United Nations Institute for Training and Research

Unitar Online Catalogue

Geospatial Information Technology for DRR: From Risk Assessment to Emergency Response (Applications and Cases Studies)

Type:	Course
Location:	Phnom Penh, Cambodia
Date:	2 Jun 2014 to 13 Jun 2014
Duration:	2 Weeks
Thematic Area:	Satellite Imagery and Analysis
Website:	http://www.unitar.org/unosat
Price:	$0.00
Event Focal Point Email:	unosat@unitar.org
Partnership:	ADPC

BACKGROUND

Geographic information systems (GIS) can be a really useful tool for the whole disaster management cycle starting from preparedness phase, mitigation to response, recovery, reconstruction. GIS has proven to be efficient for implementi ng coherent disaster risk reduction (DRR) activities at regional, national and local scales. Quantifying risk and expected future losses is a key step in any disaster ri sk reduction program. Also the outputs and scenarios of a risk assessment contrib ute to structuring overall risk reduction policies and planning. Geospatial risk asse

ssment can be performed with GIS tools and techniques which can quantify risk and also identify the locations in need of risk reduction measures. The role of GIS doesn’t stop there; in the immediate aftermath of a disaster satellite based rapid response analysis enables the emergency response agencies to respond in a better and coordinated way.

The overall aim of the course is to provide training participants with concepts and geospatial methodologies for risk assessment and satellite based rapid response analysis & mapping in the immediate aftermath of a disaster. First two days of this training participants will get familiar with ESRI ArcGIS software and in the third day they will learn how and where to gather satellite imagery, GIS datasets relevant for risk assessment and also for emergency response mapping. Fourth day will focus on satellite based rapid assessment and post disaster impact analysis. Final day of the week 1 the participants will learn to perform on post disaster damage assessment from very high resolution satellite imagery. On the first day of second week day participants will also be introduced to role of GIS in different phases of disaster management cycle also tools and techniques for disaster risk assessment. In the second and third day of week 2 the participants will perform some basic risk assessment using GIS. Fourth and fifth day of the second week the participants will be working on a risk assessment or emergency response scenario sessions to apply the knowledge achieved from the training event.

EVENT OBJECTIVES

The aim of the course is to provide participants with GIS and RS methodologies related to disaster risk assessment to emergency response.

LEARNING OBJECTIVES

Upon completion of the course, the participants will be able to:

- Define and describe basic concepts and terminology related to geospatial information technology
- Apply basic methods and functionalities for GIS analysis and mapping
- Identify, access, search, collect, organize and analyze geospatial data relevant to disaster risk reduction and emergency response
- Apply GIS methodologies and tools to perform impact analysis for emergency response mapping

- Apply GIS methodologies and tools to perform disaster risk assessment
- Explain the advantages and limitations of using geospatial information in disaster risk reduction

CONTENT AND STRUCTURE

The course is composed of 10 modules extended over10 workdays structured around the following topics:

- Introduction to Geographic Information Systems and Remote
- Introduction to ESRI ArcGIS software
- Datum coordinate system & map projection
- Geo-referencing, satellite imagery (ArcMap)
- Searching, exploring, gathering integrating geospatial data for emergency response mapping
- The operational use of satellite imagery for emergency repsonse
- Impact analysis and preliminary damage assessment
- Building damage assessment
- Concepts and terminologies for DRR
- Application of GIS in disaster risk reduction & risk assessment models
- Regional risk assessment using GIS
- Landslide risk assessment methodology
- Flood risk & hazard assessment methodology
- Introduction to map layout & cartographic representation
- Labelling & symbiology &, thematic mapping

This course is divided into 10 Modules. Each module is structured into 4 sessions of 1.5 hours each, which make a workload of 6 hours on average per day and, an overall workload of 60 hours for the entire duration of the course. It is considered that the length of the course well reflects its scope and is adequate to enable participants to achieve the learning objectives.

METHODOLOGY

This is a full-time, face-to-face course with lectures and GIS lab exercises using local datasets and real case scenarios (80% lab exercises, 20% lectures and discussions). This course is divided into 10 Modules. Each module is structured into 4 sessions of 1.5 hour each. The average workload per week is likely to be around 25-30 hours.

TARGETED AUDIENCE

Disaster Management Professionals working in governmental organizations who wish to strengthen their practical skills in GIS/RS applications for DRR.

It is recommended that participants taking the course have a working knowledge of English including a basic knowledge on GIS and Remote Sensing technology.

ADDITIONAL INFORMATION

Language:

English

UNITAR Certificate:

Participants will be given a UN training participation certificate from UNITAR.

Software Required:

ESRI ArcGIS version 10.2 with extensions (spatial analyst). Google Earth, Access t o Internet.

Class Size:

The number of participants is limited to 15.

Course Coordination:

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