

Geospatial Information for Disaster Risk Management in Asia-Pacific Region



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Coverage

- **ESCAP – brief introduction**
- **Disaster losses in Asia-Pacific region**
- **Disaster impacts to low capacity countries**
- **Disaster impacts on Millennium Development Goals (MDGs)**
- **Current problems, HFA and role of geo-referencing for DRM**
- **ESCAP initiative: Improving disaster risk preparedness in the ESCAP region**
- **Outcomes of the EGM in Feb 12 in BKK & regional workshop for SSWA & NCA (sub-regions) in July 12 in KTM**
- **Ongoing activities and way forward**

ESCAP -Regional Arm of the United Nations

- The regional development arm of the United Nations for the Asia-Pacific region -1 of the 5 United Nations regional commissions
- 62 Governments – 58 within the region, i.e., from Turkey in the west to Kiribati in the east, and from the Russian Federation in the north to New Zealand in the south
- The largest United Nations body/commission serving the Asia-Pacific region (in terms of population & land area) with over 600 staff (about 200 P-staff)



ESCAP - Regional Arm of the United Nations





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ESCAP - Regional Arm of the United Nations

Established in 1947 with its headquarters in Bangkok, Thailand since 1949, ESCAP seeks to overcome some of the region's greatest challenges. It carries out work in the following areas/subprogrammes:

- Macroeconomic Policy and Development
 - Statistics
 - Trade and Investment
 - Transport
 - Environment and sustainable development
 - **Information and Communications Technology and Disaster Risk Reduction**
 - Social Development
 - Sub-regional Offices (4)
-
- **Has 5 regional institutions - APCTT, APCICT, UNAPCAEM, CAPSA, SIAP**

**Policy
analysis**



**Advisory
Services**



**Technical
Cooperation
Projects**



**Capacity
Building**



ESCAP -Regional Arm of the United Nations

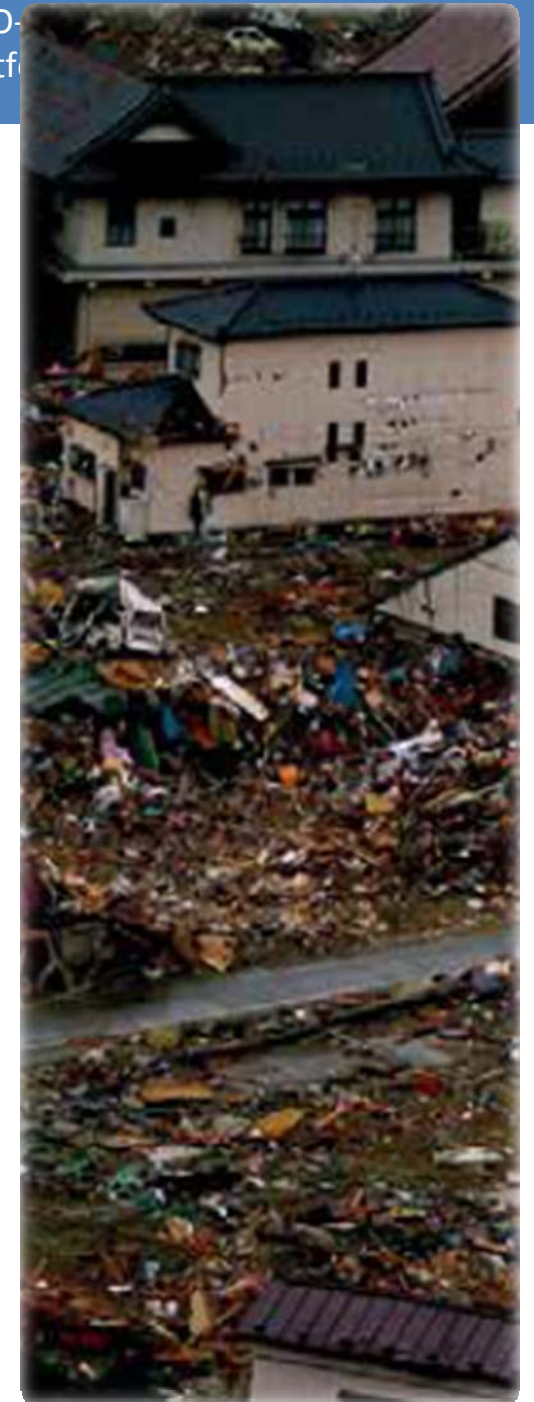
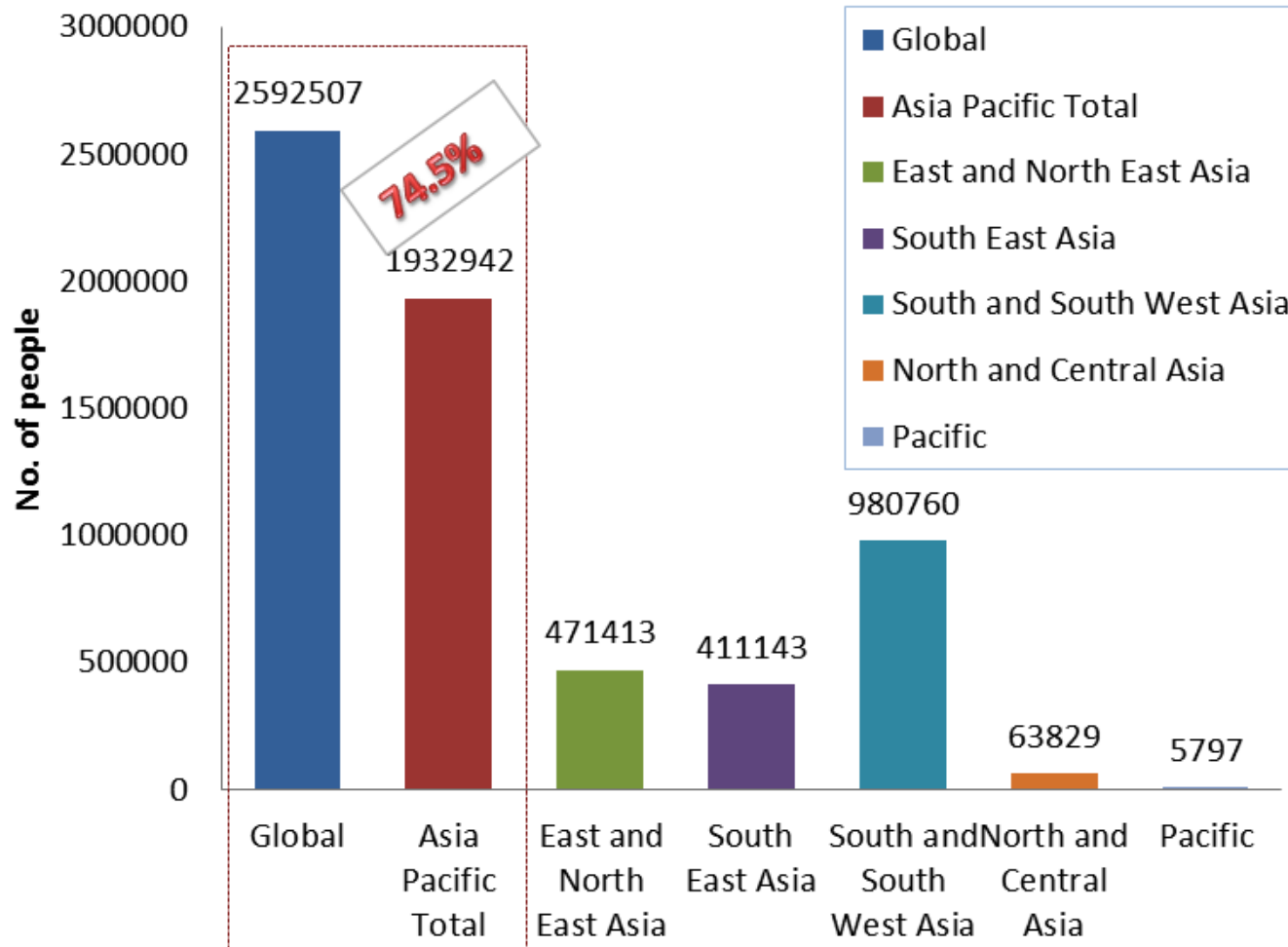
“The promotion of inclusive and sustainable economic and social development in Asia and the Pacific, with the overall goal of achieving the Millennium Development Goals.

