Capacity Building Programme

on

Space technology for Flood & Drought Risk Mapping & Assessment

27-31 October 2013

Jointly organised by

Asia Pacific Space Cooperation Organisation (APSCO) and
National Disaster Reduction Centre of China (NDRCC)
UN-SPIDER, UN Office for Outer Space Affairs

Introduction

Flood and drought are major threats to people's livelihoods and socio-economic development of our world. Asia and the Pacific regions are the most prone to natural disasters than other parts of the World. Over past four decades, the average number of people exposed to annual flooding has increased from 29.5 to 63.8 million and an estimated 668 million people had been affected by drought between 2000 and 2011 in this area. Risk assessment and mapping based on geospatial and space technology (earth observation) could provide useful information for flood and drought risk management. The purpose of the training is to strengthen capacity of the participants in assessing disaster risk using latest advances in the satellite remote sensing technology.

The training programme is organised back to back with the "United Nations International Conference on Space-based Technologies for Disaster Management - Disaster Risk Identification, Assessment and Monitoring" organized by the United Nations Office for Outer Space Affairs (UNOOSA), under the framework of UN-SPIDER, and the Ministry of Civil Affairs of the People's Republic of China in Beijing, China from 23 - 25 October 2013. The conference is an opportunity to share information on the latest methods, approaches and models used for identifying, assessing and reducing disaster risks. The 25 selected participants of the conference will continue to attend the training programme organised jointly by the APSCO, NDRCC and UN-SPIDER.

Partners:

Asia Pacific Space Cooperation Organization (APSCO)

The APSCO is a multilateral inter-governmental organization with full international juridical personality and has been operating for three years since its Inauguration Ceremony hosted in December 2008. At present, APSCO has eight Member States and one Signatory State, namely Bangladesh, China, Iran, Mongolia, Pakistan, Peru, Thailand, Turkey and Indonesia. The Headquarters of APSCO is located in Beijing for which the building and equipment are donated by the Government of the Host Country; the People's Republic of China. Establishment of the Asia-Pacific Space Cooperation Organization (APSCO) is a long desired outcome of the efforts of the people in Asia-Pacific Region to harness space for peaceful purposes, capitalizing on the regional cooperation.

United Nations Platform for Space-based Information for Disaster Management and Emergency Response (UN-SPIDER)

The UN-SPIDER is the United Nations Platform for Space-based Information for Disaster Management and Emergency Response, the programme implemented by the UN Office for Outer Space Affairs (UNOOSA). The UN-SPIDER has carried out Technical Advisory Missions (TAM) to several countries Asia (Maldives, Myanmar, Bangladesh, Sri Lanka and Vietnam) and Africa (Burkina Faso, Cameroon, Cape Verde, Madagascar, Mozambique, Namibia, Nigeria, Sudan and Togo). The mission team had in-depth discussions with all agencies involved in disaster management in that country and identified the need to upgrade technical know-how in using space technology. One of the common recommendations of these TAMs is to develop capacity of disaster management agencies and their stakeholder agencies to improve the national capacity in using space-based technology for disaster risk management.

National Disaster Reduction Center of China (NDRCC)

The NDRCC was established to serve the country's needs in the field of disaster prevention and reduction, and capacity building efforts have been made to make the center a nationally and internationally acclaimed clearinghouse and provider of technical and decision-making support in addition to its roles in international exchanges & cooperation, publicity and education. A comprehensive operational system is now working efficiently at the national level through reasonable deployment of resources, space-ground integration and coordination between departments. Satellites HJ-1-A and HJ-1-B have proved a great success in environment and disaster monitoring and forecasting, and constant improvements have been made in the product and service system in terms of disaster monitoring, analysis & assessment, information collection & validation and emergency response.

Dates and Venue

Dates: 27-31 October, 2013

Venue: Beihang University, Beijing, China

Participants

Up to 25 participants –mid level managers and technical staff of agencies involved in disaster management and hazard mapping, disaster related education, infrastructure development, disaster forecasting and warning provider, disaster responder, natural resource management from member countries of APSCO and country partners of UN-SPIDER.

Experts

Experts from following organisations will conduct theory and hands-on sessions

1. National Disaster Reduction Centre of China (NDRCC)
2. Faculty of Geo-Information Science and Earth Observation (ITC), University of Twente, Netherlands
3. International Water Management Institute (IWMI), Sri Lanka
4. UN-SPIDER, UN Office for Outer Space Affairs, Beijing, China,

Objectives and topics of the training:

The objective of the training is to strengthen the capacity of the national agencies to use geospatial technologies for flood & drought management. It will provide an insight on use of satellite images and spatial information in flood & drought risk management by providing hands-on training on using spatial data for risk mapping, flood modelling and rapid mapping (damage assessment). Thus, the training will demonstrate use of space based information in entire cycle of flood management. The participants will benefit from the experience sharing by experts from the centres of excellence, demonstration of the best practices in various countries and practical sessions on the software tools.

The training programme will cover following topics:

Concept and theoretical background: The **l**ectures will be organised on theory and concepts of disaster risk management, space technology and its applications in disaster management (with focus on flood and drought), international initiatives for emergency response etc.

Flood risk mapping and modelling: It is important to map flood risk areas so as to be better prepared and plan mitigation measures in advance. Hands on sessions will be organised on flood risk mapping based on open source data. The participants will be briefed on using hydrological and hydraulic models based RS and GIS tools for current and future flood modelling.

Flood Rapid mapping: Often when flood hits, the first-hand reliable information can be provided based on satellite images. This session will provide hands on session on flood rapid response mapping including geospatial data preparation, disaster impact analysis and preliminary damage assessment.

Drought risk assessment and mapping: Space-based information has tremendous potential to detect this slow-onset disaster. This session will provide concept and hands on exercises on drought risk management, assessment and mapping.

Expected outcome

The participants are expected to understand remote sensing and GIS applications in disaster risk reduction and rapid response mapping, mainly for managing flood and drought disasters. A week long training is expected to enhance capacity of participants in preparing flood hazard maps, mapping areas vulnerable to flood and drought and preparing products (such as flood inundation and damage assessment maps) relevant to disaster managers. The participants will also become aware of global and regional mechanisms and frameworks, its activation protocols during disaster events.

Organiser's contact

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