GeoPortal on North Eastern District Resources Plan to support effective Governance applications

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Director

NORTH EASTERN SPACE APPLICATIONS CENTRE

www.nesac.gov.in

About NESAC

Space Technology for benefit of NE Region

- Mapping & Monitoring of Natural resources
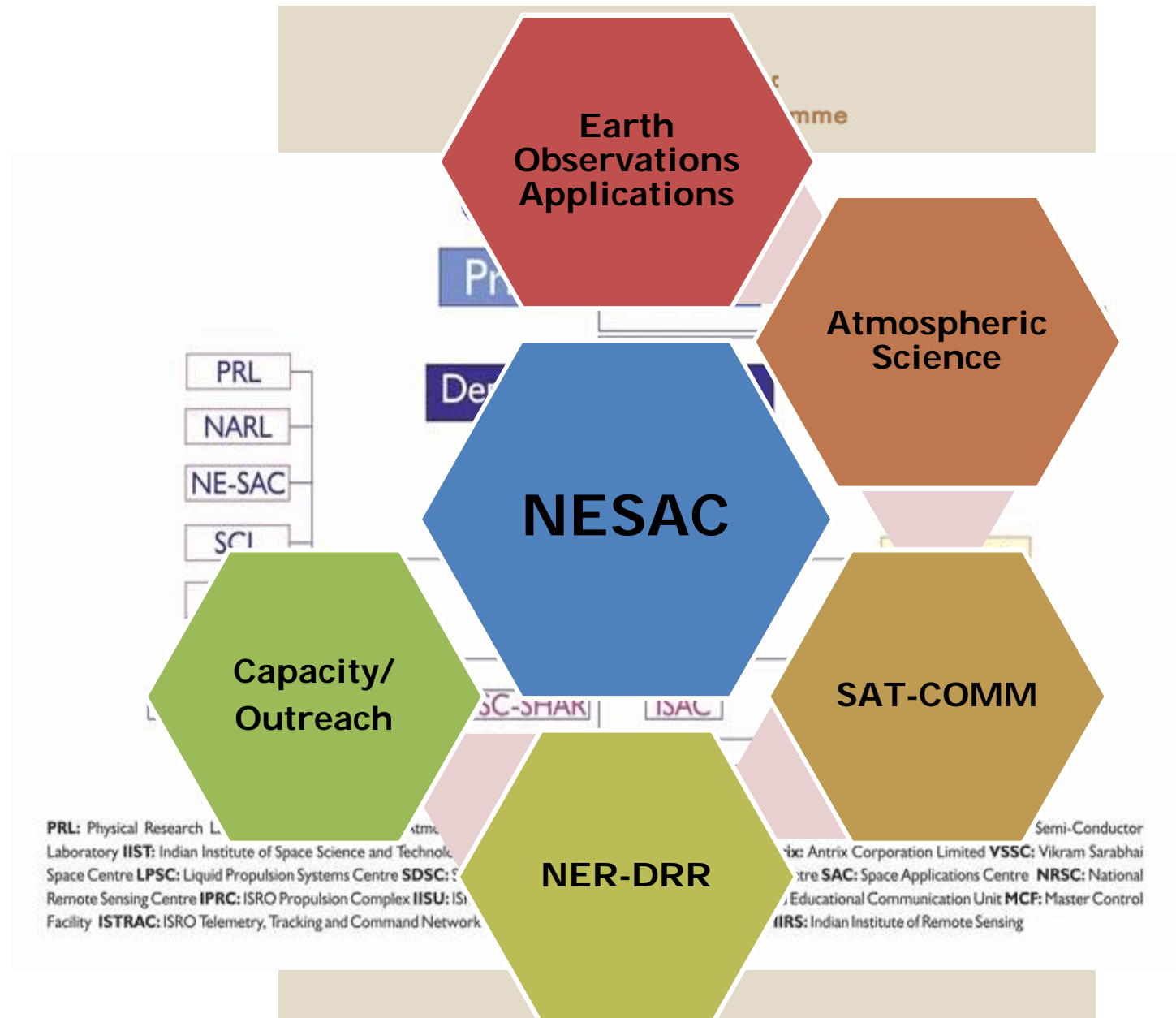- Providing inputs to users for development planning in NER
- Effective Disaster Mitigation Mechanism
- Specific regional projects & R&D activities
- Information dissemination
- Academic interface & Capacity building

NESAC was established on 5th Sept, 2000 under the **joint initiative of DOS and NEC.**

PRL: Physical Research L... ...tm.
Laboratory IIST: Indian Institute of Space Science and Technol...
Space Centre LPSC: Liquid Propulsion Systems Centre SDSC: S...
Remote Sensing Centre IPRC: ISRO Propulsion Complex IISU: IS...
Facility ISTRAC: ISRO Telemetry, Tracking and Command Network