Collectively, the eight mutually supportive subprogrammes aim to achieve the following three development results:

1. Member Governments have more **effective, inclusive and sustainable development policies** for addressing development from a multi-disciplinary perspective, to narrow development gaps and build resiliency;
2. Global processes are shaped by a **stronger coordinated regional voice** and countries are supported in implementing international commitments;
3. Regional **cooperation mechanisms and institutional frameworks** are in place to promote regional integration and inclusive development.”

75% of deaths due to disasters from 1970 to 2011 from Asia-Pacific

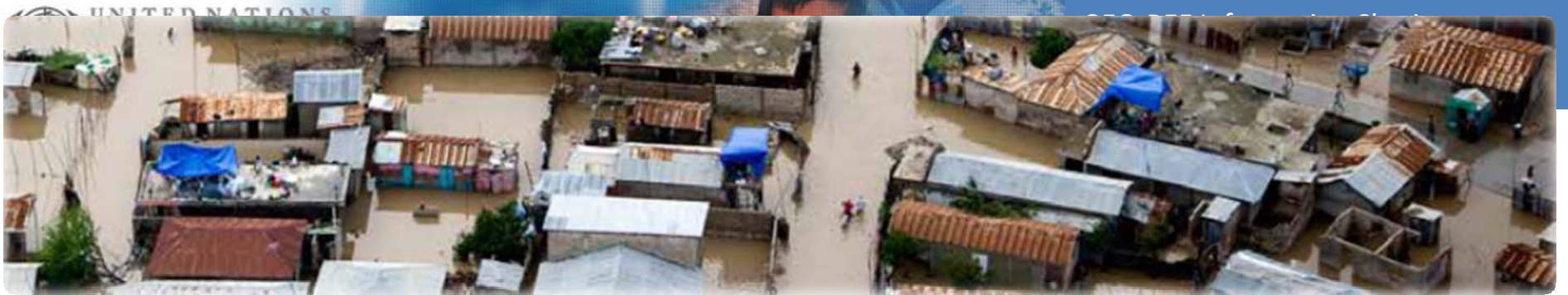
No. of people killed in disasters* (1970-2011)



TOP 10 DISASTERS BY NUMBER OF DEATHS (2011)

