



### Geospatial Information Technology (GIT) for Operational Planning and Decision Making in Disaster Situations

United Nations Satellite Centre UNOSAT

- : Course
- : Kampala, Uganda
- : 2 3□ 2020 to 6 3□ 2020
- : 5 Days
- : Satellite Imagery and Analysis
- : <http://www.unitar.org/unosat>
- : US\$0.00
- email: luca.delloro@unitar.org
- : +41 22 766 4137
- : The Ministry of Science, Technology and Innovation (MOSTI), , The UN Technology Bank for Least Developed Countries

#### □□□□

The increasing number and intensity of natural disasters in the past few years have had severe consequences in terms of human lives that were impacted, but also in terms of structural damage and economic losses. In years to come, extreme events will no longer be exceptions. Uganda is regularly affected by

multiple natural hazards, including droughts, earthquakes, floods, landslides, and volcanoes. Flooding, particularly in low-lying areas, presents the largest risk. Each year, floods impact nearly 50,000 people and over \$62 million in gross domestic product. Climate change is likely to increase average temperatures in Uganda up to 1.5 degrees Centigrade by 2030 and 4.3 degrees Centigrade by 2080. Rainfall variability and rising temperatures are expected to lead to higher incidences of droughts, water scarcity but also extreme weather related events which will likely increase population exposure to hydro-meteorological disasters such as heavy rainfall, floods and landslides (GFDRR 2017).

Geospatial information technology (GIT) including satellite imagery analysis and data visualization plays a vital role in understanding the geographic extent and severity of disaster events. Nevertheless, the ability of national and regional authorities as well as disaster management experts to seamlessly collect, integrate, analyse geospatial information in a comprehensible and easy to use format for remains a challenge that needs to be addressed with ad-hoc training and capacity development programmes.



The overall aim of this GIS course is to provide training participants with concepts and terminology of Geo-spatial Information Technology (GIT) including ad-hoc geospatial methodologies based on selected real case scenarios from previous disaster events in Uganda to support emergency response and recovery planning operations.



At the end of the course, participants should be able to:

-Define and describe basic concepts and terminology related to Geospatial Information Technology (GIT);

-Apply basic methods and functionalities of GIS software (ArcGIS) to manage and analyse spatial data;

- Explain the role of geo-information in the response / early recovery phase of a disaster;
- Identify suitable mechanisms for satellite imagery acquisition following major disaster events (e.g. International Space Charter);
- Identify, search, collect, organize and analyse geospatial related information relevant for disaster mapping;
- Apply basic GIS methodologies to perform impact analysis and preliminary damage assessment in the aftermath of a disaster event;
- Undertake the process to create thematic maps for evidence based decision making in emergency response and post disaster recovery.



The course will develop basic GIS skills amongst selected participants so that they are able to collect, manage & analyse geospatial data using GIS software. Focus will be given to understand the concept of GIT (GIS&RS) and its main applications to support both emergency response and post disaster recovery planning following major disaster events. A central part of the course will also cover mechanisms to collect pre and post disaster satellite images including procedures to trigger the International Charter Space and Major Disasters. During GIS lab exercises, training participants will learn geospatial methodologies to perform impact analysis and damage assessment using datasets from past disaster events occurred in Uganda.



This is a full-time, face-to-face course with lectures and GIS lab exercises using GIS datasets and real case scenarios (60% lab exercises, 40% lectures and discussions). This course is divided into 5 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.

The course is designed in a way to have a balanced approach between theoretical and practical teaching methods consisting in PowerPoint

presentations, live demos, videos, interactive sessions and GIS lab exercises. A dedicated learning management platform will be set it up by UNOSAT to maximize the learning experience of participants and to provide all required technical backstopping during and after the training to complete the final group and individual GIS assignment.



Expected target audience for this course are selected participants from Line Ministries with (preferably) a professional experience in the following fields: Disaster Risk Management, Disaster Risk Reduction and Humanitarian Response. It could be advantageous for participants to have a basic knowledge of GIS software and applications.

Participants are highly recommended to attend a 4 hours online course “Getting Started with GIS” Offered by ESRI at:

<http://training.esri.com/gateway/index.cfm?fa=catalog.webCourseDetail&c...>

before this training.



Participants will be given a UN certificate from UNITAR on successful completion of the final assignment to be submitted within 2 weeks after the end of the training course.