Semi-Conductor
...ix: Antrix Corporation Limited VSSC: Vikram Sarabhai
...tre SAC: Space Applications Centre NRSC: National
...y Educational Communication Unit MCF: Master Control
...IRS: Indian Institute of Remote Sensing

- Earth Observations Applications
- Atmospheric Science
- NESAC
- SAT-COMM
- NER-DRR
- Capacity/ Outreach

Expanding Capacity building & Outreach

Certificate courses
- 3 months Certificate course
- 1 Yr Post Graduate

Master Degree courses
- Mtech/Msc (GeoInformatics)

PhD Programme
- With NEHU, DU etc.

Facilities
- High speed campus 10 G Wifi
- Smart class room (2)
- Sophisticated lab (2)
- Hostel (60 seater)
- Library facility

NESAC OUTREACH FACILITY
NORTH WEST VIEW

NESAC OUTREACH FACILITY
SOUTH EAST VIEW

New Outreach facility

Capacity building & Outreach

- **Regular Certificate courses** (4)
    - Basic course- RS & GIS
    - Advanced courses- Advanced GIS, UAV, Microwave RS etc.

- **Tailor made courses** (6)
    - Different Govt. Dept.
    - Educational Institutes

- **Encouraging students**
    - Students Internships (198)
    - Students visit (1200+)

- **Academic linkages**
    - Academic interactions – 155 participants & 21 Institutions
    - MoU - NEHU, USTM, DU, DBU, KazU, NIT-M etc.
    - Collaboration- ICAR, NEIST, NU, AAU etc.
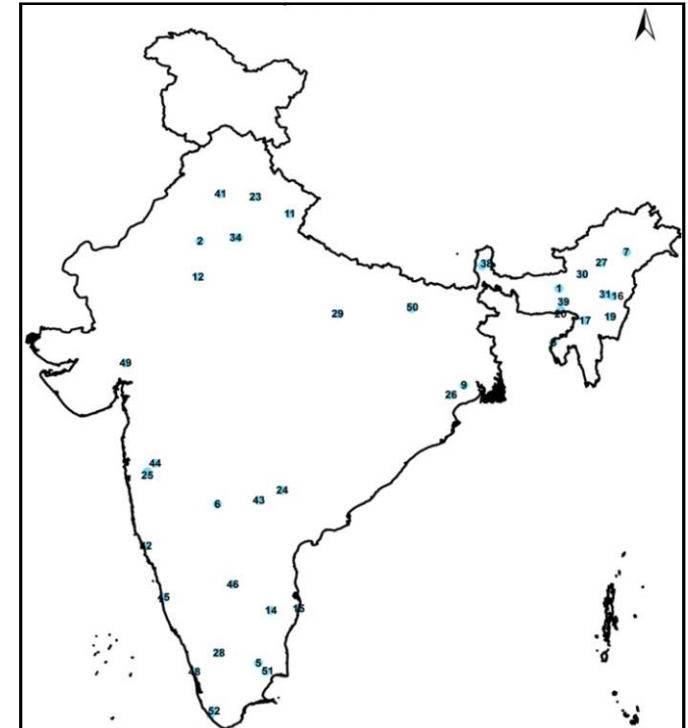
Students from different parts of India

