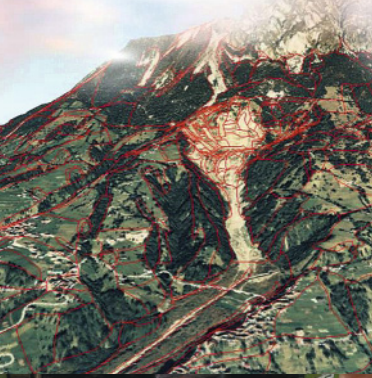


Use of GIS and Remote Sensing in Disaster Risk Management

5-16 May 2008



The main purpose of the course is to enhance the capabilities of professionals and technical staff working in disaster risk management by providing them with understanding of the use of spatial information in disaster risk management.

Participants acquire a comprehensive overview and hands-on skills in the application of geographical information system (GIS) and remote sensing (RS) in disaster risk management, and learn to work with aerial photographs, satellite images and digital maps that are the key to a better understanding of hazard, vulnerability and risk. This leads to better informed decision making, whether it is at a community, provincial, or national level, or in NGOs, private sector enterprises or public sector institutions.

The GRSDM course provides an excellent opportunity for professionals and practitioners working in the disaster risk field to obtain essential skills and knowledge on the utility of GIS and RS and their current application in disaster risk management. Participants will gain practical and technical knowledge on the uses of geoinformation in disaster prevention, preparedness and emergency response. Extensive exercises and simulations provide an insight into how GIS and RS tools are applied in these fields, and the benefits and solutions that can be presented.

Objectives

In the GRSDM course participants will learn how to:

- evaluate the spatial data requirements in disaster risk management
- apply GIS and RS to hazard, vulnerability and risk (HVR) assessment
- integrate HVR assessment results 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
- use participatory GIS (PGIS) at community level
- apply remote sensing data and image processing techniques to monitor hazardous events and assess damage for effective recovery planning.
- design and implement their own GIS projects that integrate remote sensing data, GPS-based field information, and HVR models and analysis in a proper geospatial and cartographic framework.

For whom is the course relevant?

The course is targeted at professionals with a disaster management background who require knowledge and skills on the use of GIS and RS for disaster risk reduction. As this requires teaching of underlying technical concepts, the course is less suitable for geoinformatics experts wanting to move into the disaster management field. Participants are welcome from a broad range of organizations including NGOs,

resource and planning organisations, disaster management and emergency response agencies, and professional and private service providers.

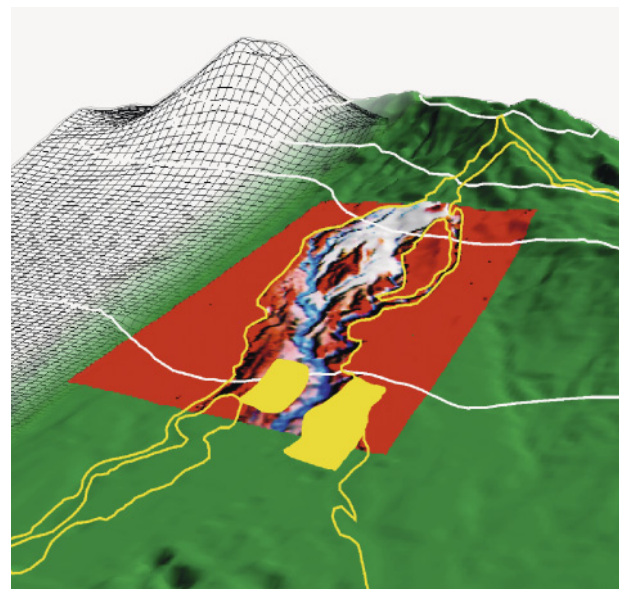
Course curriculum

Module 1: Hazard, vulnerability and risk assessment with GIS and RS

- spatial data requirements in disaster management
- basic GIS and RS concepts in the context of disaster management
- hazard, vulnerability and risk assessments with geodata (focusing on physical and socio-economic vulnerability, and multi-hazard risk assessment)
- participatory GIS for community-based disaster risk management
- GPS-based mobile GIS for hazard and vulnerability field data collection.

Module 2: Application of risk information and spatial data infrastructure

- database generation and risk mapping
- GIS project design and setup, spatial reference systems & data integration



- spatial data availability, and identification of spatial base data providers (e.g. DEMs, topodata, population data, etc), thematic spatial data providers (e.g. flood data, earthquake data etc) and spatial data users (e.g. NGO's, government organizations, municipalities, etc.)
- spatial data infrastructure (data sharing, restrictions, metadata, clearing houses)
- visit to a satellite data receiving and processing station.

Module 3: Early warning systems and disaster monitoring

- early warning systems for major hazards
- community-based early warning systems
- use of GIS in disaster preparedness planning
- remote sensing and image processing techniques for change detection
- hazard event monitoring using remote sensing techniques.

Module 4: Damage assessment and data dissemination

- damage assessment for recovery planning
- generation of damage databases
- updating of existing HVR maps.

Organising institutes

The *International Institute for Geo-Information Science and Earth Observation (ITC)* is the largest institute for international higher education in the Netherlands. ITC provides international education, research and project services in the field of geo-information science and earth observation using remote sensing and GIS. 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: <http://www.itc.nl>

Established in 1986, the *Asian Disaster Preparedness Center (ADPC)* in Bangkok, Thailand is the lead regional resource center dedicated to disaster reduction in Asia and the Pacific. 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 Organization with effect from 28 February 2005 with a mandate to expand disaster management and mitigation activities globally.

For more information: <http://www.adpc.net>

The *Geoinformatics Center, Asian Institute of Technology (AIT-GIC)* in Thailand is a non-profit training center for capacity building in Remote Sensing, GIS and GPS technologies in the Asia-Pacific region. It was established in the Asian Institute of Technology (AIT) in 1995. The Center has undertaken a number of disaster and environment related projects in South and Southeast 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: <http://www.geoinfo.ait.ac.th/>

ADPC Alumni League

ADPC Alumni occupy leadership positions across numerous sectors in at least 50 countries of the Asia Pacific Region. Many of them play pioneering and institution- building roles, and have contributed significantly to the enhancement of disaster management capabilities in the region. They retain their links with ADPC and many are actively involved in partnerships facilitated by ADPC at the regional and national levels. Successful completion of this course will qualify you to join in this distinguished and rich heritage.

Admission requirements

The course will include extensive exercises based on different GIS and image processing software. Therefore, participants should have a basic knowledge of computers, but do not require GIS or RS background knowledge. All teaching and course materials are in English, thus it is essential that participants are fully conversant in English.

Financial matters

The cost for the training course is US\$ 2,000 per participant, which includes tuition fee, course materials (books, DVD/CD, handouts), break refreshments, a social evening, as well as boarding and lodging during the training period of two weeks. Travel is to be arranged and paid directly by the participants. An additional admission fee of US\$ 40 is payable. Organisations that send five participants to this course are entitled to send a sixth person without paying the course fee. ADPC has established this arrangement in recognition of the special needs of sponsoring organizations that wish to send large groups to the course.

Applications

The application form is available on the ADPC homepage <http://www.adpc.net> and can be submitted before 1 April 2008 by mail, fax or email (see address details below). Pre-course information will be provided once registration for the course is confirmed.

More information

More information about the course can be found on ITC's website:

<http://www.itc.nl/education/courses/shortcourses.aspx> or contact

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Photos of the GRSDM 2007 course can also be found on the ADPC website.



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