



Empowering Govt & Enterprises

Geospaital perspective

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Presentation at Plenary 2 – Geospatial Forum



Basic Requirements

- To understand the initiatives & programs of Govt.
- Examine Maturity of Govt Progs. for Geospatial solution
- Categorisation of users – Local, State & Central Govt
- Data requirements: Preparations, Spatial representation
- Enterprise Solutions needed in all sectors/ levels
- Potential to use Technology: GeoSpl., Space etc.
- Customisation efforts for possible solutions



Geo-informatics - Scope

- **Earth Observations Data**
 - **(Geostationary & Orbiting satellites); Aerial Platforms**
- **Maps derived from EO and field surveys**
- **Location specific information & its use**
- **Attributes (non spatial data point-area)**
- **Outputs of geospatial models & queries**
- **Spatial Decision Support Systems**

Major Thrust Areas

- **Agriculture**
- **Rural Development**
- **Urban Development**
- **Environment & Forest**
- **Panchayati Raj**
- **Geology and Mining**
- **Atmospheric, Climate and Ocean Studies**
-

- **Institutionalization of Geospatial Technology at Central and State level for effective use of Technology**
- **Industry & Enterprise solutions is the need of the hour**



Agriculture

- **Crop Production Forecasts**
- **Need for info. on all the major crops**
- **Strategies for crop diversification**
- **Detailed assessment of Soil property and capability**
- **Regular updates information on the soil moisture**
- **Agricultural Drought Assessment**
- **Horticulture Inventory**
- **Mobile-based Apps for Field data collection**



Forests & Environment


- **Closer monitoring of Forests**
- **Regular updates on Vegetation Types**
- **Growing stock & Tree cover outside forests**
- **Need for Rapid forest cover assessments**
- **Biomass estimation using EO – Techniques development**
- **Environment is a major challenge – Air, Water & Atmosphere**
- **Enterprise solution required - Process Automation, need for EO and field data integration**
- **Desertification Status Mapping & Monitoring**
- **National Land Degradation Mapping & Monitoring**
- **National WetLand Mapping, Snow & Glacier monitoring, Coastal Zone monitoring.....**





Assets DB & Management

- **Typical Requirements:**
 - **Geo-spatial inventory of rural and urban Assets**
 - **GIS mapping of Assets for Planning & Management**
 - **Multi-sectoral Development Program by States – Asset Mgmt.**
 - **Planning for socio-economic infrastructure development**
 - **Monitoring of developmental schemes of the Govt., that are implemented, on real-time basis**
 - **Railway and Road Assets + other infrastructure Management**

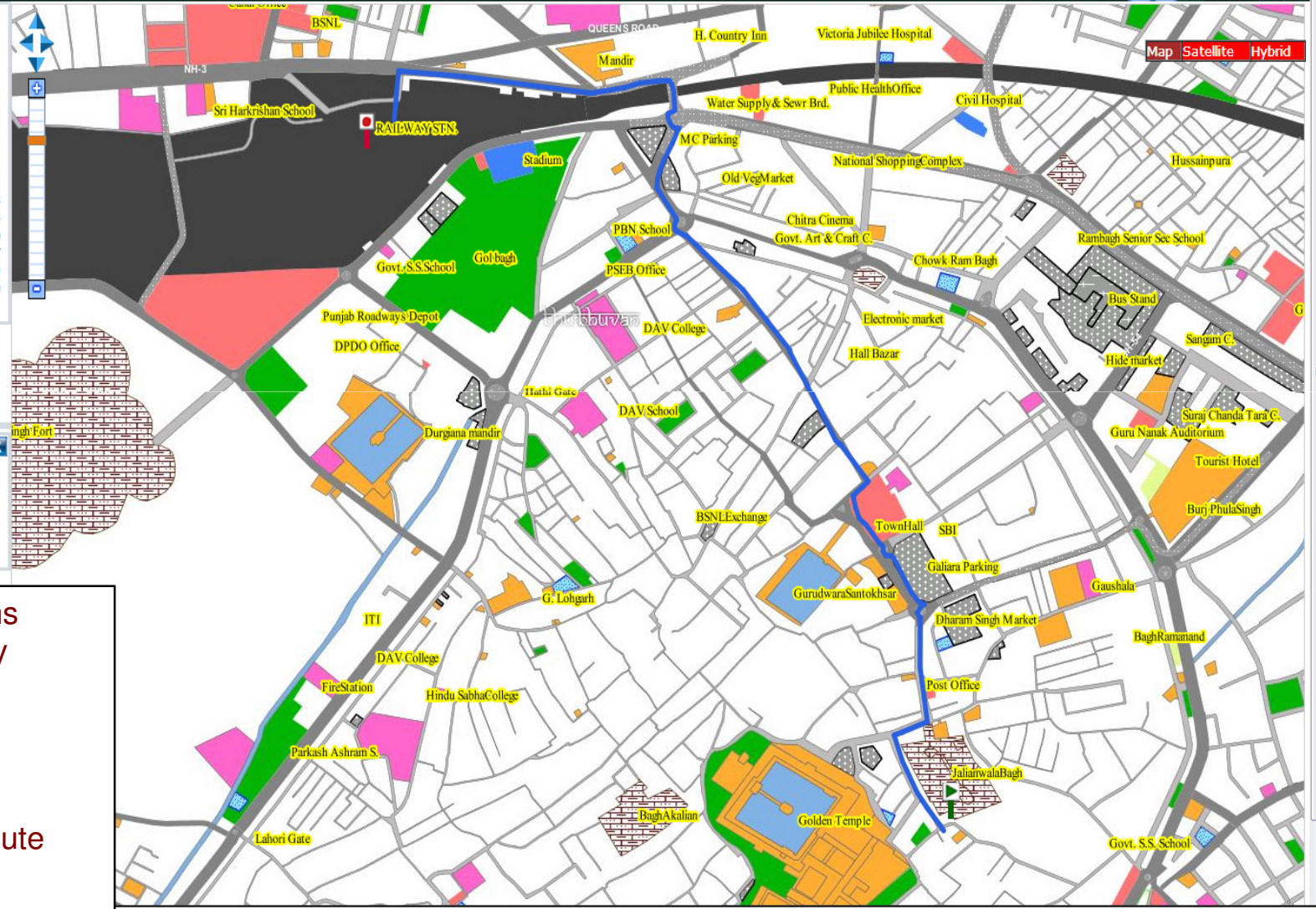
Tourism/Utility Information System for Cities

**Bhuvan Beta**
Indian Earth Observation Visualisation


Tourism : Amritsar



Welcome Bhuvanite Visit Stay Food Hubs Services Travel Economic Others Heritage Walk



Map Satellite Hybrid



Amritsar historically also known as Ramsadpurspur and colloquially as Ambarsar) is a city in the north-western part of India. It is the spiritual center for the Sikh religion and the administrative headquarters of the Amritsar district in the state of Punjab.

