

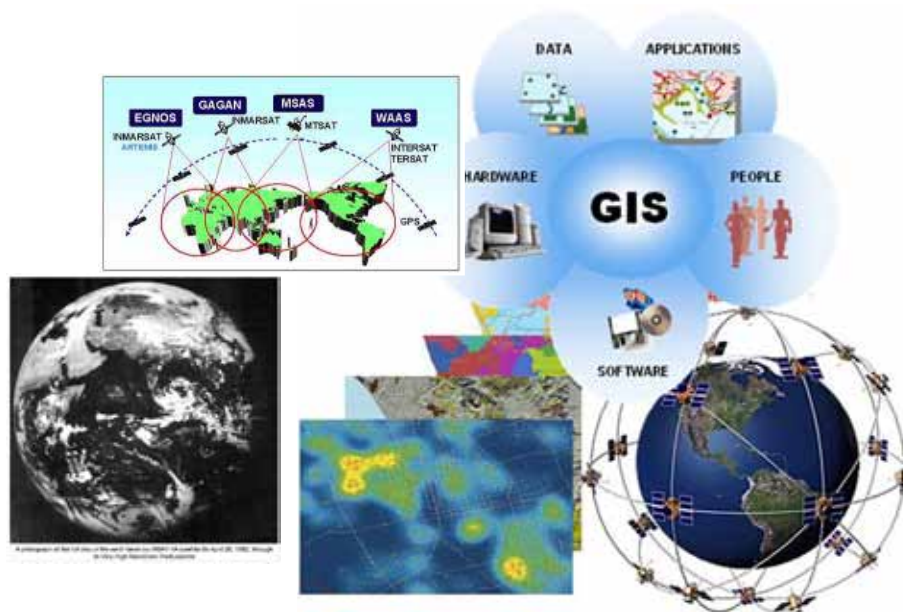


## 2<sup>nd</sup> NIDM - UN-SPIDER Workshop

# Space Technology Application in Disaster Risk Reduction and Emergency Response

28-30 March 2011

Venue: NIDM, New Delhi



**UN-SPIDER**  
**UN OFFICE FOR OUTER SPACE AFFAIRS**  
United Nations Office at Vienna  
Vienna International Centre,  
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A-1220 Vienna, AUSTRIA  
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Ministry of Home Affairs  
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# Space Technology Application in Disaster Management and Emergency Response



## CONTEXT

There is an increasing trend in disasters both in frequency as well as in the damage caused in terms of human casualties, economic and ecological damage. With the use of Space Technology and GIS it is possible to assess impacts of natural phenomena like floods, drought, earthquakes, landslides, volcanic eruptions and forest fires. If utilized optimally, GIS and remote sensing can be used as a powerful tool for analysis of hazard, vulnerability and risk, resulting in the development of different scenarios and concrete measures for disaster prevention. Simple, low-cost GIS systems allow local authorities to properly plan the areas under their jurisdiction, and to incorporate the local knowledge and ensure community participation, combined with modeling results from experts. To achieve this, professionals need to be trained in the application of GIS and remote sensing for disaster reduction. Disaster Risk Reduction is the key focus area at national and international level. Use of space based information for risk reduction and management of disasters is well appreciated by the disaster managers. However, practical applications of such space based information and geo-informatics technology is still limited because of limited exposure of disaster managers to such technology. This halts the use of these technologies during preparation of disaster management plans as well as its implementation. To bridge this gap at national and sub-national level, it is proposed to organize training workshop on capacity building for Disaster Managers on the applications of space technology for disaster management. The workshop should also aim at defining long-term needs of capacity building to ensure that use of space based information is promoted at all the levels. NIDM is nodal agency of the Government of India for capacity building in DRR and coordinates disaster management faculties at State Administrative Training Institutes (ATI). UNOOSA/UN-SPIDER has mandate to enable countries to use space based information in all stages of disaster management.

## 1ST NIDM/UN-SPIDER WORKSHOP ON "SPACE TECHNOLOGY FOR DISASTER RISK REDUCTION" AT NIDM, INDIA, 11-13 JANUARY 2010

First workshop on "Space Technology for Disaster Risk Reduction" was organized by National Institute of Disaster Management (NIDM), New Delhi from January 11-13, 2010 in collaboration with the UN-SPIDER. This Workshop, therefore, was mainly targeted the concerned officials from the Central and State Disaster Management Authorities and technical staff involved in using geographic information for disaster management. This workshop was able to generate the necessary impetus and it was attended by participants from thirteen States of India, as well as from Bangladesh and Nepal.