Large Nos of Workshops/Exhibition

Impact

Major Application Sectors

- Forest
- Agriculture
- Urban
- Geo-Tagging
- Rural Development
- Water
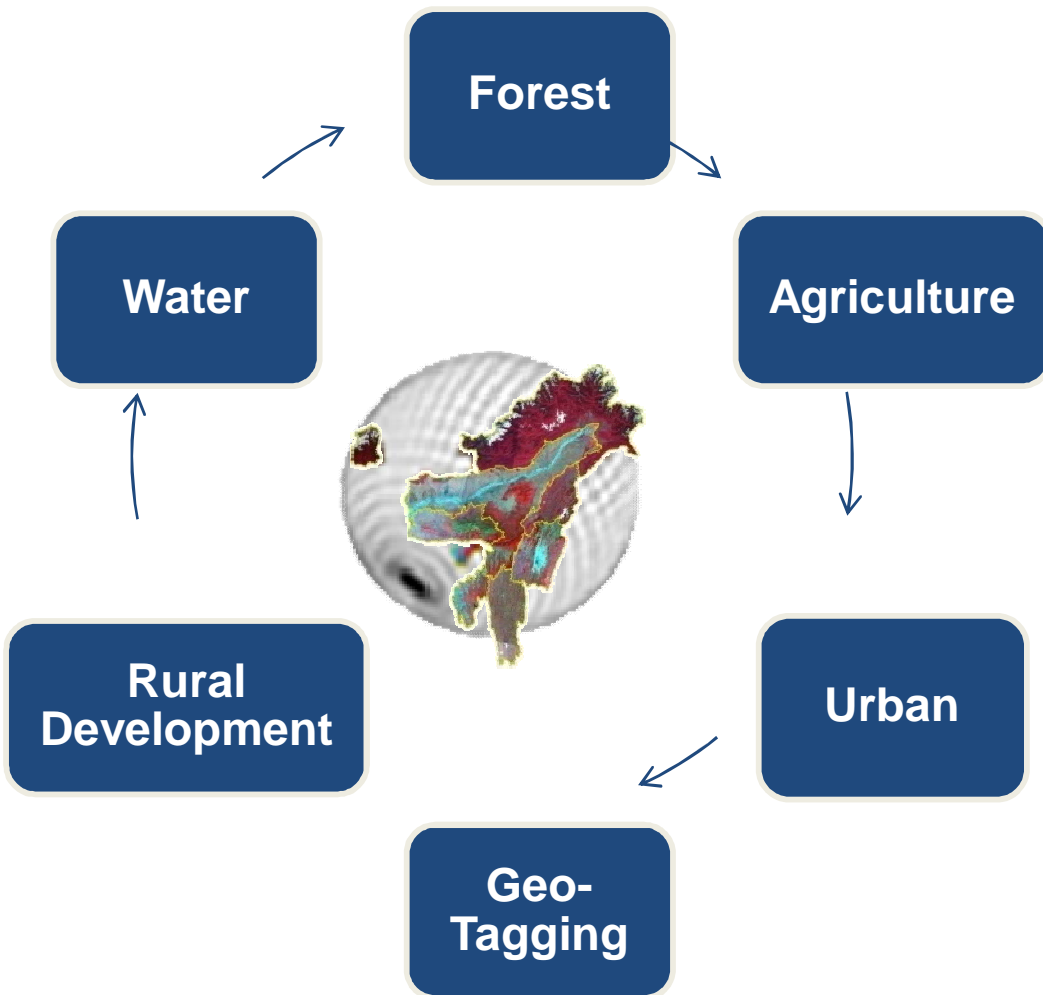
- Monitoring the schemes and making the system accountable
- **Bringing transparency in data**
- Evaluating polling booths for the conducting hassle-free elections
- **Strengthened the planning of watershed management**
- Improved telephone network connectivity for Meghalaya
- **Reported 5000+ Forest fire incidents**

- 15+ Governance Apps   10+ Mobile Apps
- 2.6 Million Sq Km data Processing

Relevance

- Lack of Transparency
- Improper monitoring
- Authenticity: Improper Plans
- Data sharing issue: common format
- Redundancy: duplication of efforts
- Lack of awareness on GIS
- Data not available in proper way
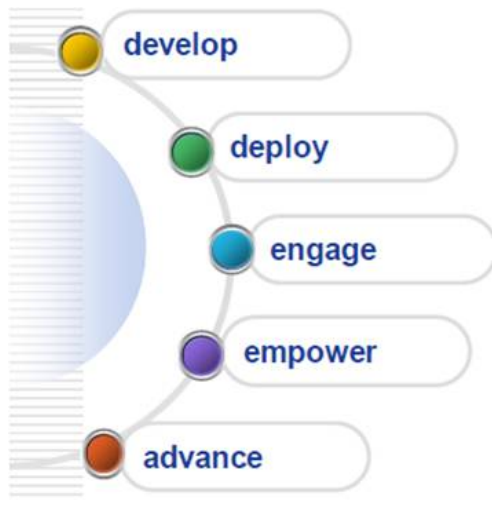
North Eastern District Resource Plan
उत्तर पूर्वी जिला संसाधन योजना

Benefits

- Maximizing the use of GIS for Planning
- Better decision making : land & water resources, assets & Infra planning- Improving livelihood prog. etc.
- To support maximum use of public resources
- Equity of access- to ensure better access to all bonafide users
- Ownership of the system

develop
deploy
engage
empower
advance

Objectives

To ensure
- Relevant
- Up-to-date
- Affordable
- User friendly
- Single window
- District & block level Info.

To support
- DPR
- Master plan document
- Defining proposals
- Resource Management

Targeted users
- Dist Adm.
- Line Depts
- Central agencies
- Academia
- Industry

Execution
- 36 districts in Phase-I
- Remaining districts in Phase-II
- Demand based applications

- **User need assessment** through awareness programme
- **Integration of relevant Geospatial data** at 1:50K (district) & 1:25K (block) scales
- **Single Window Dashboard Web Applications** to enhance the Governance activity
- **Geo-processing tool** to support user demand criteria & Plans
- **Capacity building/Outreach** for maximum utilization of Space inputs.