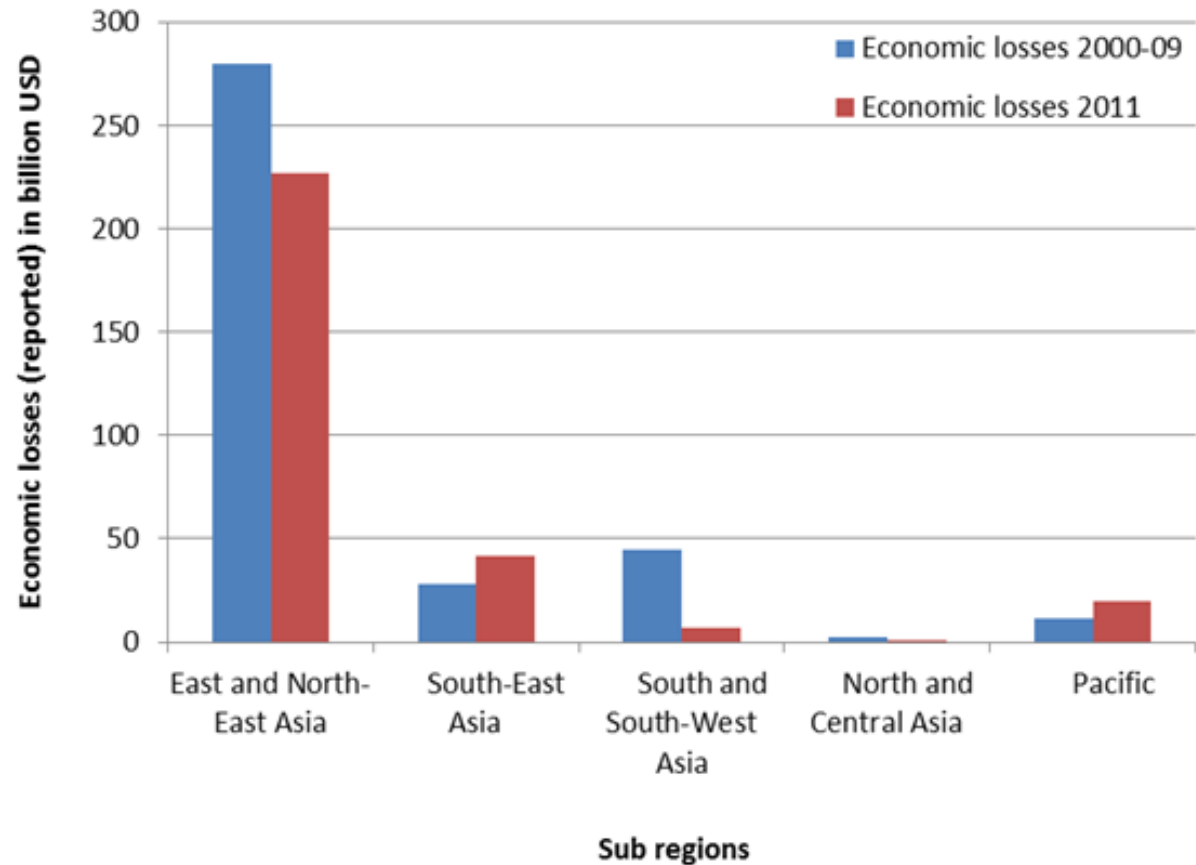
Event	Date	Country	Deaths
Earthquake/Tsunami	March	Japan	19,846
Trop. Storm Sendong	December	Philippines	1430
Flood	January	Brazil	900
Flood	August - December	Thailand	813
Earthquake	October	Turkey	604
Flood	August - November	Pakistan	509
Storms/Tornadoes	April	United States	350
Flood	August-November	Cambodia	247
Flood	June	China, P Rep	239
Flood	August-October	India	204





