

‘Information and Communication Technology and Disaster Risk Reduction’ – ADPC Experience

Presentation at Thematic Session on ‘*ICT and Disaster Risk Reduction*’

Conference on “*Building a Local Government Alliance for Disaster Risk Reduction*”

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Role of ICT in ADPCs Programmes on Disaster Risk Reduction

- 1. Establishing and promoting national disaster management systems and tools**
- 2. Use of ICT in end to end Early Warning Systems**
- 3. Improved climate forecasting systems and their application**
- 4. Risk Assessment Programmes**
- 5. ADPC Capacity Building Programmes**
- 6. ADPC Projects using ICT**

1. Establishing and promoting national disaster management systems and tools

eg; Strategic National Action Plans (SNAP) for DRR in Cambodia

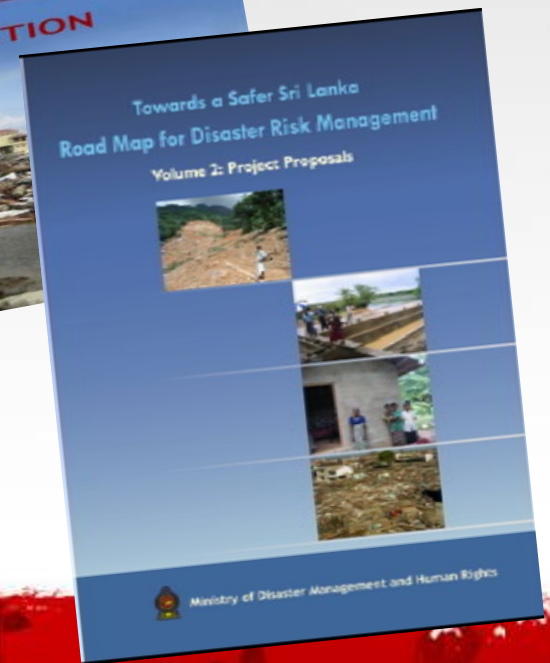
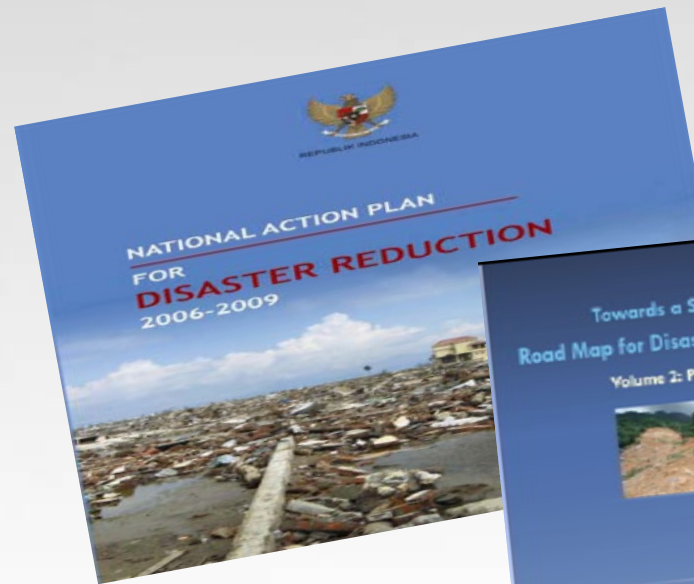
SNAP Thailand

- Sri Lanka road map
- Indonesia DRR NAP
- Laos National Action Plan
- Vietnam DRR Strategy
- Bangladesh CDMP
- India DRR framework
- Pakistan DRR framework