The Resource persons for this workshop included the experts from Indian Space Research Organisation (ISRO), NIDM, UN-SPIDER, UNDP- India and others. During the Workshop the representatives of various SDMAs shared their experiences of use of space technologies in their respective states. Methodology used for this workshop emphasised on group discussions and group exercises. As an outcome of the workshop, participants provided recommendations, based on the discussions and exercises on following topics: 1) Policies interventions at State level to develop capacities and get access to space-based and geo

information and 2) Effective data sharing for use of geo-information for disaster management. It was also decided that the recommendations of workshop should be circulated to authorities in Central and State Government to insure that right information reaches to right people.

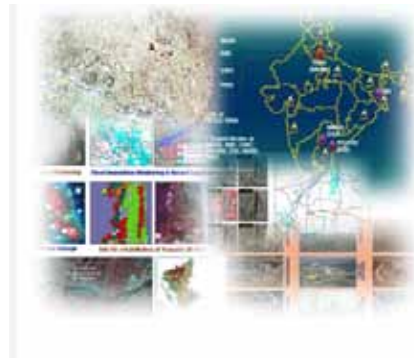
The workshop was an eye opener to many participants as they were exposed to wealth of information available with ISRO and Regional/State Remote Sensing Centres which can be used for disaster risk reduction at state level. It was agreed that this workshop is a beginning and further programme should be developed based on the recommendations of this workshop.

One of the important outcome of the workshop was creation of a virtual community (e-group) by NIDM which included all the participants and faculty involved in the workshop. This group is connected to ISRO Disaster Management System and UN-SPIDER to provide updates on recent advances in use of space technology for disaster management.

### **ABOUT UN-SPIDER INITIATIVE OF UN OFFICE FOR OUTER SPACE AFFAIRS (UNOOSA)**

In its resolution 61/110 of 14 December 2006 the United Nations General Assembly agreed to establish the "**United Nations Platform for Space-based Information for Disaster Management and Emergency Response - UN-SPIDER**" as a new United Nations programme, with the following mission statement: "Ensure that all countries and international and regional organizations have access to and develop the capacity to use all types of space-based information to support the full disaster management cycle". Whereas there have been a number of initiatives in recent years that have contributed to making space technologies available for humanitarian and emergency response UN-SPIDER is the first to focus on the need to ensure access to and use of such solutions during all phases of the disaster, including the risk reduction phase which will significantly contribute to an increasing reduction in loss of lives and property. The UN-SPIDER programme is achieving this by focusing on being a gateway to space information for disaster management support, by serving as a bridge to connect the disaster management and space communities and by being a facilitator of capacity-building and institutional strengthening, in particular for developing countries.

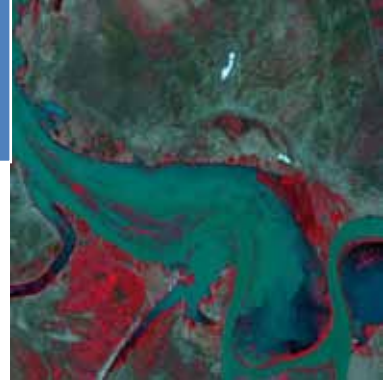
UN-SPIDER is being implemented as an open network of providers of space-based solutions to support disaster management activities. Besides Vienna (where UNOOSA is located), the Programme also has an office in Bonn, Germany and Beijing, China. Additionally, UN-SPIDER programme is supported by the Regional Support Offices (RSO). Currently there are 10 RSO namely the Asian Disaster Reduction Center (Japan), Algeria, I.R. Iran, Nigeria, Pakistan, Romania, Regional Centre for Mapping Resources and Development (Kenya), South Africa, Ukraine and University West Indies



### **ABOUT NIDM**

National Institute of Disaster Management (NIDM), Ministry of Home Affairs (Government of India), is a centre of excellence and learning in the field of Disaster Management. It is a

premier resource institution for human resource development, training, capacity building, applied research, implementation and dissemination of information and knowledge for holistic Disaster management. The institute works towards the effective application of Disaster risk mitigation and management in India as well as in the region by providing technical assistance for capacity building and developing disaster management systems and Institutional framework in the sector. Some of the key areas in which the institute is involved are:



- Training: Training programmes, workshops, and training of trainers for officials at the national, state and district levels to prepare them to tackle natural disasters in all its phases.
- Research: Issues, concerns and lacunae in management of disasters, Lessons learnt from past disasters and best practices in Disaster Management.
- Documentation: Disaster events, Impact of disasters, Situational analysis of relief and response measures, creation of database through primary surveys and secondary sources, preparation of brochures, pamphlets, posters, films etc

#### **NIDM RS & GIS LABORATORY & VIDEO CONFERENCING FACILITY**

The Institute has a State of Art GIS Laboratory with high end hardware and commercial softwares Arc GIS 9.0 and ERDAS IMAGINE for imparting training and carrying out research activities. The GIS lab is connected to the server through LAN and all the PCs are having internet connectivity. Apart from this the institute also has a computer centre for exclusive use by participants with 256 kbps leased line internet connectivity.

The Institute has set up a video conferencing facility with the support of Department of Space under Disaster Management Support Programme. This video conferencing facility suite of the Institute offers the ability to hold conferences with National Remote Sensing Agency, India Meteorology Department, Central Water Commission, INCOIS, Geological Survey of India, Ministry of Home Affairs and many state level EOCs and Secretariats. The facility has been used by NIDM to organize technical sessions and interaction with agencies like NRSA, GSI and IMD during our previous training programmes. It is possible to hold multi-venue conferences with several sites through out India.

#### **NIDM INITIATIVES IN GEOINFORMATICS**

First Training Programme on the application of Geo-information in Disaster Management was launched in May 2005 at NIDM. Since May 2005, five 3 days training programmes on the Application of Geo-information in Disaster Management has been organized at NIDM. Apart from these, 5 days training programme has been organized in collaboration with Indian Institute of Remote Sensing, ADPC and ITC Netherlands in Dehradun from 10-14th of July 2006, YADHADA, Pune in January 2007 Uttarakhand Academy of Administration, Nainital in May 2007, Anna Institute of Management, Chennai in Jan 2008, SKIPA Ranchi in Sep 2008, DMI Bhopal in Feb 2009, HIPA, Gurgaon in July 2009 and NIDM New Delhi. NIDM in collaboration with ITC Netherlands and Geological Survey of India organized a two weeks training cum field workshop on Geoinformatics applications in Landslide Risk Management



at NIDM from 11- 23 January 2009. NIDM organized collaborative programme with ITC Netherlands at CEPT Ahmedabad from 31 Jan to 4 February 2011 on Geoinformatics applications in Chemical Disaster Management. Modules were already been incorporated in hazard specific programmes like drought, floods, landslide, earthquake and cyclone as well as with training programmes like DDMP, damage assessment Risk Assessment and many ongoing training programme of NIDM. NIDM and UNOOSA/UN-SPIDER organized the first training workshop at NIDM in Jan 2010 with participants from India, Nepal and Bangladesh.

## AIM

- This training programme is particularly aimed at capacity building for Disaster Managers on the applications of space technology for disaster management which will help in bridging the gap between the geo-spatial and disaster management functionaries at various levels.

## OBJECTIVES

The main objectives are as follows

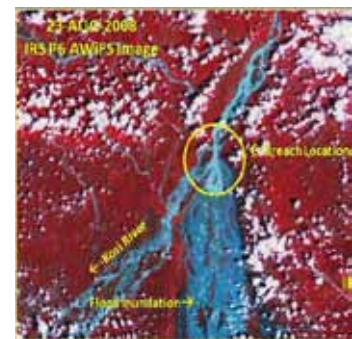
- To review the various international, regional and national initiatives on geo-spatial technologies and application relevant to disaster management
- To sensitize participants in the potential and scope of Remote Sensing and GIS for holistic Disaster Risk Reduction and Management i.e. at various stages of Disaster Management, Data sources and National Initiatives (Mainly DOS)
- Identify various tools, techniques, datasets and methodologies for Geospatial information management with case studies related to application in all phases of disaster management cycle and for various hazards
- To enable the participants to understand the Institutional mechanism for Geoinformation data and Policy framework on Spatial Data Management particular to Disaster Management.
- Review the status, implementation challenges in existing approaches, tools, techniques and methodologies to suggest better strategies.