Economic losses in 2011 Vs. 2000-09

Economic losses in 2011 alone equate to 80% of all losses between 2000 and 2009



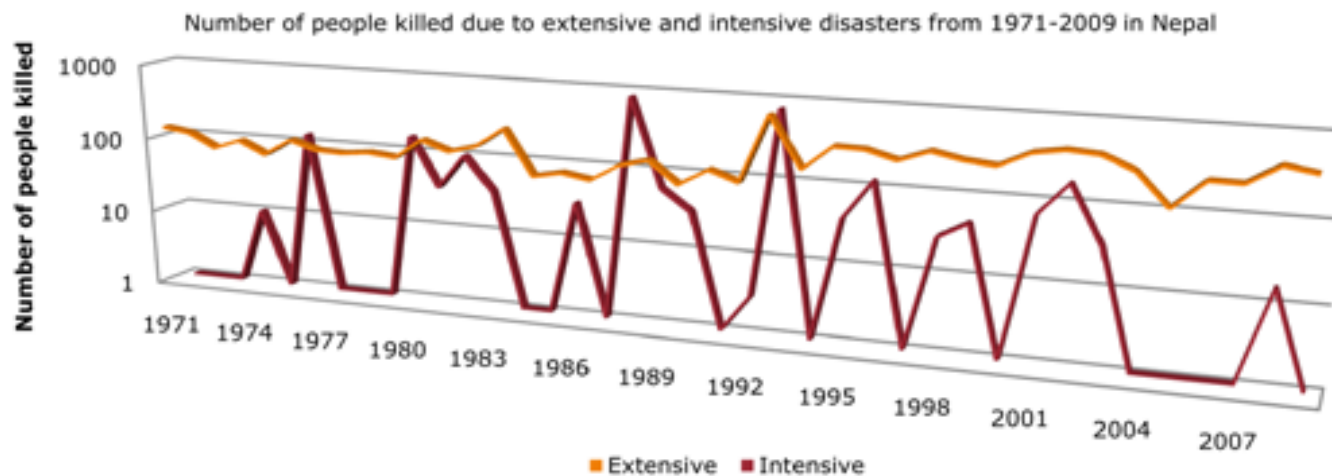
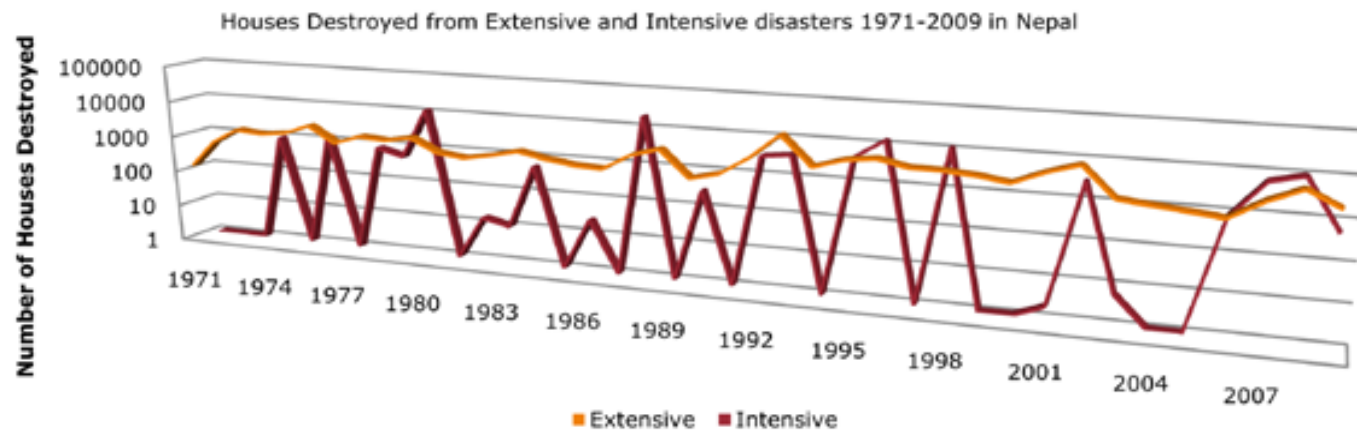
TOP 10 DISASTERS ECONOMIC LOSSES (2011)

Event	Date	Country	Damage*
Earthquake/Tsunami	March	Japan	210
Flood	Aug	Thailand	40
Earthquake	February	New Zealand	16
Storms/Tornadoes	April	United States	15
Drought		United States	10
Storms/Tornadoes	May	United States	9
Hurricane Irene	Aug-Sep	United States	7
Flood	June	China, P Rep	6
Flood	Apr-Jul	Colombia	5
Flood	September	China	4