Community Processes

Hazard and Risk Assessment Systems

Multi Hazard Early Warning Systems

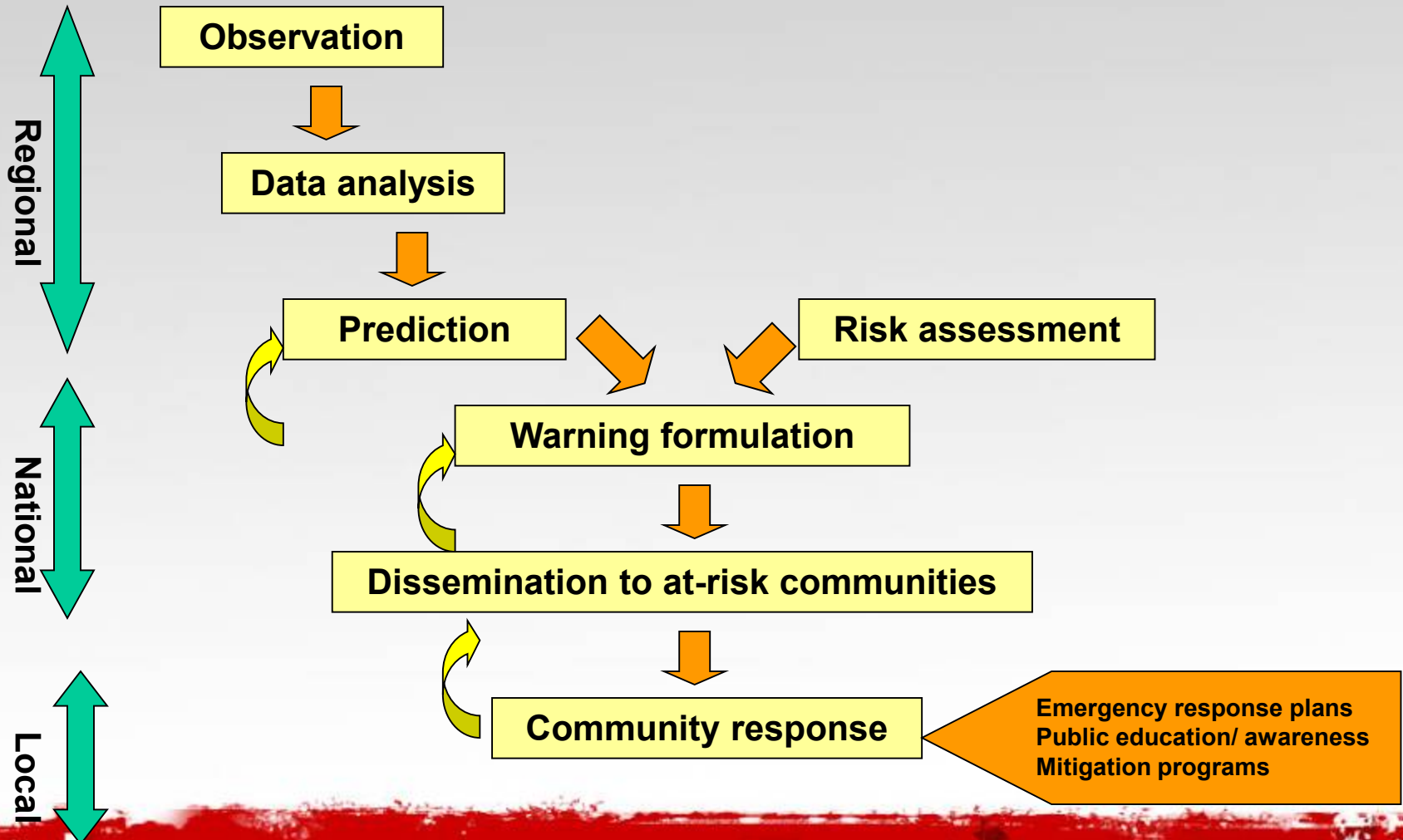


2. Use of ICT in end to end Early Warning Systems

ADPC's Regional Integrated Multi-Hazard Early Warning Systems (RIMES) for Africa and Asia (Indian Ocean Rim Countries) initiated in 2005 as part of Indian Ocean Tsunami Warning System established under UNESCO IOC

- **Providing localized severe weather information**
- **Short term Weather information upto 3 days for member countries**
- **Seasonal climate outlook**
- **Capacity building for member countries**
- **In-house R&D activities**
- **Climate Change Impact Analyses** by analyses of APCC scenarios, statistical downscaling, analyses of observed Climate trend and future projections, Development of Regional Climate Models