See the City

[Top Destination](#) [Hotel](#) [Travel](#)

Start

Destination

- Top Destinations
- Hotels and Stay
- Food Hubs
- Tourist spots
- Heritage walk
- Services
- Travel- Find Route
- Commercial

Municipal GIS Solutions



Ludhiana Municipal GIS



Welcome Bhuvanite

Amenity Property Tax Performa

Tools

Municipal GIS for **Ludhiana, Punjab**
[Services](#) [Information](#) [Downloads](#)
(By [Municipal Corporation](#) Ludhiana)

Know Your UID

Search by Ward

Zone
Block
Ward

Use to get UID on click

Search by Locality

Enter Locality name

Search by House No.

Enter House No. (Eg. 146-A) 1, Ward-49

Enter Buffer Size (Max 10,000m)

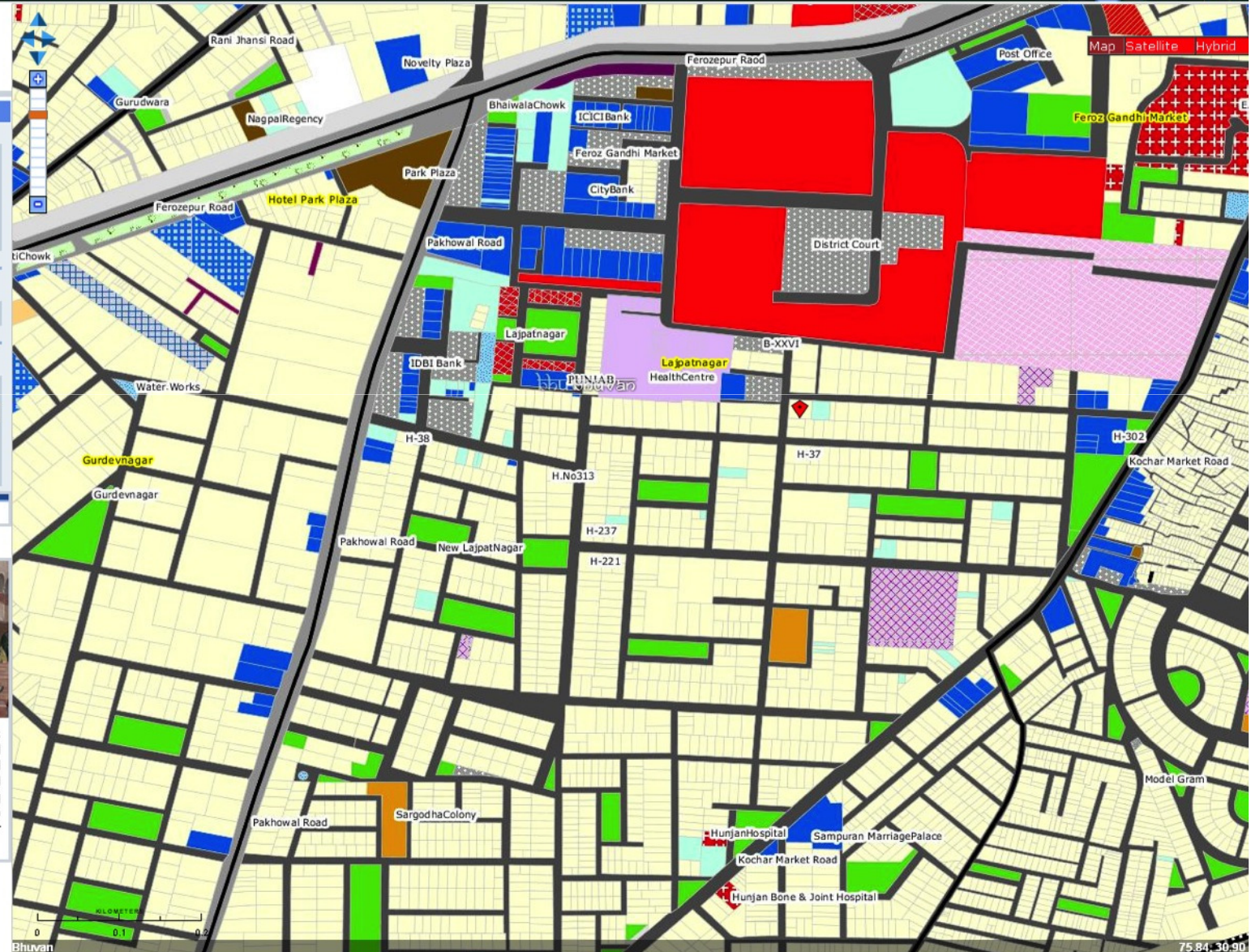
Amenity Bank (govt. Sector)

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Municipal GIS in Bhuvan projects facilitates [citizens](#) to know about the wards and facilities available, various schemes executed by the government, grievances redressal system besides facilitating administrators/planners to have a one stop online [planning tools](#) towards better governance.



75.84, 30.90



Unique Sectors for Geospaital Services

- **Requirements:**
 - **Location specific Info in respect of isolated tribes and tiny habitation – Geospatial location**
 - **Mapping of small hamlets having less than 50 houses**
 - **Mobile Appls for mapping of schools and their characterisation**
 - **DTH & Interactive Terminal based education – Use existing Tele-Education Hubs**
 - **Displacement of Habitation due to mining activities – District level**
 - **For effective development, SATCOM based education & monitoring using EO/ GIS/ GPS and mobile technologies**



Geology & Mining, Petroleum, Natural Gas Related

- **National Geomorphology & Lineament Mapping**
- **Landslide Hazard Zonation Mapping + Pilgrimage Route**
- **Important Areas for consideration:** landslide susceptibility Areas, landslide inventory and early warning, mineral prospecting, Mining areas monitoring, Mine dump analysis etc.
- Delineation of large Oil exploration targets;
- optimization of pipeline corridor using high resolution satellite imagery and digital elevation models;
- hyperspectral data analysis for gas exploration,
- Identification, positioning and route planning for drilling locations etc.... Geospatial Solution



WATER RESOURCES, GANGA REJUVENATION

- **Reservoir Sedimentation studies:**
- **Command Area Studies:**
- **Water logging and soil salinity:**
- **Assessment of irrigation**
- **River System Studies:** Clean Ganga Mission – A Major initiative in Geospatial Sector
- **Snow & Glaciers - Monitoring of glacial lakes / water bodies :**
- **Inventory & Monitoring of Glacial Lakes/ water bodies in the Himalayan Region of Indian River Basins**
- **Snow melt Runoff forecasting in Himalayan river basins**
- **India-Water Resources Info. System: A Web Enabled Water Resources Information System at National level**



