

COURSE REPORT

ON

1st COURSE ON “APPLICATION OF GEOINFORMATICS IN DISASTER MANAGEMENT”

Geological Survey of India Training Institute (GSITI), a month long Training Programme on “Application of Geoinformatics in Disaster Management” during 15th December, 2004 and 13th January 2005, at Hyderabad. The course was sponsored by ISRO, Dept. of Space, Bangalore under NNRMS programme.

The course received good response from State And Central Government Organizations & Agencies and Academic Institutions. In all, 17 trainees participated in the course, including 8 candidates from the professional organizations viz, Disaster Management Organizations (2) Indian Meteorology Department (1) State Remote Sensing Centers (4), Central Ground Water Board(1), Geological Survey Of India(3) University Faculty (4), Research Scholars (2) (Enc:1).

The keynote address was delivered by Dr. D.P. Rao, former Director of NRSA during inauguration of the Course on “Disaster Management- A remote sensing Perspective”. Dr. Rao highlighted the various Natural Disasters and spoke on the increasing relevance of space data for disaster mitigation and management. Dr. K.S. Misra Director –in-charge, GSI Training institute delivered a special lecture on the topic which is most debated today, namely earthquake, taking Bhuj E Q as a case study.

The course was structured under 3 Modules: Remote Sensing Module, GIS Module and Geoinformatics Application Module. The 1st module of one-week duration on Remote Sensing covered fundamentals of Satellite Remote Sensing, Data Formats, Remote Sensing Windows and NDC data products and services. It also covered visual and digital interpretation of remotely sensed data for delineation and mapping of various geomorphological, lithological and structural features as well as land use & land cover, hydro-meteorological, geoenvironmental and anthropogenic features. Digital Image Processing and Digital Photogrammetry

using the latest version of ERDAS Imagine Software were also covered. The 2nd Module of one week duration covering Arc GIS, topology and projection systems, spatial data capturing techniques, database concepts and geodata base, Global Positioning System and mobile mapping systems, Remote Sensing and GIS for disaster management, analysis & modeling of geospatial data, digital cartography and visualization. The 3rd and the important module on Application of Geoinformatics, spanning 2 weeks, dealt with different natural disasters namely, earthquakes and landslides, environmental disasters such as cyclones, floods and hydrometeorological hazards namely, drought and desertification. Apart from mechanism, parameters and problems, the Training focused on characterization, zonation and mapping of disasters on suitable scales. Evaluation of specific disasters, decision support models and disaster mitigation and rehabilitation measures were discussed case-wise including mining related hazards.

The course spanning 26 working days (including one day field excursion) comprised both theoretical lectures (39) and practical exercises/demo (18 sessions) along with adequate hands-on practice by each trainee on high-end computer systems using state-of-the-art technology in GIS with the help of Arc GIS, Arc Info etc. and Image processing software modules including ERDAS Imagine (8.6/8.7 version) professional, virtual GIS, Ortho BASE, Stereo Analyst.

The course was backed by a number of specific case studies presented by experts from Geological Survey of India, Department of Space, Disaster Management Organizations namely Disaster Mitigation Society- Govt. of Andhra Pradesh And Drought Monitoring Cell-Govt. of Karnataka and School for Environmental Planning, Ahmedabad.

Practical exercises were carried out in for delineation of i) cyclone hazard prone coastal zone, ii) flood hazard prone river valley, iii) landslide hazard prone Himalayan terrain. iv) earthquake prone western ghat area, v) mining hazard belt in Goa and vi) urbanization hazard area.

The Training Course ended with Project Work on Landslide Hazard Zonation studies in 2 blocks – Nainital Block and Purola-Barkot Block, Uttarkashi District, Uttranchal State (samples of Project work enclosed), presentations by individual trainees on project work, Group Discussions and objective test.

Besides providing the Course material, a few useful soft wares were also distributed amongst the Trainees viz: i) Low image processing software, ii) Arc GIS tools and iii) book on IS criteria for EQ resistant design of structures (5th edition, June 2002).the valedictory address was delivered by Dr. V.P. Dimri, Director, NGRI, Hyderabad on the most current topic “Tsunami at a glance” with tell tale visuals and vivid descriptions provided a fitting finale to the training programme.