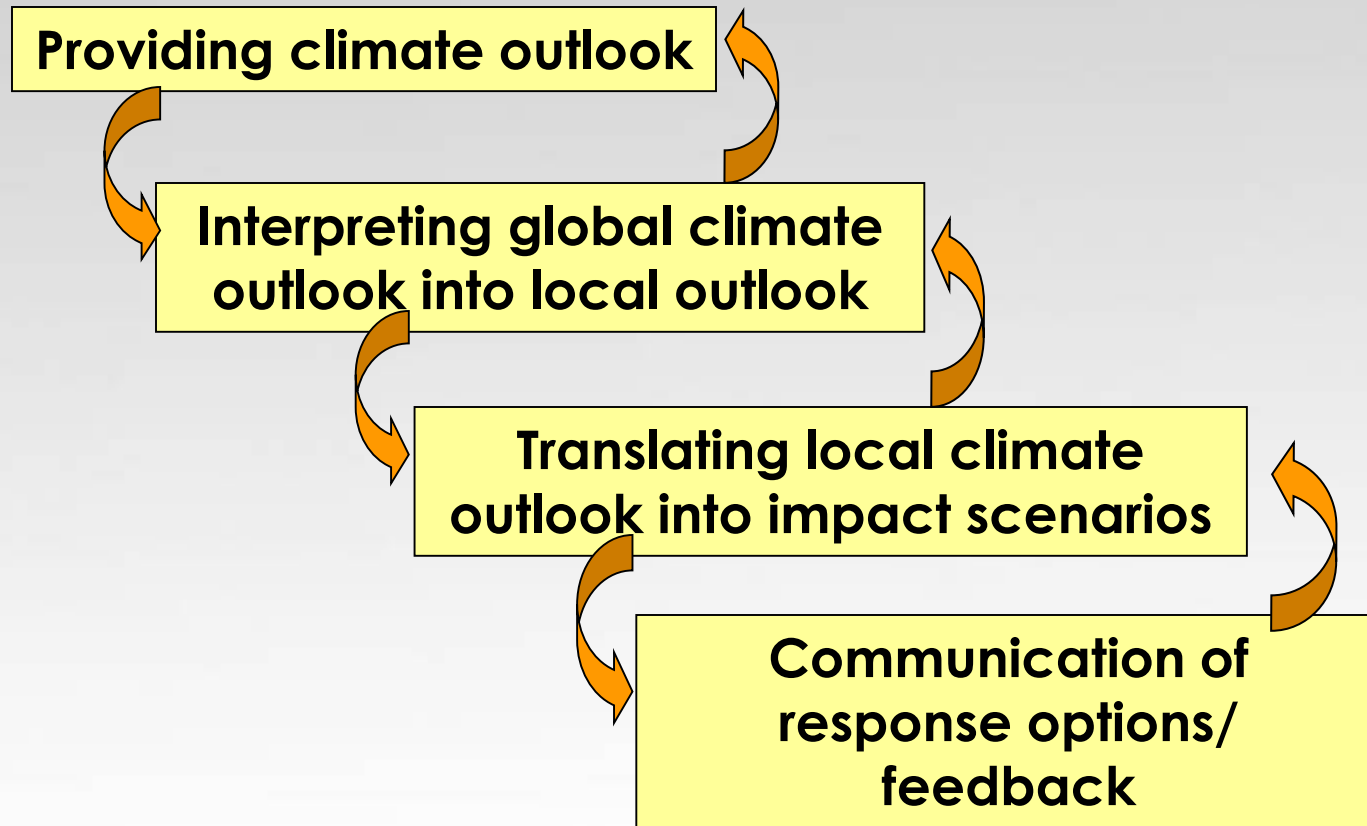
End-to-end multi-hazard Early Warning System



3. Improved climate forecasting systems and their application

- Setting up institutional framework for climate forecasting applications in Indonesia to develop crop management strategies under the support of BMG; National Meteorological Organization, IPB; Bogor Agricultural University
Directorate of Plan Protection, Department of Agriculture
- Climate forecast applications for disaster management in the Philippines, the system is internalized and funded by local government in Dumangas, Philippines

End-to-end climate information generation and application system



Annual monsoon forums at start and end of season – Myanmar, since 2006

Forecast applications for disaster management , Dumangas Agro-Met Station, Philippines , Photo courtesy: PAGASA



4. Risk Assessment Programmes

The Comprehensive Disaster Management Programme (CDMP) implemented in Bangladesh conducts risk assessments in Dhaka, Chittagong, and Sylhet City Corporation Areas by using the following;

