

Full Report (Draft)

Survey Report on

**Analytical Overview of Unmet Data Needs and Critical
Gaps to Establish a Geo-referenced Disaster
Management Information System/Platform in the High
Risk Developing Countries of Asia and the Pacific**

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Abbreviation and Acronyms

ADPC	Asian Disaster Preparedness Centre
ADRC	Asian Disaster Reduction Centre
DRM	Disaster Risk Management
GNSS	Global Navigation Satellite System
NDM	Natural Disaster Management
DRR	Disaster Risk Reduction
UNESCAP	United Nations Economic and Social Commission on Asia and Pacific
UNISDR	United Nations International Strategy for Disaster Reduction
UNOOSA	United Nations Office for Outer Space Affairs
UNDP	United Nations Development Program
UNSPIDER	United Nations Platform for Space-based Information for Disaster Management and Emergency Response
UNOCHA	United Nations Office for the Coordination of Humanitarian Affairs
UTM	Universal Transverse Mercator
WGS 84	World Geodetic System 1984
RIMES	Regional Integrated Multi-Hazard Early Warning System for Africa and Asia

Abstract

Disasters are becoming more frequent and their magnitude is also becoming high in last two decades. These are often linked to changing patterns of rainfall, temperature and other climatic variables. This has resulted in increased losses due to disasters with grave consequences for the survival, dignity and livelihood of individuals, particularly the poor, as well as hard won development gains, including Millennium Development Goals (MDGs).

To manage disasters effectively and reduce the risk due to them, there is basic need of geospatial data in form of satellite imagery and field observations. These data can not be analysed in a GIS until unless they are referenced to each other or to a common base map of the representative region. There are several space agencies and organisations providing geospatial data. Some developed countries have well established facilities and institutions which can georeference such data and also analyse them in useful information base for Disaster Risk Reduction (DRR) and Disaster Risk Management (DRM). But, such dedicated geospatial data processing for DRR and DRM are absent in many high-risk countries.

This report presents the data needs and critical gaps in support of establishing a geo-referenced disaster management information system/platform in the selected high-risk countries of Asia and the Pacific. The document focuses on survey of existing geospatial data and data gaps related to disaster risk reduction strategies to ensure sustainable development and save lives in least developed countries, land locked developing countries and small island developing states.

There are huge amount of data available in form of satellite images, maps and aerial photos. But these cannot be used to create information in GIS for mitigating disasters because they lack compatibility. They come from varying projection systems, coordinate systems, scale and resolution. Geospatial data need to be fundamentally compatible for overlay and analysis in GIS. This can be done only by geo-referencing various kind of data available and developed from different sources. The Global Spatial Data Infrastructure (GSDI) standards are followed world over. Each country is asked to have their National

Spatial Data Infrastructure (NSDI) based on GSDI. Many agencies/ organizations are developing data using these standards and codes. Study will present the strategy for developing the geo-referenced database for natural disaster management and risk reduction. This document also contains recommendation on uniform standards to be followed for geospatial data for creating information systems related to floods, droughts, earthquakes, cyclones and tsunami for decision makers to map hazard zones, vulnerability and risk areas. The gap in existing database and capacity to handle the geospatial data from various sources is analysed based on the survey. Based on the gaps a Geo-referenced Disaster Management Information System/Platform is proposed. A survey is also conducted to find the national and international organization involved in disaster management using various kind of geospatial data and systems in each representing countries.

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