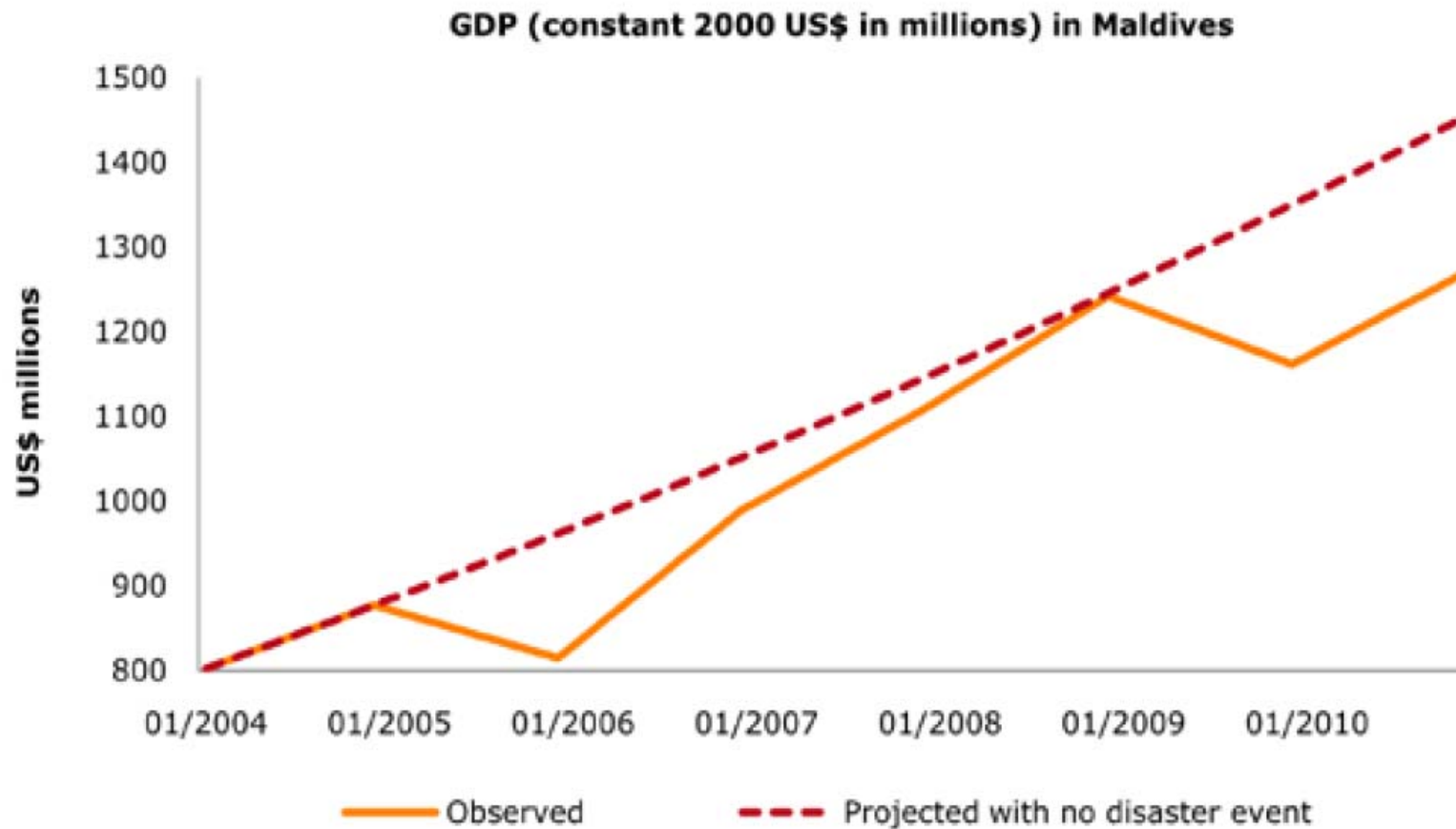
*in US\$ billion



For low capacity countries, the cumulative effect of small scale disasters increases vulnerability