Seismic Hazard Assessment

Active Fault Study, Engineering Geology Study, Seismic Hazard Mapping

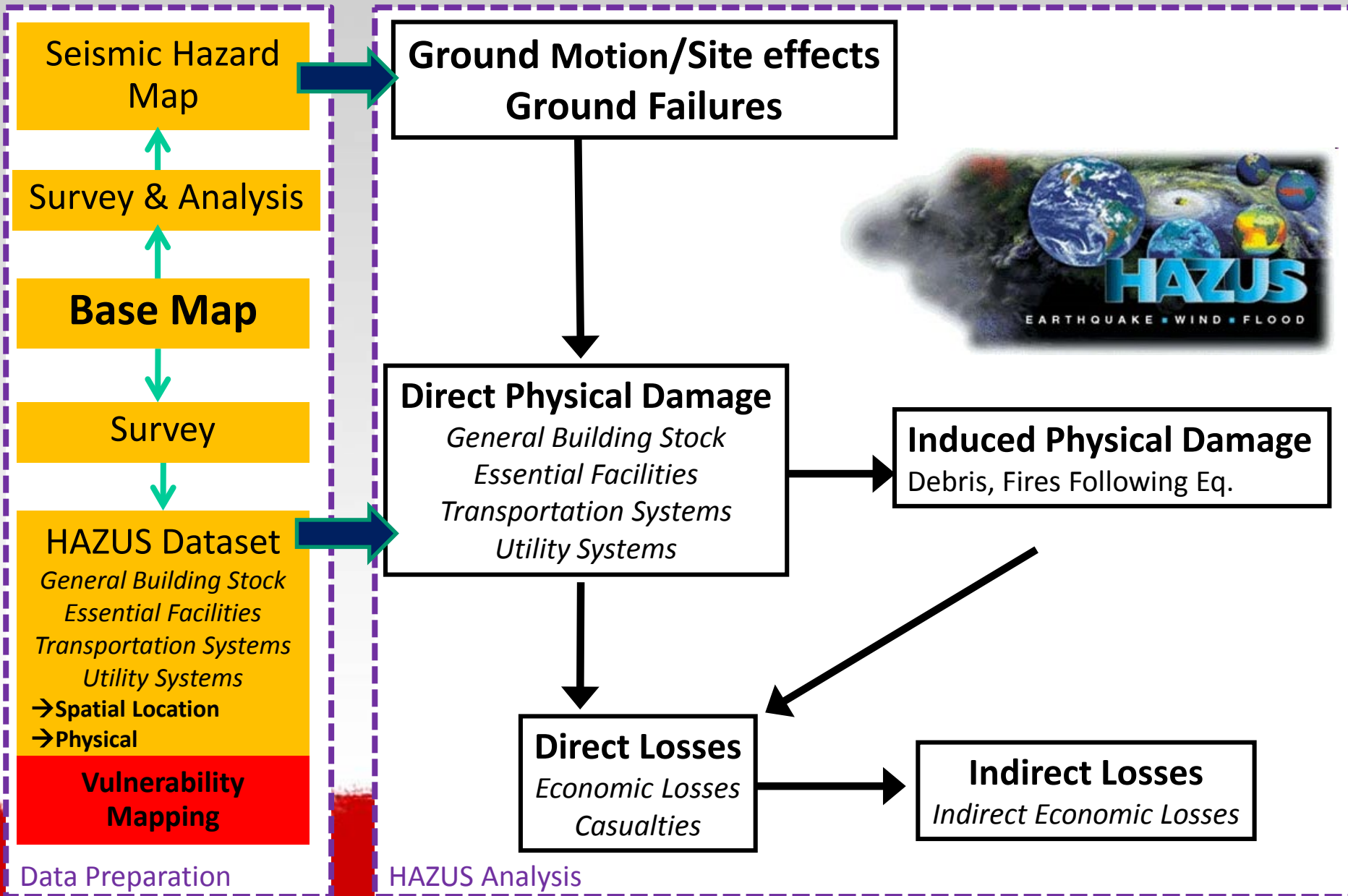
Vulnerability Mapping

Building Stock, Essential Facility, Population, transportation System, Utility System

