



GIS for Disaster Risk Management Level II

An Advanced Course

1 – 12 November 2010, Bangkok, Thailand



Individuals and organizations working in disaster management often require a set of tools for hazard and risk assessments for enabling them to formulate risk mitigation and preparedness plans. Location plays a critical role in hazard occurrences as well as its impacts. A geographical information system (GIS) is an important tool to integrate various spatial datasets for a comprehensive multi-hazard risk assessment.

This course deals with the procedures to collect and analyze spatial data for hazard and risk assessments for various natural and human-induced hazards, providing a number of choice options to the professionals participating in this course (depending on their interests and background) for evaluating specific types of hazards and associated risk.

OBJECTIVE

The main objective of this course is to provide knowledge and skills in multi-hazard risk assessment to the professionals with GIS and Remote Sensing (RS) background. Participants will gain practical knowledge on uses of GIS and RS not only in hazard and risk assessment, but also in loss estimation and multi-criteria analysis for taking a decision.

COURSE CONTENT

Module-I: Hazard, Vulnerability and Risk (HVR)

- Introduction to HVR
- Spatial characteristics of HVR
- Spatial data sources and referencing systems
- Role of GIS and RS for HVR assessment

Module-II: Multi-Hazard Risk Assessment

- Introduction to multi-hazard risk assessment
- Elements at risk and their classifications
- Elements at risk mapping and database creation
- Spatial analysis for multi-hazard risk assessment
- HVR assessment for floods/earthquakes/ landslides

Module-III: Loss Estimation

- Loss estimation techniques
- Risk curves and estimation of annual loss
- Loss estimations for multi-hazards

Module-IV: Cost-Benefit Analysis

- Tangible and intangible damages
- Financial and economic evaluations
- Cost-benefits analysis of DRR measures

Module-V: Participatory GIS (PGIS)

- Introduction to PGIS
- Designing a PGIS project
- Data collection and implementation

Module-VI: Project

- Participants will be assigned small projects related to use of spatial data in risk assessment and necessary guidance will be provided.

SOFTWARE TO BE USED

Fifty percent of the course comprises of hands-on exercises which will be done using ILWIS (a free, open source GIS software).

STARTING/END DATE AND LOCATION

1-12 November 2010 (two-weeks) in Bangkok, Thailand.

BENEFITS

Participants will be able to accomplish the following at the end of the training:

- understand the spatial and quantitative aspects of hazard, vulnerability and risk
- spatial data analysis and integration
- hazard, vulnerability and risk analysis for multi-hazards (e.g. earthquakes, floods, and landslides).
- carry out loss estimation for various disasters
- cost-benefit analysis for various disaster risk reduction projects
- understand the concept of PGIS and its applications.

PARTICIPANTS

The training course is designed for the professionals who have a basic knowledge in GIS and RS and who are interested in multi-hazard risk assessment using such tools. This course will be suitable for professionals working in government organizations, municipalities, NGOs, international organizations and academic institutions.

ORGANISING INSTITUTES

The *Asian Disaster Preparedness Center (ADPC)* is a lead regional resource center dedicated to disaster reduction in Asia and the Pacific region and it is located in Bangkok, Thailand. ADPC works with governments, NGOs and communities of the Asia and Pacific region to strengthen their capacities in disaster preparedness, mitigation and response through professional training, technical assistance, regional program management and information and research. It has now been recognized as an Inter-governmental Organiza-

tion with effect from 28 February 2005 with a mandate to expand disaster management and mitigation activities in various countries.

For more information: www.adpc.net

The *Geoinformatics Center of the Asian Institute of Technology (AIT)* in Thailand is a non-profit center for training and capacity building in Remote Sensing, GIS and GPS technologies. It was established at AIT in 1995. The Center has undertaken a number of disaster risk assessment projects in south and south-east Asia, drawing participants from more than 25 countries within the Asia-Pacific region and to date more than 1,000 persons have been trained.

For more information: www.geoinfo.ait.ac.th

The *Faculty of Geo-Information Science and Earth Observation (ITC)* of the *University of Twente (UT)* provides international education, research and project services in the field of geo-information science and earth observation using remote sensing and GIS. The aim of ITC's activities is the international exchange of knowledge, focusing on capacity building and institutional development in developing countries and emerging economies. The Faculty ITC is an associated institution of the United Nations University (UNU). The cooperation between ITC and the United Nations University is directed at developing and carrying out a joint programme on capacity building in disaster management and in land administration, and at disseminating knowledge on these and directly related issues.

For more information: www.itc.nl/unu/dgim (ITC) and www.utwente.nl/en (UT)

COURSE FEE

The tuition fee is US\$ 2,000 per person which covers cost of resource input, set of training materials, refreshments during the training sessions, transportation for study visits (if any), a social/cultural visit in the weekend. The tuition fee does NOT include accommodation (US\$ 40-50 per night), living expenses (DSA) and air-fare.

LANGUAGE OF STUDY

The language of instruction is English and all courseware is in English.

PREREQUISITES

Basic knowledge and skills on GIS and RS is essential for attending the course. It will be advantageous if participants have basic concepts of disaster risk management, although not mandatory.

ASSESSMENT AND CERTIFICATION

Participants will receive certificates upon completion of the course.

APPLICATIONS

Applications can be sent by e-mail, fax, or surface mail and application forms are available at: www.adpc.net and www.geoinfo.ait.ac.th.

CONTACT

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