## METHODOLOGY

Course methodology includes Lecture & question answer session, Power Point Presentations, Videoconferencing, Group discussion, Experience Sharing and Demonstration of various cases.

## TARGET GROUP

The target group for this programme is members of State Disaster Management Authorities, Senior and Middle level administrators of Department of Disaster Management and Faculty members of Administrative Training Institutes. Since the course is targeting the user community prior knowledge on Geoinformatics Technology is not mandatory. However it is advisable to have basic knowledge and aptitude towards the subject of Geoinformatics and its applications.



## VENUE AND DURATION

The programme will commence on 28 March and will conclude on 30<sup>th</sup> March, 2011. Venue will be the conference hall of National Institute of Disaster Management, New Delhi.

## REGISTRATION

Registration will start at 9:30 A.M. on 28 March, 2011. Participants are requested to bring a copy of their nomination / confirmation letter (send by NIDM) at the time of registration. Only confirmed participants will be allowed to attend the course. There is no registration fee for the course.

## PROGRAMME DETAILS

The programme details including the Work Schedule, List of Resource Persons along with their contact details are given in the schedule of the programme.

## EVALUATION OF THE PROGRAMME

The final session will be devoted to evaluation and valediction. The participants will be supplied with an evaluation proforma, which may be completed and handed over to the programme staff. Certificate will be awarded to each participant on the successful completion of the programme. Attendance sheets will be circulated on daily basis and is mandatory to attend all the sessions.

## ORGANISING TEAM

1. P.G. Dhar Chakrabarti, Executive Director, NIDM
2. David Stevens, Coordinator, UNOOSA/UN-SPIDER

### Course Coordinators

3. Dr. Shirish Ravan, Programme Officer, UNOOSA/UN-SPIDER (UN-OOSA), United Nations Office at Vienna (Email: shirish.ravan@unoosa.org)
4. Dr. Amir Ali Khan, Assistant Professor, NIDM (Email : alikhanamir@gmail.com)
5. Ms. Sreeja S. Nair, Assistant Professor, NIDM (Email: sreejanair22@gmail.com)

## PROGRAMME SCHEDULE - Broad topics to be covered (tentative) will be as following:

1. Inauguration
2. UN-SPIDER and International Initiatives in the Field of Disaster Management (*Shirish Ravan*)
3. Introduction of Geo-informatics and Applications in Disaster Management (*Sreeja S. Nair*)
4. Capacity Building in Use of Space Technology for DRR – Role and Experience of IIRS (*IIRS*)
5. Overview of Disaster Management Support (DMS) Programme. (*ISRO*)
6. GNSS and Applications in Disaster Management (*ISTRAC*)
7. SERVIR-Himalaya System and the Potential Applications in Disaster Management in the Region (*ICIMOD, Nepal*)

8. Spatial Data to Complement the Space Based Information for Disaster Management (*Shirish Ravan*)
9. International Space Charter and Disaster Management (*N.K. Srivastava*)
10. Group Presentations by Participants / Formulation of an Outcome Document
11. Panel Discussion/experience sharing on Role of Geo-informatics in DM
12. Valediction and Certificate Distribution

**Resource persons to be invited for the course will include the following:**

1. Dr. P.S. Roy, Dean IIRS - dean@iirs.gov.in
2. Dr. V.S. Hegde , Director DMS, ISRO - vshegde@isro.gov.in
3. Dr. V. Diwakar, Dy Director DMS
4. Mr. Jagannath Das, ISTRAC
5. Dr. Amarnath Giriraj, ICIMOD - agiriraj@icimod.org
6. Mr. N.K. Srivastava, ISTRAC- nks@istrac.org

**Note: Extended evenings will be devoted for experience sharing and discussions among the experts and participants**

## HOW TO REACH US

NIDM is located within the campus of Indian Institute of Public Administration (IIPA) on Mahatma Gandhi Road (Ring Road), Opposite to Indira Gandhi Indoor Stadium. The Institute is centrally located and well connected by a number of bus routes but for those who are new to the place, it is convenient to take a prepaid taxi from Airport or Railway Stations.

Distance from

- IGI Airport (Domestic Terminal) – 23 Km
- IGI Airport (International Terminal) – 28 Km
- Delhi Metro (Indraprastha Station) – 1.5 Km
- New Delhi Railway Station – 6 Km
- Old Delhi Railway Station – 10 km
- Hazrat Nizamuddin Railway Station: 8 km



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