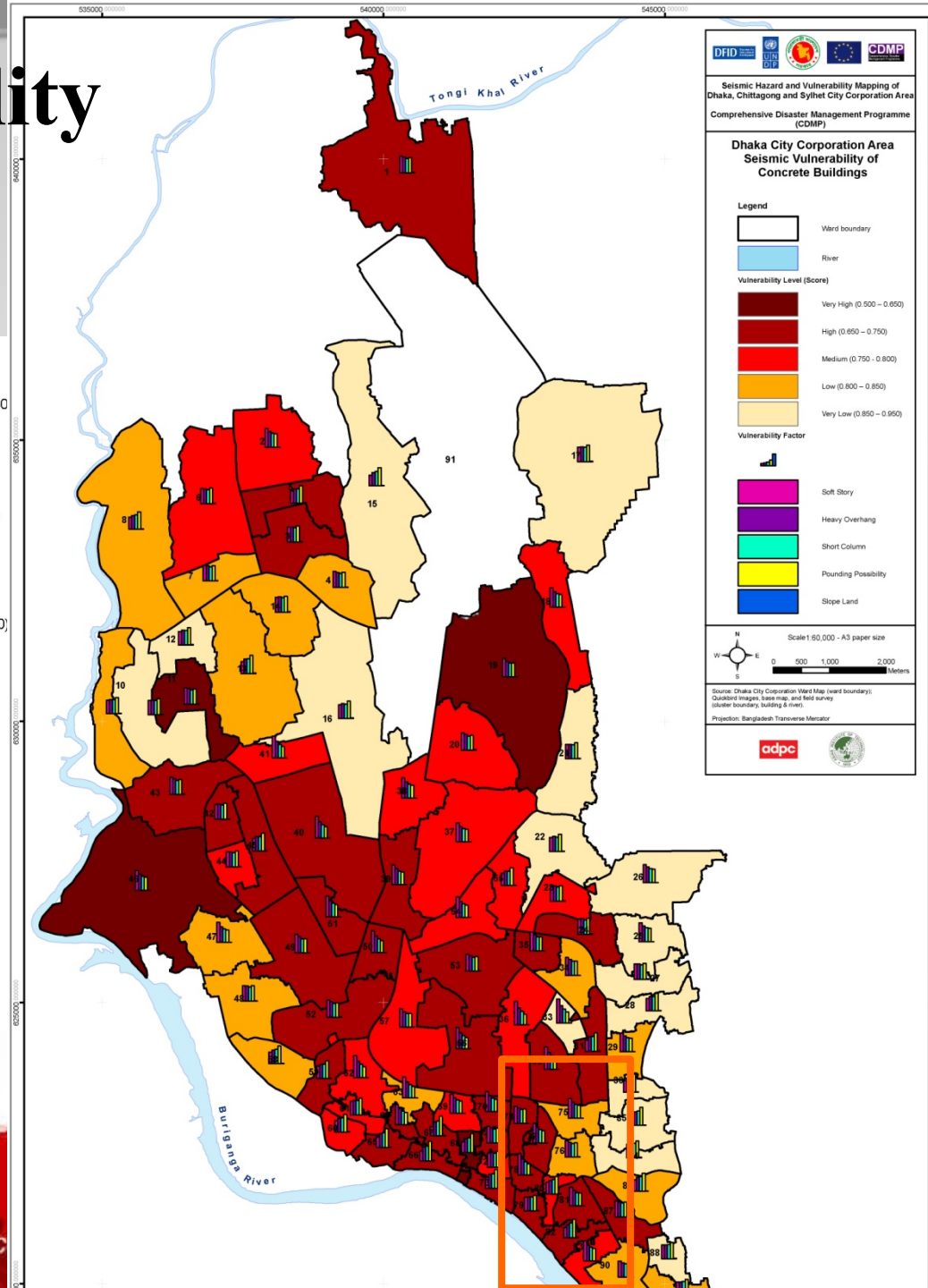
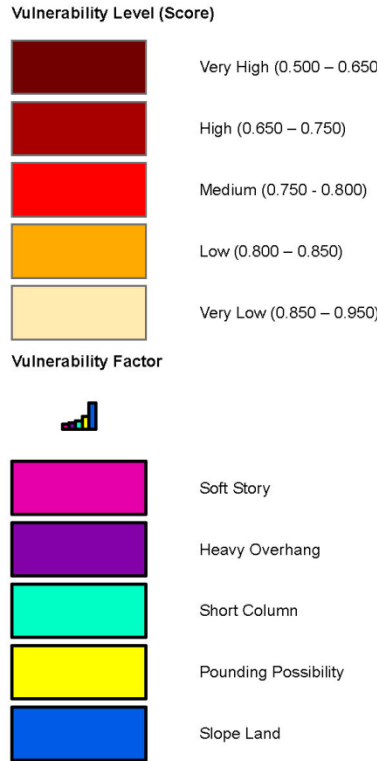
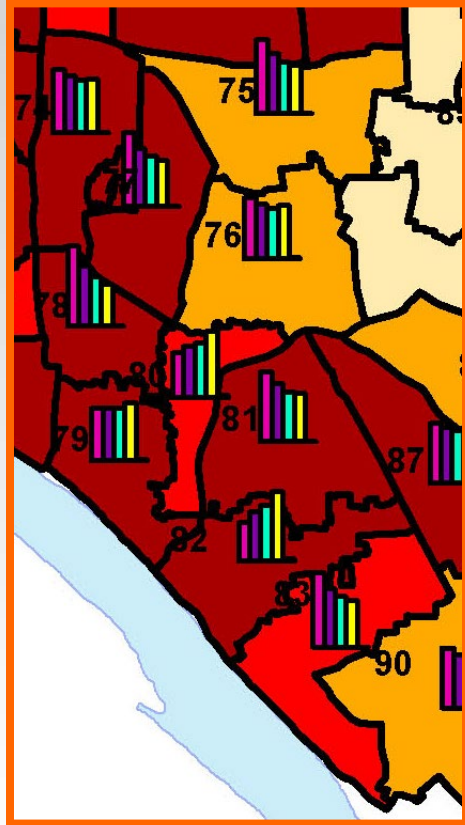
- Loss Estimation

