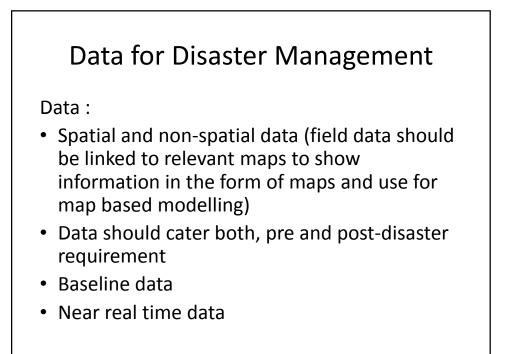
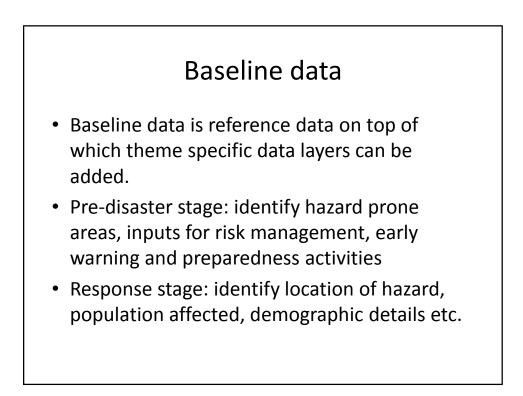
Spatial Data for Disaster Risk Mapping, Reduction and Response

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Spatial data

- Baseline data
- Utility and Infrastructure data
- Disaster specific data
- Thematic data on terrain and natural resources
- Near-real time satellite data and thematic maps



Data	Description	Relevance to Disaster management
Administrative units	National, province/state, district boundaries to the locations of towns and villages	Data on administrative units and the village locations in GIS format is crucial in all phases of disaster management. This remains a base layer to which other data is linked such as demography, socio- economic data and amenities/services etc.
Demography	All details about population and its distribution based on age, sex, education etc.	Demographic data provides magnitude of population at stake. Source of this information is often statistical services of the country.
Socio-economic details	Education, occupation, income, assets and comprehensive information based on household survey	Socio-economic information provides important basis to understand the social and economic status of the population in the area at risk.
Amenities	Rescue services including army, fire, police etc., medical services, schools, communication, gas stations etc.	Information on about amenities helps understanding the resources available in the area under risk or area affected which can be mobilized during disaster.

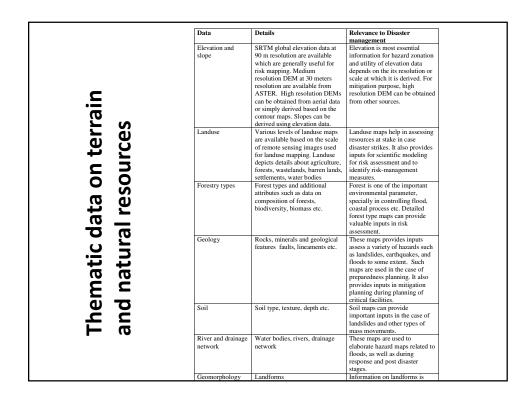
Utility an	d Infrast	ructure d	ata
	Data	Details	Relevance to Disaster management
 Data about 	Transport network	Entire transport network including roads and other modes of transport that reaches villages	Updated transport network provides critical information during response stage about access to disaster affected area
utility and infrastructure	Electricity network		Electricity is the one of the essential utility in order to continue rescue efforts. Data on electricity network is important input in disaster management plans
is critical while planning risk reduction and response	Cadastral details	Maps at cadastral level showing linked with land records	at local level. Cadastral mapping using high resolution satellite data is common practice. Such data provides critical input to the humanitarian agencies and the Government for determining loss of productive land or land owned by displaced families and determine compensation
	Region specific utility network	Gas pipelines, oil pipelines, canal network, bridges etc.	Data on utility and infrastructure helps identify vulnerability associated with these critical facilities and services; and in planning the responses during disaster situation.

Disaster-risk specific data

- Often, disaster-risk is expressed in terms of risk maps and related data. This data should be linked to the relevant maps so that it can be visualized in spatial forms.
- Additional data on actors or agents in charge or who support particular activities can be collected by local administrators with involvement of communities. It can include list of NGOs, social groups, community groups etc. that are active in disaster situation.
- It can include information on the important resources that can be moblised in case disaster strikes.

Thematic data on terrain and natural resources

- Satellite data, combined with topographical maps, provides excellent data source for preparing thematic maps.
- These thematic maps derived from satellite-based data are one of the crucial input mapping of a range of hazards including, flood and storm surge, erosion and landslide, fire, storm, and so forth.
- These data layers when combined with ancillary data would help in producing maps related to predict risks of floods, erosion, landslides, fire, storm, draught, seismicity etc. Such maps provide scientific inputs for planning the preparedness, response and mitigation activities.



Near-real time satellite data and thematic maps

- During response stage, near real time coverage from satellite helps to provide areas affected by disasters.
- The spatial toolkit should have provision for interpretation of near-real time satellite data and integrating thematic maps prepared based on near-real time satellite data.
- Near-real time satellite data is effective in covering floods, earthquakes, landslides, mudslides, damages due to cyclones. Usefulness of information depends upon the resolution of satellite data.
- The link <u>http://www.space-</u> <u>risks.com/SpaceData/index.php?id_page=5</u> provides information on the satellites and sensors that are available to provide information related to disaster management.

Data	Details	Relevance to Disaster management
Crop monitoring	Crop types (cereals, orchards, cash crops etc.), type of agriculture (irrigated, rainfed etc.), cropping intensity, crop vigour and health. MODIS, SPOT (Vegetation 2 sensor), IRS-WIFS provide dynamic information on NDVI which is helpful to assess crop extent and condition.	Agriculture map provides parameters that can be us understanding impact of disasters like drought. It a provides data for a more assessment of damage of in terms of financial loss of disasters. NDVI information provid inputs for preparedness planning at national scale
Snow cap monitoring	Number of satellites (like MODIS) have high revisit frequency and provides extensive coverage to monitor snow cover.	