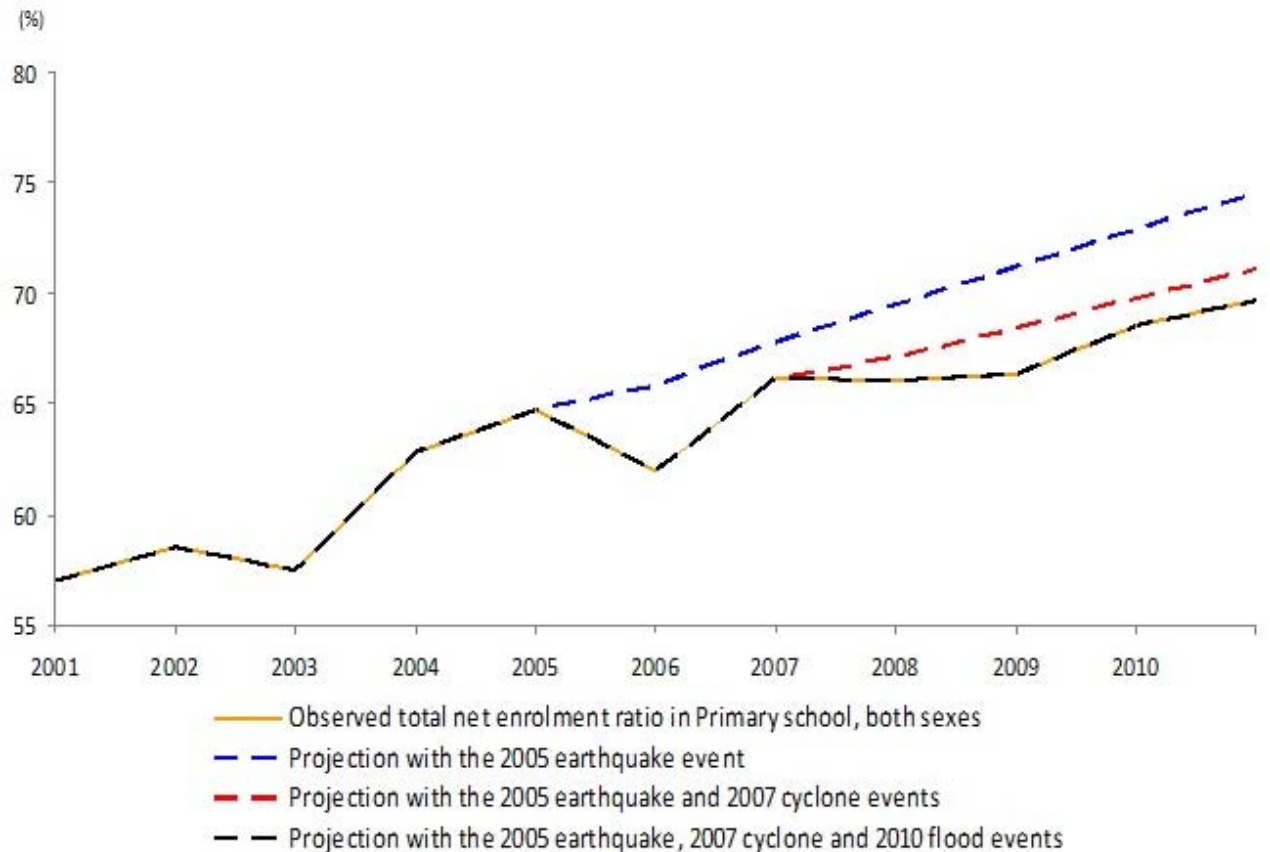


Example of the Maldives



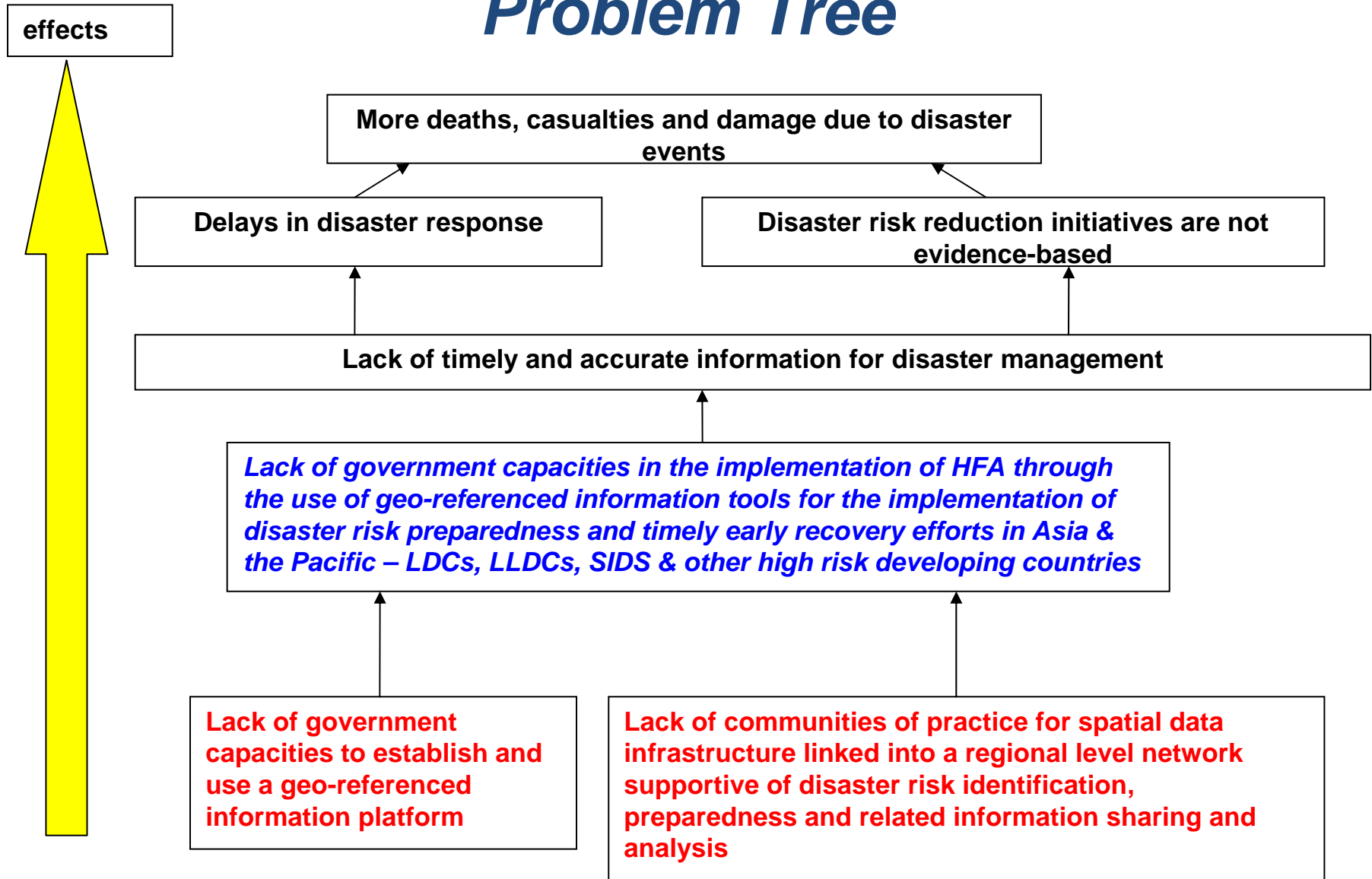
Progress towards achieving the MDGs is undermined

Primary school enrolment reduced after disasters in Pakistan





Problem Tree



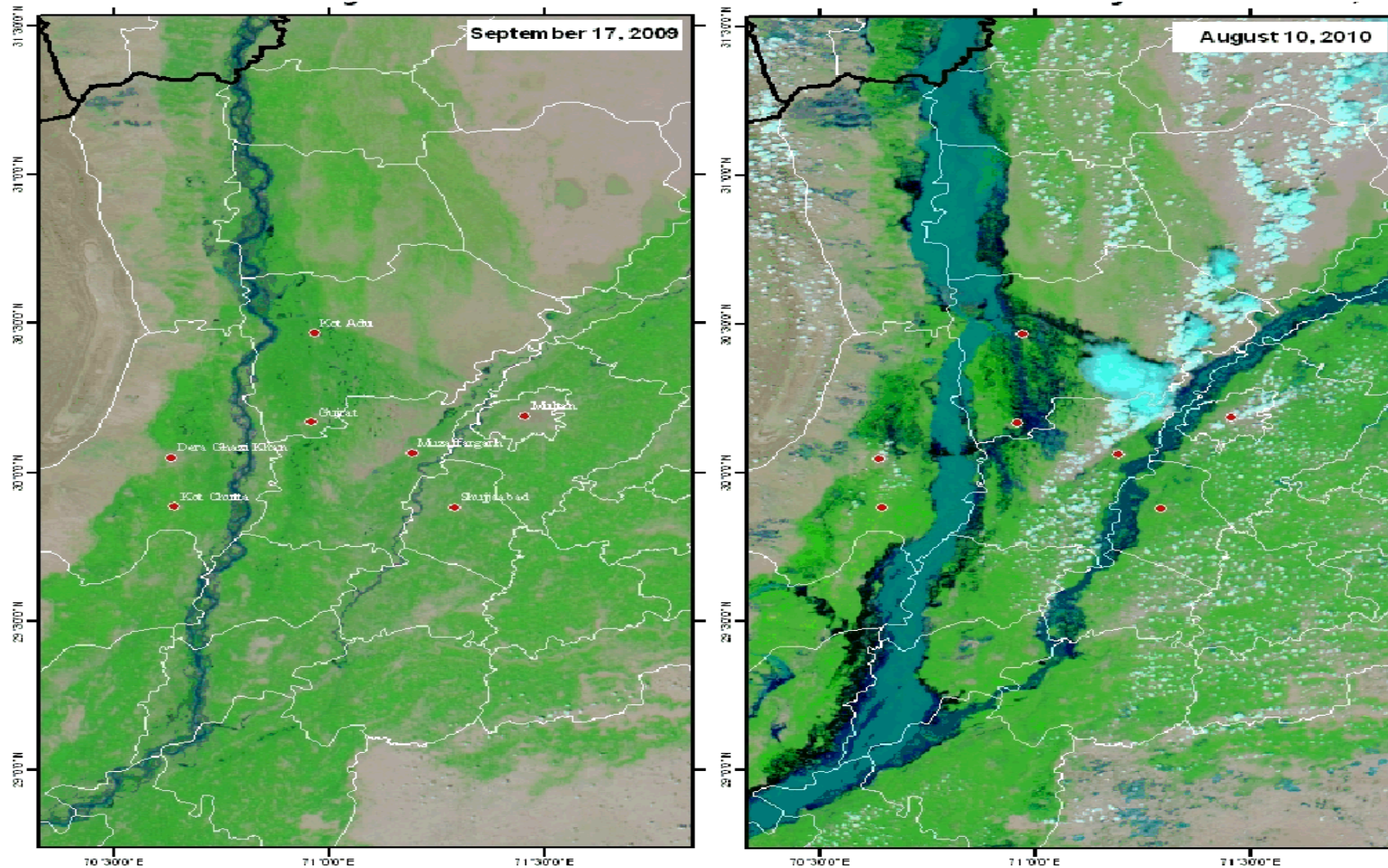
Hyogo Framework for Action (HFA): Priorities for action 2005-2015: Outcome of World Conference on Disaster Reduction, Kobe, Japan 2005