Ground Motion & Ground Failure, Building Damage, Utility Systems Damage & Restoration, Direct Economic Loss, Casualty, Fires & Debris

Risk Assessment



Building Vulnerability



5. Capacity Building Programmes conducted by ADPC which use ICT tools

- Earthquake Vulnerabilities Reduction in Cities
- Flood Disaster Risk Management
- Mainstreaming Disaster Risk Reduction in Local Governance
- Incident Command System
- Urban Disaster Risk Management (TOT)
- Use of GIS/Remote Sensing in DRM
- Community Based Disaster Risk Management
- Contingency Planning
- Flood Preparedness Programme at Provincial and District Levels

6. ADPC projects which use ICT tools in implementation

1. Asian Urban Disaster Mitigation Programme
2. Program for Hydro-Meteorological Disaster Mitigation in Secondary Cities in Asia (PROMISE)
3. Comprehensive Disaster Management Program (CDMP)
4. Strengthening Household Abilities to Responding to Development Opportunities (SHOUHARDO) Project
5. Program for Regional Capacity Enhancement for Landslide Impact Mitigation (RECLAIM)
6. Sustainable Capacity Building on Urban Disaster Mitigation in Asia (CASITA) Project
6. Regional Stocktaking and Mapping of DRR interventions in Asia and the Pacific

Regional training course on Geographical Information Systems and Remote Sensing for Disaster Risk Management

Initiated in 2007, the course has a duration of 2 weeks. 3 courses have taken place

Partners

ADPC

The Geo-informatics Centre of the Asian Institute of Technology,
International Institute for Geo-Information Science and Earth Observation (ITC)

Some of the key tasks that participants are taught :

- apply GIS and RS to hazard, vulnerability and risk (HVR) assessment,
- Integrate HVR assessments in urban planning, infrastructure planning, and locating of critical facilities and human settlement
- assess spatial data availability and understand the importance, of spatial data infrastructure (SDI), for data sharing by organizations involved in disaster risk management,
- apply GIS and RS for designing implementations of large scale early warning systems

Some of the key tasks that participants are taught (Cont.,):