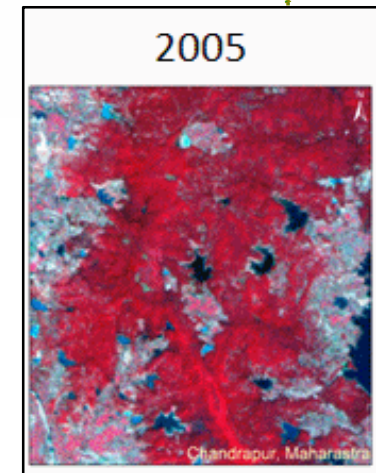
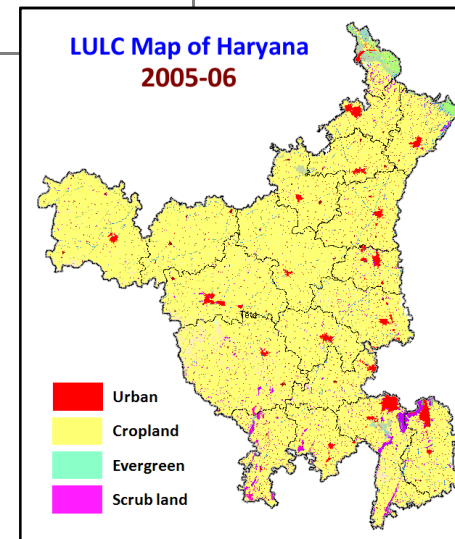
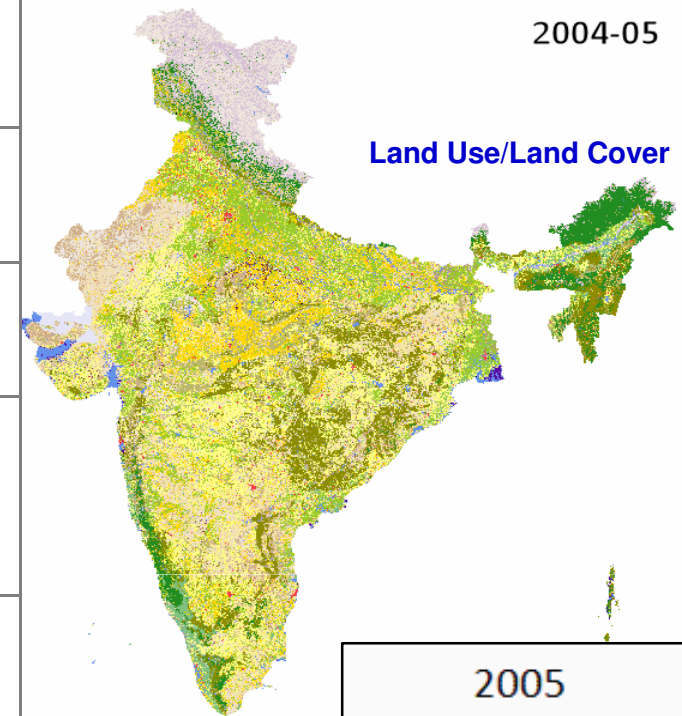
RURAL DEVELOPMENT

Need for Large Scale Base Maps & Monitoring tools

- **Pradhan Mantri Gram Sadak Yojna (PMGSY)**
Plan and Monitor District Rural Roads Plans
- **National Rural Employment Guarantee Scheme (MGNREGS)**
Plan and Monitor rural Assets
- **Indira Awas Yojna (IAY)**
Prepare Assets Registers, Plan & Monitor the Scheme
- **Watershed Development Program – Planning & Monitoring**

Natural Resources Management

Land Use/Land Cover (1:250,000)	<ul style="list-style-type: none"> 9 cycles (2004-05 to 2012-13)
Land Use/Land Cover (1:50,000)	<ul style="list-style-type: none"> 2 Cycles (2005-06 & 2011-12)
Land Degradation (1:50,000)	<ul style="list-style-type: none"> Erosion Mapping (2005-06) Salinity and Waterlogging
Geomorphology and Lineament <i>with GSI</i>	<ul style="list-style-type: none"> Mapping (2005-06)
Indian Forest Cover Alert System	<ul style="list-style-type: none"> Pilot study in Maharashtra (Jalgaon Dist) Extended to 6 States



Forest change alert system
(Chandrapur, Maharashtra)

