2000	712	2.5 million
Sri Lanka	Tsunami 2004	35,399	1 million

NDRRM

“ The Heads of State or Government expressed concern at the human loss suffered through natural disasters in the region and stressed the need for the timely provision of relief in humanitarian emergencies. In this regard they directed that a Natural Disaster Rapid Response Mechanism be created to adopt a coordinated and planned approach to meet such emergencies under the aegis of the SAARC Disaster Management Centre”.

15th SAARC Summit
Colombo, 3rd August 2009

Models of regional response

- **Coordination Response Model**

Assistance from member countries are pooled by the regional organisation which coordinates the response. Example: Euro-Atlantic Disaster Response Coordination Centre (EADRCC)

- **Assured Response Model**

Assurance of assistance is arranged by the regional organisation through prior negotiations and commitments which become binding on the member countries. Example: Regional Response Mechanism of Caribbean Disaster Response Agency's (CDERA).

- **Voluntary Response Model**

Each member country, on a voluntary basis, earmarks assets and capacities for regional standby arrangements for response and relief. Example: ASEAN Coordinating Centre for Humanitarian Assistance on Disaster Management (AHA)

Guiding Principles of VRM

- If a member country needs assistance in an event of a disaster, it may request such assistance from any other member country, directly or through the SDMC
- Requesting country will specify scope and type of assistance
- Assisting country to notify, directly or through the SDMC, the scope and terms of such assistance.
- Requesting country to provide, to the extent possible, local facilities and services for the proper and effective administration of the assistance.
- Requesting country to exercise overall direction, control and supervision of assistance within its territory.

Draft Agreement on NDRRM

- Preamble, 4 Parts and 22 articles
 - Part I: General Provisions
 - Part II: Disaster Preparedness
 - Part III: Emergency Preparedness
 - Part IV: Emergency Response
 - Part V: Institutional Arrangements
 - Part VI: Procedures
- Approved by 7 countries
- Likely to be signed during 16th SAARC Summit, 2010

Response Division in SDMC

- *Regional Emergency Operation Centre (REOC)* with standard interoperable communication and other equipments necessary for the operation of such a Centre;
- *Round the Clock Operation of the REOC* with 2 Supervisory and 6 Operating Staff in appropriate scale of pay as per the SAARC Rules;
- *Disaster Response Division* with three professionals - 1 Head and 2 Specialists supported by one Research Assistant and 1 Data Entry Operator - on the pattern of other Divisions of the Centre.

Regional Early Warning System

“Organizations and institutions responsible for Early Warning Systems for natural disasters in the SAARC member countries should share with SDMC, as feasible, the real time data/ information especially those related to the disasters/impending disasters which are likely to have regional implications in terms of affecting a particular country or more than one country”.

WMO/ESCAP Panel on Tropical Cyclones

- WMO/ESCAP Panel on Tropical Cyclones for Bay of Bengal and Arabian Sea 1973
- Regional Specialised Meteorological Centre (RSMC) in IMD
- Bangladesh, India, Myanmar, Pakistan, Sri Lanka and Thailand were initial members
- Maldives joined this Panel in 1982 followed by Sultanate of Oman in 1997

Responsibilities of RSMC

- Round the clock watch over the entire North Indian Ocean.
- Detection, tracking and prediction of cyclonic storms in Bay of Bengal and Arabian Sea.
- Issue of Tropical Weather Outlook once daily and an additional outlook at 1700 UTC in the event of a depression
- Issue of cyclone advisories to Panel countries 8 times a day.
- Issue of storm surge advisories.
- Implementation of the Regional Cyclone Operational Plan of WMO/ESCAP Panel.
- Preparation of comprehensive reports on each cyclonic storm.
- Continued research on storm surge, track and intensity prediction techniques.

Constraints of RSMC

- Wide gaps in observational network of weather and rainfall
- Large deficiencies in forecasting capabilities of the member countries of the panel
- Poor hydrological networks
- Lack of capacity and human resources

Emerging scenario

- Modernisation of IMD opening up possibilities of a stronger and more effective role that RSMC can play in regional Early Warning System
- SAARC Agreement on NDRRM shall open up possibilities of linking RSMC with SDMC
- SDMC can reinforce existing system of dissemination of warning to member countries of SAARC

Early Warning of Tsunami

- UNESCO-IOC initiative of Indian Ocean Tsunami Warning and Mitigation System within a Global Framework
- Pacific Tsunami Warning system and its constraints
- Tsunami and Storm Surge Early Warning System of the INCOIS
- Need to share real time warning and alert messages generated by the INCOIS system with the coastal countries of South Asia

Role SDMC can play

- SDMC can facilitate development and operationalisation of regional protocols for sharing real time Tsunami warning as well as creating synergy among Cyclone Warning Systems along South Asian coasts.
- Options and possibilities for the future



THANK YOU