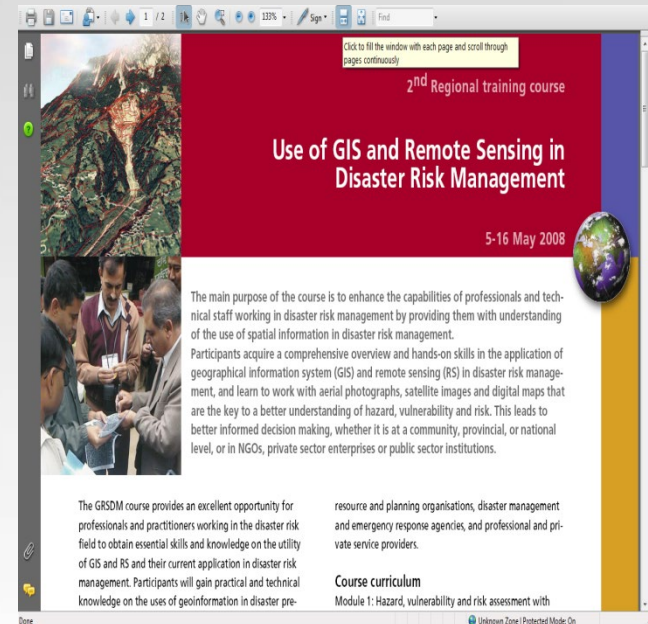
- use participatory GIS (PGIS) at community level
- apply remote sensing data and image processing techniques,

Type of Participants:

- Disaster management professionals in;
- Government Organizations,
- Municipal Councils,
- NGOs,
- International Organizations and
- Academic institutions

Modules covered:

- Disaster Risk Management
- Data sources and integration
- Hazard Vulnerability and capacity assessment
- Disaster preparedness, response and recovery



Web based CBDRM Course

Through exercises and simulations participants practice risk assessment and risk management planning.

The duration of the course is **10 days and 18 such courses** have been held to date. The following is taught to participants;

- Institutionalization of the community based disaster risk management in the policy, planning and implementation of the government ministries and departments and the that of the donors in target countries;
- Implementation of innovative programs to explore new dimensions in the CBDRM practice;
- Development of frameworks and tools to support the work of decision-makers and practitioners;
- Development of databases and publications to map the CBDRM practices in various regions;
- Development of new training tools to enhance the capacity of practitioners;

6. Sustainable Capacity Building on Urban Disaster Mitigation in Asia using IT&C Learning Tools (CASITA)

Phase I: April 2003- Mar 2004,

Phase II: Jan 2005- Dec 2006,

funding support from EuropeAid, under Asia IT&C program

Project Objectives

To build knowledge in Asia on modern urban disaster mitigation tools & methods through the inclusion of relevant and up-to-date disaster management components in the university curricula of urban-planning courses in several Asian universities and training institutes by intensifying co-operation between Europe and Asia in the field of information technology and communication

Project Activities

-The project provided support to institutionalize academic courses on disaster mitigation in existing urban planning and geography curricula at university level

-To support knowledge sharing cost-effectively, an Internet-based platform for e-learning was also developed.

Stakeholders

The project involved 26 University staff from 14 different Universities and training institutes in India, Nepal, Pakistan, Sri Lanka, Indonesia, Thailand, Philippines, Lao PDR and Vietnam.

Partners

The International Institute for Geo-information Science and Earth Observation (ITC), The Netherlands and Bonn University, Germany

7. Regional Stocktaking and Mapping of Disaster Risk Reduction Interventions in Asia and the Pacific

Funded by the ADB the Project commenced in February 2009 and will continue till June 2010.

Key Outputs of the Project

1. Inventory of Risk Assessment in Asia Pacific
2. Regional Stock take of DRR initiatives
3. Producing Interactive Knowledge Maps

Impact

Regional Stakeholders provide coherent support to the DRR efforts of national governments and address more effectively, regional DRR challenges

Outcome

Regional policy makers are able to identify DRR progress and gaps for further Interventions

Stocktaking is designed to improve

- Information sharing on past, ongoing and planned DRR initiatives for 2005-2009
- Better coordination and program planning by regional stakeholders
- Enhanced use of resources
- Reduced duplication
- Sharing of lessons learned
- Identification of gaps in DRR efforts at a regional level

Implementation challenges faced by ADPC.....

Thank you