1. **Policies and governance:** *ensure that disaster risk reduction is a national and local priority with strong institutional basis for implementation.*
2. **Risk identification:** *identify, assess and monitor disaster risks and enhance early warning.*
3. **Knowledge:** *use knowledge, innovation and education to build a culture of safety and resilience at all levels.*
4. **Reducing the underlying risk factors:**
 1. *Environment and natural resources management.*
 2. *Social and economic development practices.*
 3. *Land-use planning, building codes and other technical measures.*
5. **Strengthen disaster preparedness for effective response**

Role of Geospatial Information in accelerating HFA implementation

HFA Priority of Action	Specific role that Geo-information could play
Policies and governance	Nationwide risk assessment, Spatial mapping for land use planning incorporating risk reduction strategies...
Risk identification	Spatially - identify, assess and monitor disaster risks to enhance the effectiveness of early warning systems.
Knowledge	Understanding risk – unknown to known, capturing risk dynamics, ecological foundations of disaster risk..
Reducing the underlying risk factors	Baseline information for - Environment and natural resources management. Social and economic development practices. Land-use planning, building codes and other technical measures.
Strengthen disaster preparedness for effective response	Access to geo-spatial info for disaster monitoring, damage and loss assessment (DaLA), Post-disaster recovery and rehabilitation planning

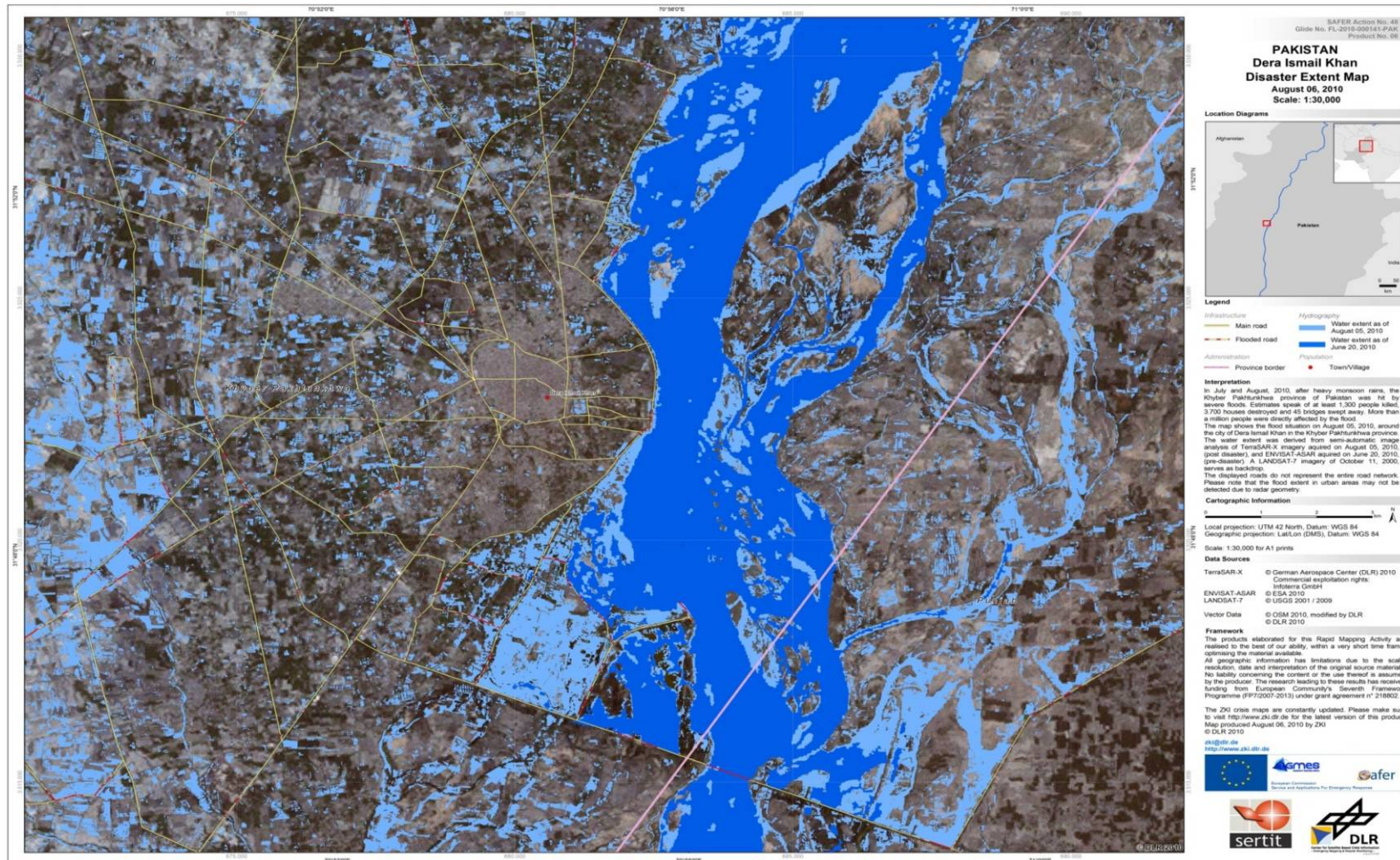
Example – Geospatial information for DRM