Landuse data demand

Unique User : 137
Volume of data : 185 GB



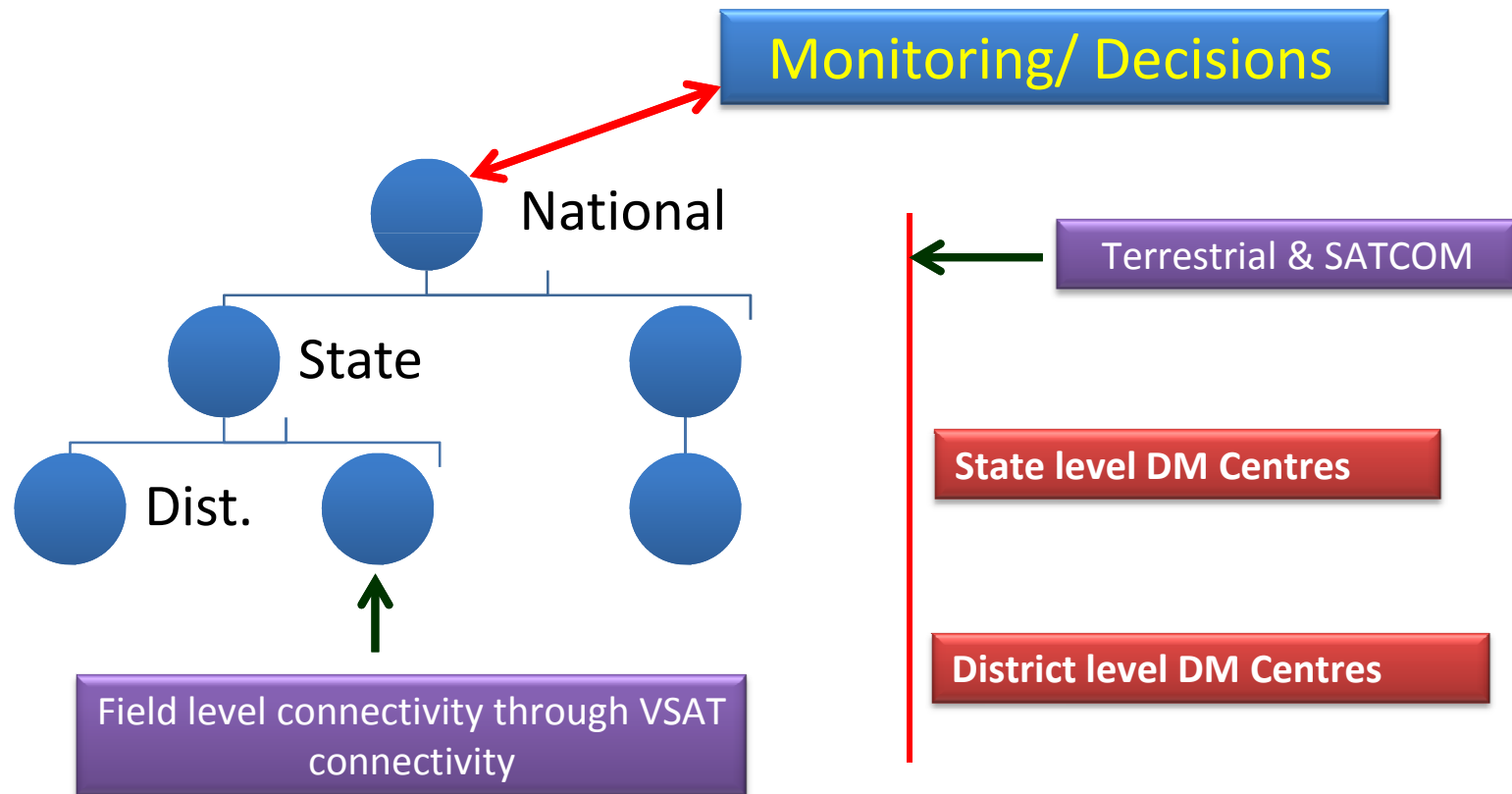
Communication & Inf. Technology

- **Telecommunications**
 - **Major Application is satellite Communication**
 - **Geoinformatics for Assets mapping (Towers etc) and problem of uncovered villages**
- **Information Technology**
 - **DIGITAL INDIA – Flagship Program**
 - **Need for establishing connectivity – terrestrial & SATCOM**
 - **Citizen-centric solutions**
 - **Potential use of Geospatial Technology**



Disaster Management & Emergency Response

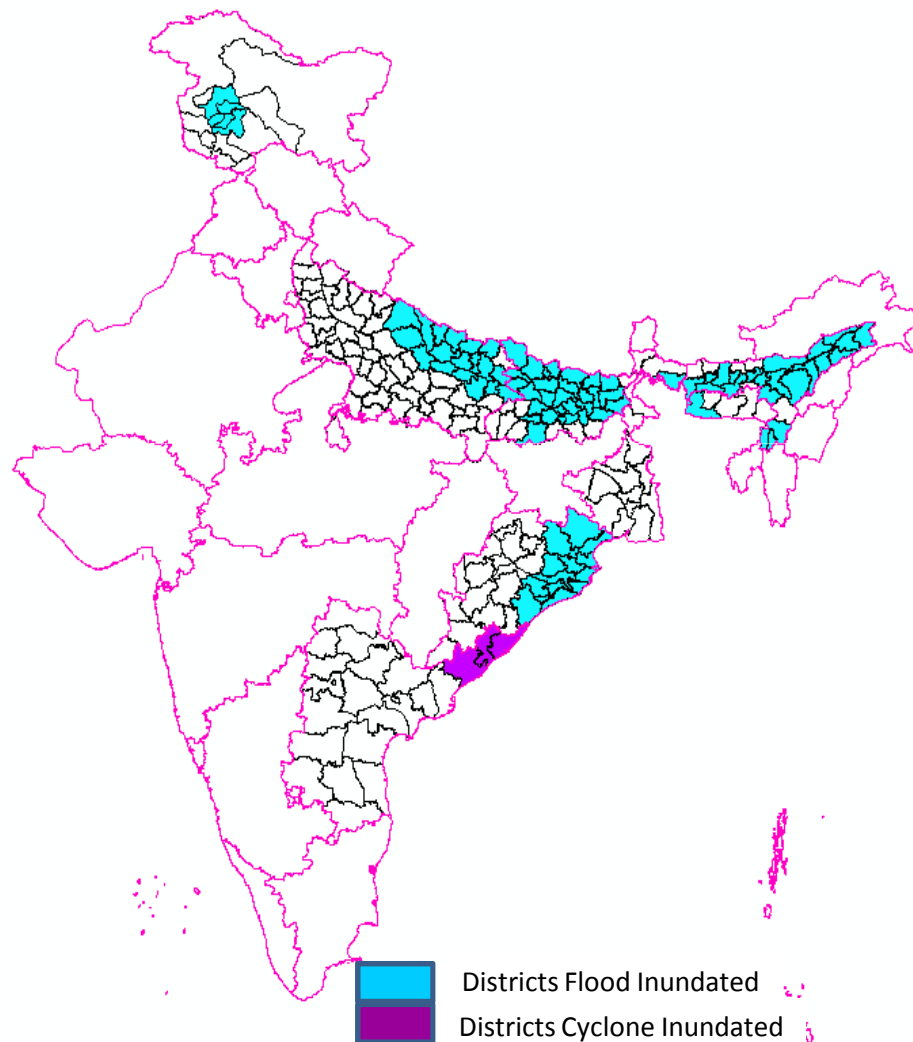
- **Need for Space Technology, IT and Geospatial solutions**



FLOOD RESPONSE - 2014

Mapping of Major Floods/Cyclones

nrsc



Highlights:

States Affected: 8
Flood Maps Sent: 112
(as on 30-Oct-2014)

Major Events:

Severe Floods – Jammu & Kashmir
Cyclone HUDHUD- Andhra Pradesh

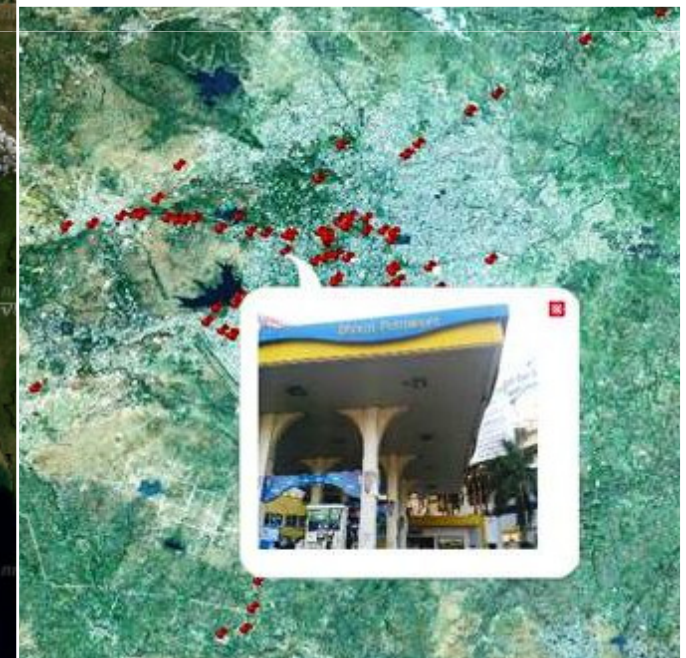
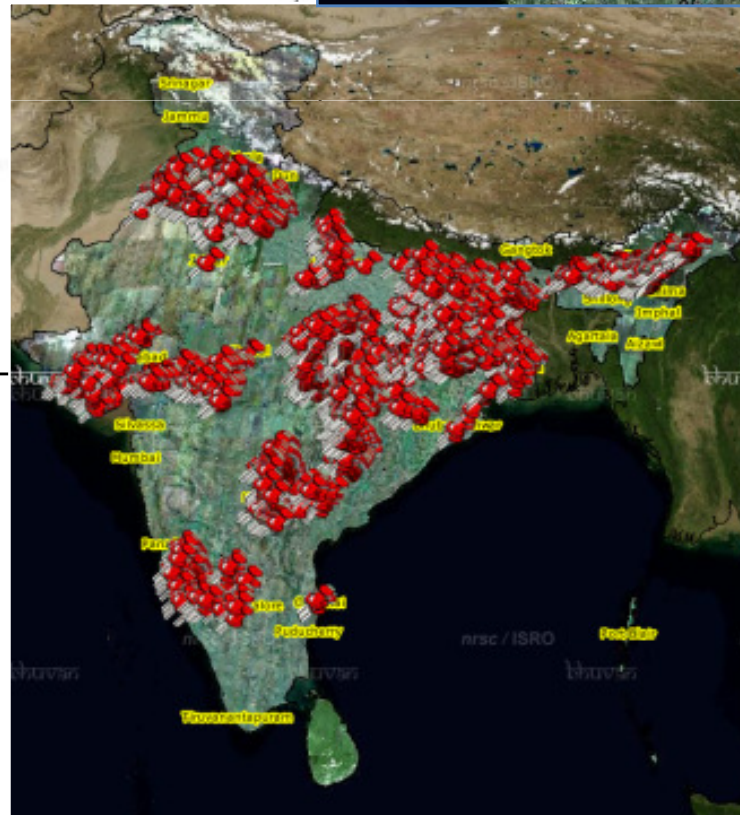
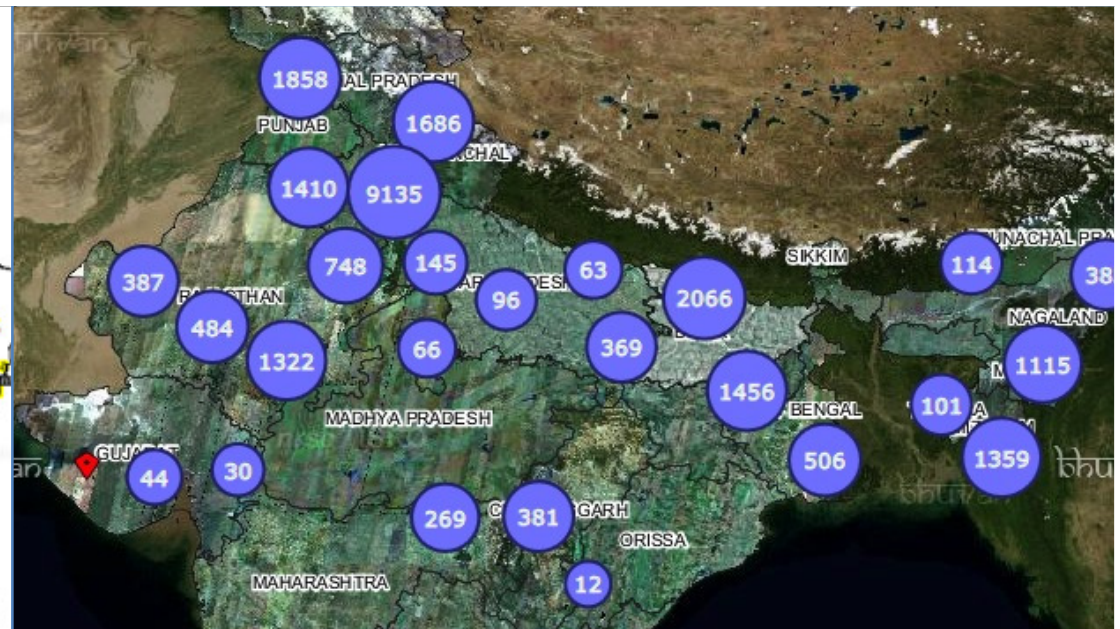
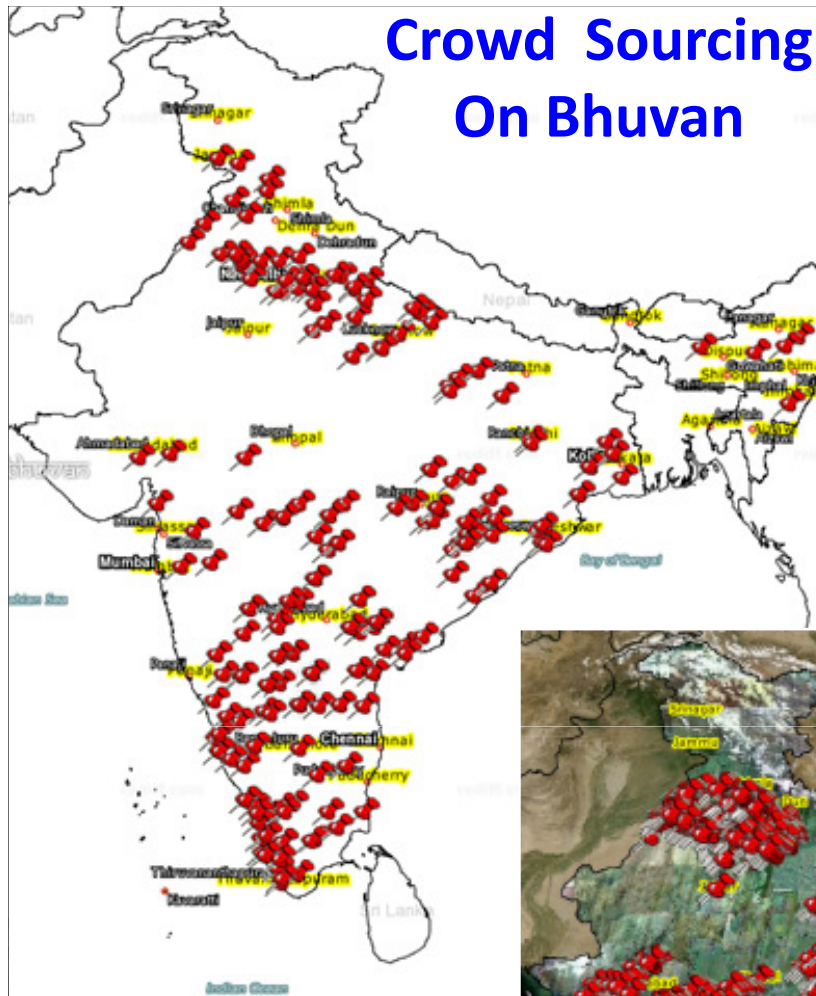
Data Used:

RISAT-1, CARTOSAT-2, RESOURCESAT-2
RADARSAT-2, WORLDVIEW, PLEIADES,
RESURS-P, TERRA-SAR-X, etc

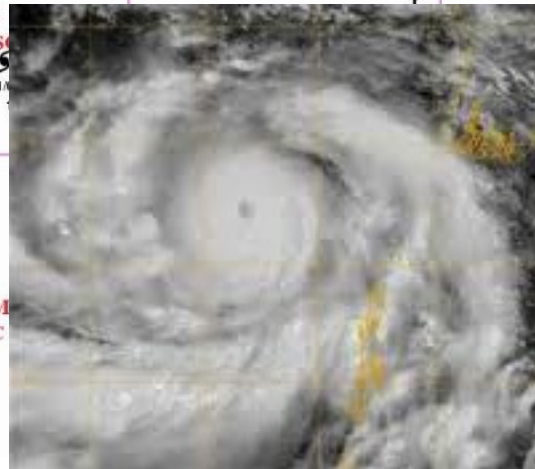
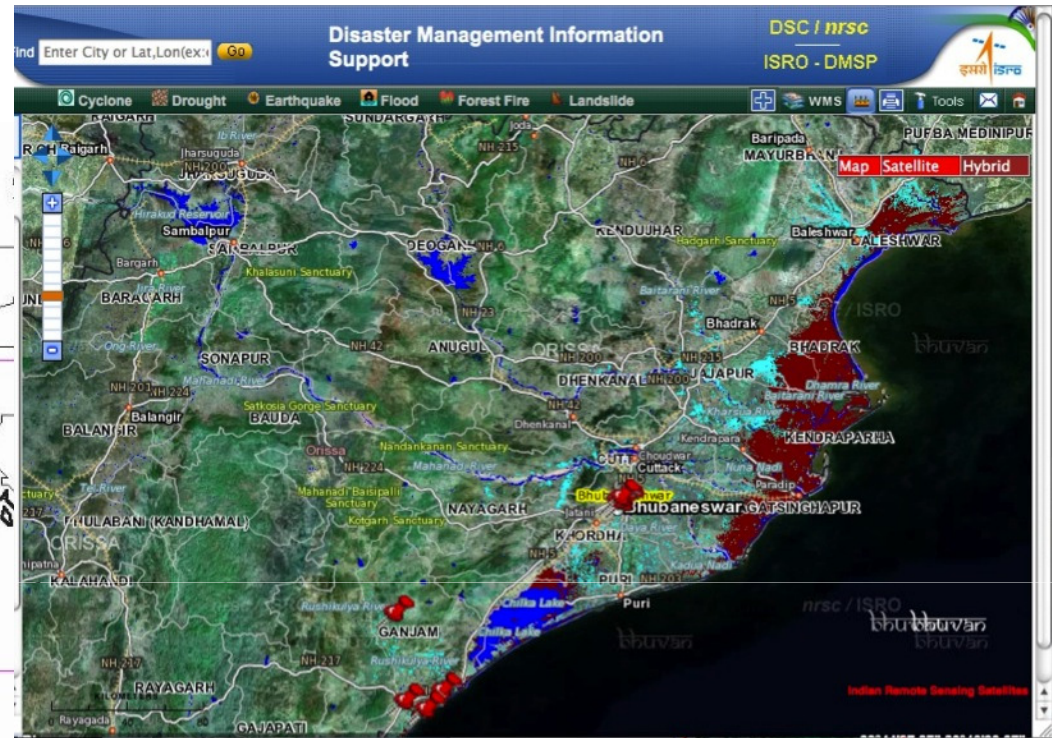
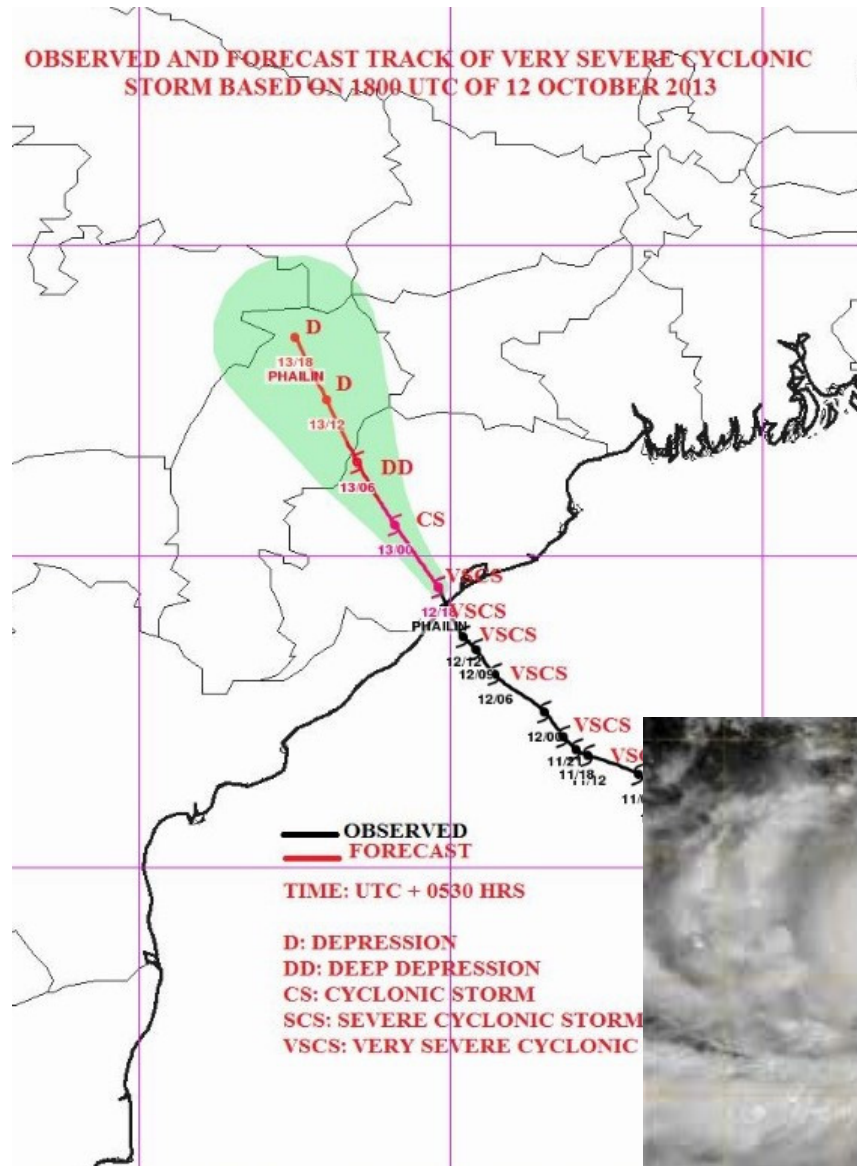
Users:

Ministry of Home Affairs (MHA)
State Relief Commissioners
NDMA, IMD, CWC

Crowd Sourcing On Bhuvan




Cyclone Phailin – online Flood inundation maps




- **RISAT-1** Microwave imaging and IRS Optical images were used for inundation mapping on near real-time basis

