Session 5: Hazard and Risk Geospatial Information Requirements

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Geo-spatial Information Requirement for Hazard and Risk Assessment in Urban Environments in India

Abstract

In India, Ministry of Home Affairs at the national level and the Revenue Departments at the State level are the primary end-users of geo-spatial information for the management of hazards/ risks. Under the Ministry and the State Departments, National and State Disaster Management Authorities have been set up with the constitution of National Disaster Response Force (NDRF) for provision of quick response in the event of disasters. In spite of several data providing agencies acquiring different types of data sets relating to hazards and risks in the urban environment, sharing and accessibility of associated up-to-date geo-spatial information with the above end users and the Civil Society has been a major bottleneck. Although, in the past decades, several initiatives have been launched by the Government at the National and State levels to use remote sensing, Geographical Information Systems (GIS) and positioning technologies in decision-making, geo-spatial information sharing and accessibility continues to evade their effective use in hazard and risk management in urban environments.

Under the Natural Resources Data Management System (NRDMS) Programme and the National Spatial Data Infrastructure (NSDI) initiative of the Department of Science & Technology (DST), efforts are being made to address the problem and improving accessibility. In support of the task, several policy changes have been made in the recent past like revising the National Map Policy (2005) and the National Remote Sensing Policy (2011), setting up of a national level governance structure for coordinating geo-spatial data activities through the NSDI Resolution (2006), and framing of the National Data Sharing & Accessibility Policy, 2012. In the framework of the above policies, web-based dissemination systems are at different stages of implementation at various levels of the decision-making hierarchy.

At the national level, a single window access mechanism – India Geo Portal (www.nsdiindia.gov.in) - for searching and discovering geo-spatial data available with various national agencies has been established. Metadata from the agencies have been compiled and made accessible from the Geo Portal. A group of 17 national agencies like the Survey of India (SOI), National Remote Sensing Centre (NRSC), Forest Survey of India, Geological Survey of India, Census of India, Central Water Commission, National Informatics Centre, India Meteorological Department etc. is participating in the

standardization of the web-based data services like Web Map Service (WMS), Web Feature Service (WFS), Catalogue Service on Web (CSW) etc. for provision of framework data. State Geo Portals are under development in selected States to make the geo-spatial data sets like land parcels/ cadastral boundaries with ownership information accessible over the web. Geo-spatial data sets acquired under the National Urban Information System (NUIS) scheme of the Ministry of Urban Development are being standardized and made a part of the NSDI for improving accessibility of the end users to large scale maps for a select set of important cities and towns of the country. Under the proposed National GIS Mission of the Government during the current Five Year Plan (2012-2017), efforts are being made to set up the required geo-spatial information infrastructure around the NSDI/ State SDIs to provide necessary information support to hazard and risk assessment. Modelling studies are carried out in the areas of floods, tsunamis, and landslides to generate alternative scenarios for demonstration of utility of geospatial information to end users for training and capacity building.