Indus valley before (Sept 2009) and after 2010 Pakistan floods (Sept 2010) – highlighting extensive risks through out the river basin (GIS databases with census and survey data not shown in the figure due to limit of the resolution) –[MODIS Terra Image](#)



Example – Geospatial information for DRM



Intensive flood risk captured of Dera Ismail Khan District, captured during Pakistan floods, Aug 6, 2010

Mandates – Geospatial information for DRM

Hyogo Framework for Action or HFA (2005-2015): has set the goals and priorities for building the resilience of the nations and community to disasters.

- **UN-GGIM:** The High Level Forum on United Nations Global Geospatial Information Management (UN-GGIM) in Seoul, last year spelt out the need for full interoperability of multi-dimensional geospatial information and
 - integration with other data sources at national, regional, and global level, in order to provide an effective information base for DRM and development.
- **Rio+20:** United Nations Conference on Sustainable Development (UNCSD) June 2012, highlighted the importance of comprehensive hazard and risk assessments, and knowledge- and information sharing, including reliable geospatial information

ESCAP initiative: Improving disaster risk preparedness in the ESCAP region

- ESCAP has embarked on a project entitled “Improving disaster risk preparedness in the ESCAP region”.
- The project aims to address the issue of non-interoperability of geo-reference/geospatial information and strengthen the capacity of governments (disaster management authorities) in Asia-Pacific region (LDCs, LLDCs, SIDS, and some high risk developing countries), in the implementation of the HFA through the use of geo-referenced/geospatial information tools for the implementation of disaster risk preparedness, and timely early recovery efforts or
- Enhance the capacity of ESCAP member states towards managing the disaster risks more efficiently and effectively, and reduce losses, and build resilience to hazards through the use/sharing of standardized geo-spatial information among and within the countries.

Expert Group Meeting on Geo-referenced Disaster Information Management System in Asia-Pacific Region held in Bangkok in February 2012-**Outcomes**

- Discussion of the findings of the geo-referenced information needs and gaps assessment survey,
- Online communities of practices (COP) for spatial data infrastructure linked to a regional level network supportive of DRM
- Development of geo-referenced information in support of DRR (Geo-DRM) and
- associated capacity development activities for developing countries: (i) training workshops for policy makers (awareness) and professional/technical staff (in-depth training where Geo-DRM will be developed) and technical assistance/advisory services.

Regional Workshop on Geo-referenced Disaster Information Management System for South and South-west Asia and Central Asia held in Kathmandu in July 2012

- Geo-referenced information for disaster risk management (Geo-DRM) – concepts, needs
- Geo-DRM systems Overviews
- Geo-DRM systems at regional/sub-regional levels
- Country presentations
- Institutional and policy issues and networking
- Demonstrations of Geo-DRM system
- Way forward
- Study visit

Regional Workshop–outcomes

- Harnessing the potentials of Geo-DRM portal for facilitating **data sharing** was realized. The Geo-DRM portal was envisaged as an integral part of ESCAP DRR Gateway.
- The Geo-DRM was recommended to be dovetailed to the existing initiatives at country as well as sub-regional levels. **High level dialogues** were advised to initiate with South Asian Association of Regional Cooperation (SAARC) and similar other initiatives through ESCAP SRO-SSWA, New Delhi, and SONCA , Almaty.
- **Technical assistance for feasibility** study towards implementing Geo-DRM: requested by Afghanistan, Bangladesh, Bhutan, Kyrgyzstan, Maldives and Nepal followed up by capacity development training through ESCAP RESAP education & training network- recommended.

On-going activities/way forward

- Work to develop national geo-DRM portals and linkage with regional level network (Asia-pacific Gateway for DRM) and to establish Community of practice (COP) – including dialogues with subregional organizations, preparation for technical assistance missions;
- Preparation on Capacity development activities: Awareness building workshop for South-east and East Asia, and Pacific – similar to that we organized for South and South-west Asia and Central and North Asia; and
- Indepth training for selected countries including for those countries where geo-portals will be established.
- Launch of Geo-DRM network and COP during an EGM and Review Regional Workshop.
- Challenges: sustainability of national geo-portals; network of experts/COP.



Right Information to right people at right time makes a difference
but possible if there is regional cooperation in place

Thank you very much!!

<http://www.unescap.org>