HudHud Cyclone – Online Service

**bhuvan**
Gateway to Indian Earth Observation

Disaster
Services(NDEM Public)

 **Hudhud Cyclone**
Android App Download

Welcome User [Login](#)

National Remote Sensing Centre

Enter City or Lat,Lon(ex:chennai)

[Cyclone](#) | [Drought](#) | [Earthquake](#) | [Flood](#) | [Forest Fire](#) | [Landslide](#)

[Tools](#) | [Updates](#) | [Bhuvan Store](#) | [Help](#)

Cyclone

Cyclone NILOFER

Cyclone HUDHUD

Track

Quick Mobile Survey

Damaged
Feature

All

Remove

Total No of Points Found:24792

☒ Crop Damage

☒ Drinking Water/RWS

☒ House Damage

☒ Livestock/Fisheries

☒ Other Building Damage

☒ People Marooned/Require Relief

☒ Power

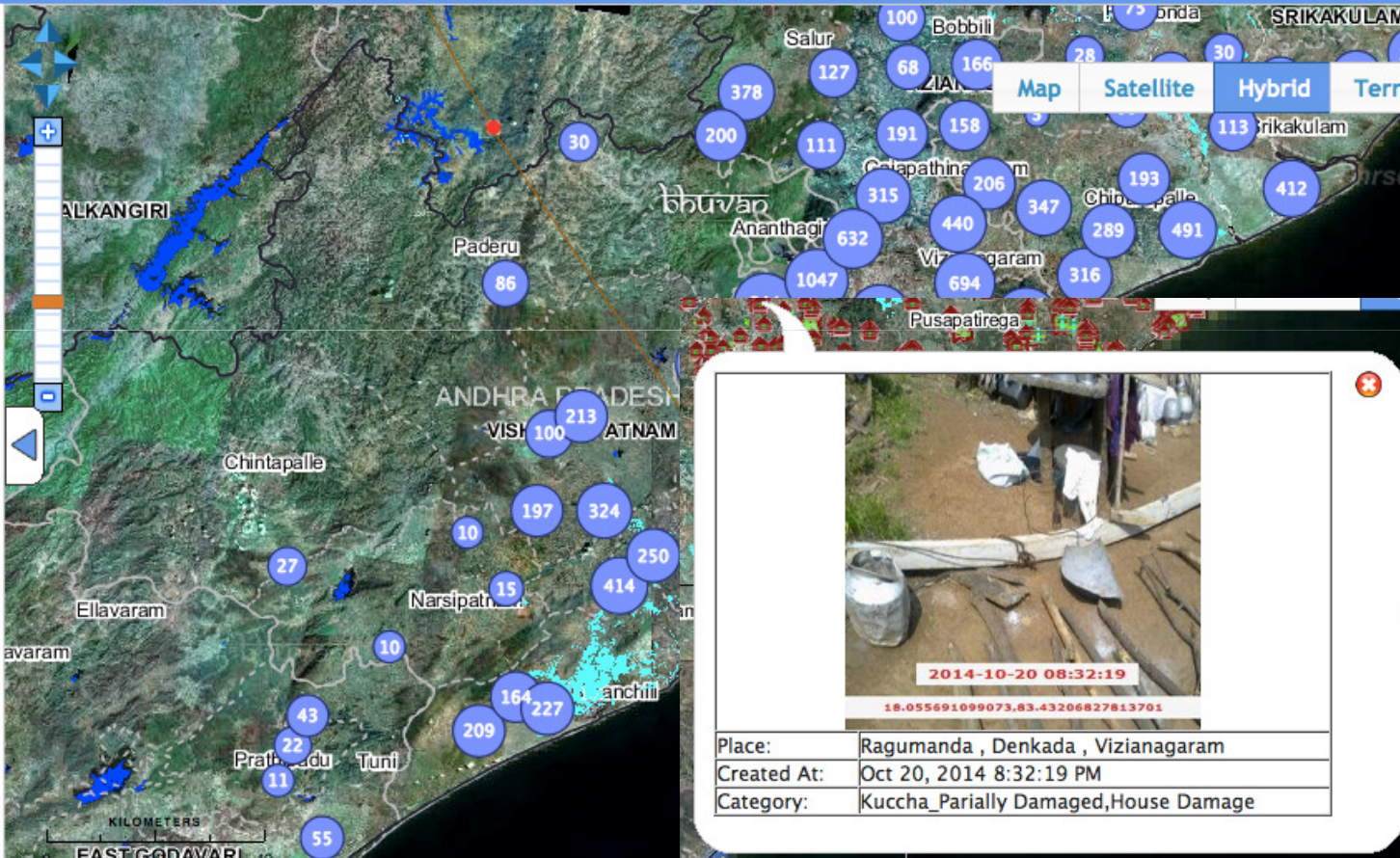
☒ Tanks/Canal Breach


☒ Tree Fallen

☒ Telecom

☒ Road

Support for International Disasters





2014-10-20 08:32:19
18.055691099073,83.43206827813701

Place:	Ragumanda , Denkada , Vizianagaram
Created At:	Oct 20, 2014 8:32:19 PM
Category:	Kuccha_Partially Damaged,House Damage



Election Commission - AP

"Role Based Access – HQ, District (23 Nos), Assembly (294 Nos) login"

1. Basic Minimum Features (BMF)

- Collection of 17 parameters of each Polling station using Web / Mobile App as Pre-Poll activity

2. Analysis & Reports

- State/ District/ Assembly wise BMF details and updates / Spatial Analysis
- Data Downloads as per requirements.

Gateway to Indian Earth Observation National Remote Sensing Centre

You have Logged in as CEO, Andhra Pradesh

District: Chittoor

Name & No of Assembly: Chittoor

Name of the Mandal: Chittoor

Name & No Polling Station: 7, MURAKAMBATTU

Name of the Polling station Location (building in which PS is located): N P PRIMARY SCHOOL NEW BUILDING, MURAKAMBATTU Lat: 13.2463 Lon: 79.12

PS room dimensions (Length & width in Feet): 21 Feet 15 Feet

Entry & Exit: ☒ Separate ☐ Common

Ventilation: ☒ Yes ☐ No

Ramp Facility: ☒ Yes ☐ No

Drinking Water Facility: ☒ Yes ☐ No Staff Arranged

Toilets (Men & Women): ☐ Separate ☒ Common ☐ No Toilet

Furniture: ☒ Available ☐ To be arranged

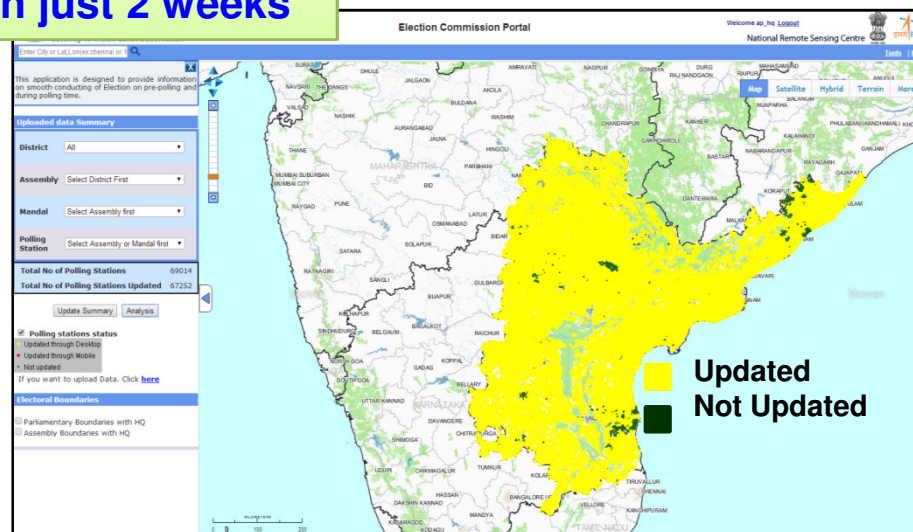
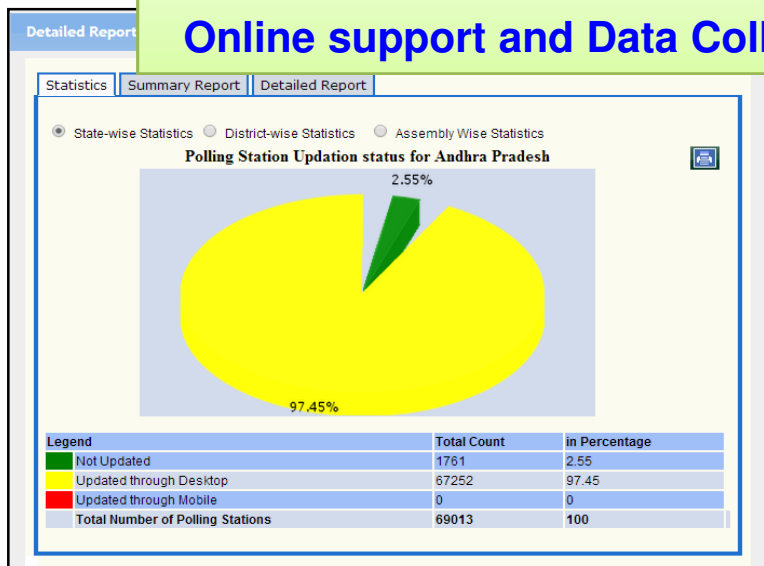
Electric Facility: ☒ Yes ☐ No

Facility Available: ☐ SAMP Sockets ☒ Electric Points ☐ Fans ☒ Lights

Total No. of Polling Stations 69014

No. of Polling Stations covered – 67502

Online support and Data Collection in just 2 weeks

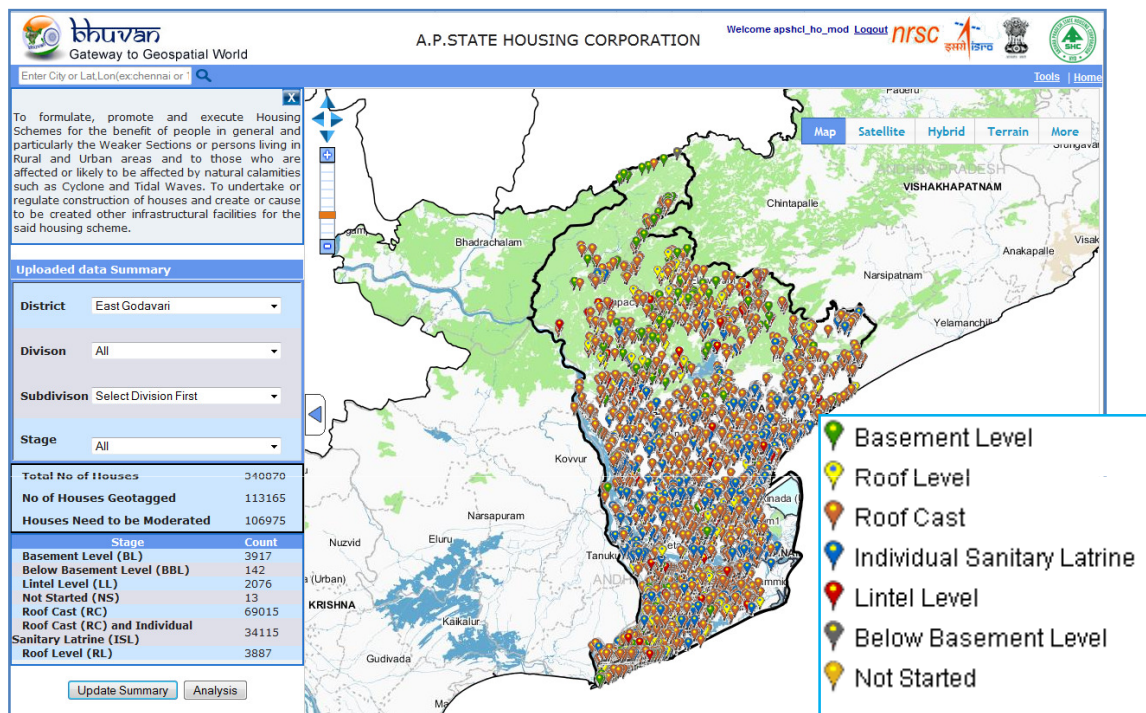




AP State Housing Corporation

“Role Based Access – HQ, District (13 Nos), Divison (43 Nos),Subdivison(179 Nos)”

Visualization of Geo-tagged houses through Mobile



- Geotagging of houses through Mobile apk with customized attributes.
- Spatial View of Geotagged Photos
- Stage Wise Filter of Houses
- Report generation
- Moderation - Visual Verification for DEE logins

Geo-tagged Photo Details

APSHCL HOUSE DETAILS	
	1 2
observername	B. SURYANARAYANA
org	APSHCL, BONDAPALLI MANDAL
mobilen	7799722647
creationtime	2014-11-24 10:46:50
uid	c29b1fe08384f2a
User Id	AE022001
Location Captured from	Door Step (DS)
Photo-1 captured from	Center
Photo-2 captured from	Right
Beneficiary ID	020212019p3668867
House Type	Single
Direction (Face of the House)	North
Stage of Construction	Roof Cast (RC)
Condition of the House	Good
Occupation Status	Occupied by Ben

Statistics as on 25-12-2014

Total No of Houses	3682255
No of Houses Geotagged	1293790
Houses Need to be Moderated	1264504

NRSC Attempts on empowerment

NRSC Data Centre – for Data Dissemination

Bhuvan - Platform for Geo-spatial Governance

India-WRIS – The Water Portal for the country

NDEM – Public- Disaster Management Portal

Satellite Data/ Products /Services /
Applications



NDEM
PUBLIC



Thank You