Database availability

Every district contains	
Information Modules	**Nos of layers**
Base/Admin data	8
Infrastructure	4
Land resources	10
Water resources	6
Planning inputs	3
Terrain	1
Disaster Management Support	3
Total	**30-35**

nedrp — North Eastern District Resources Plan — North Eastern Space Applications Centre — Thoubal district of Manipur

Total layers integrated
- More that 2820+ layers pertaining to 101 districts
- Total 3127 + point layers for Governance applications
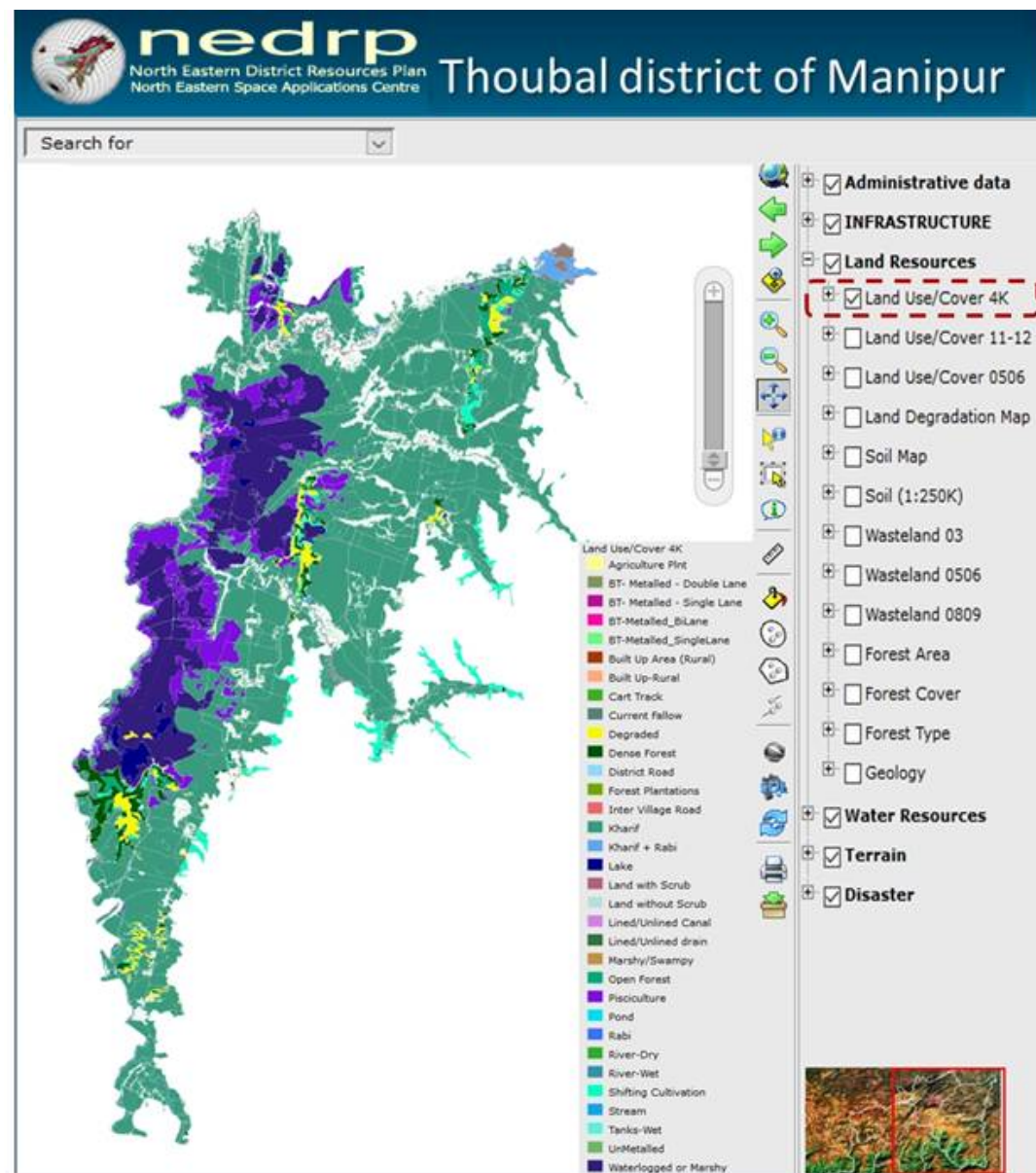
Information Modules
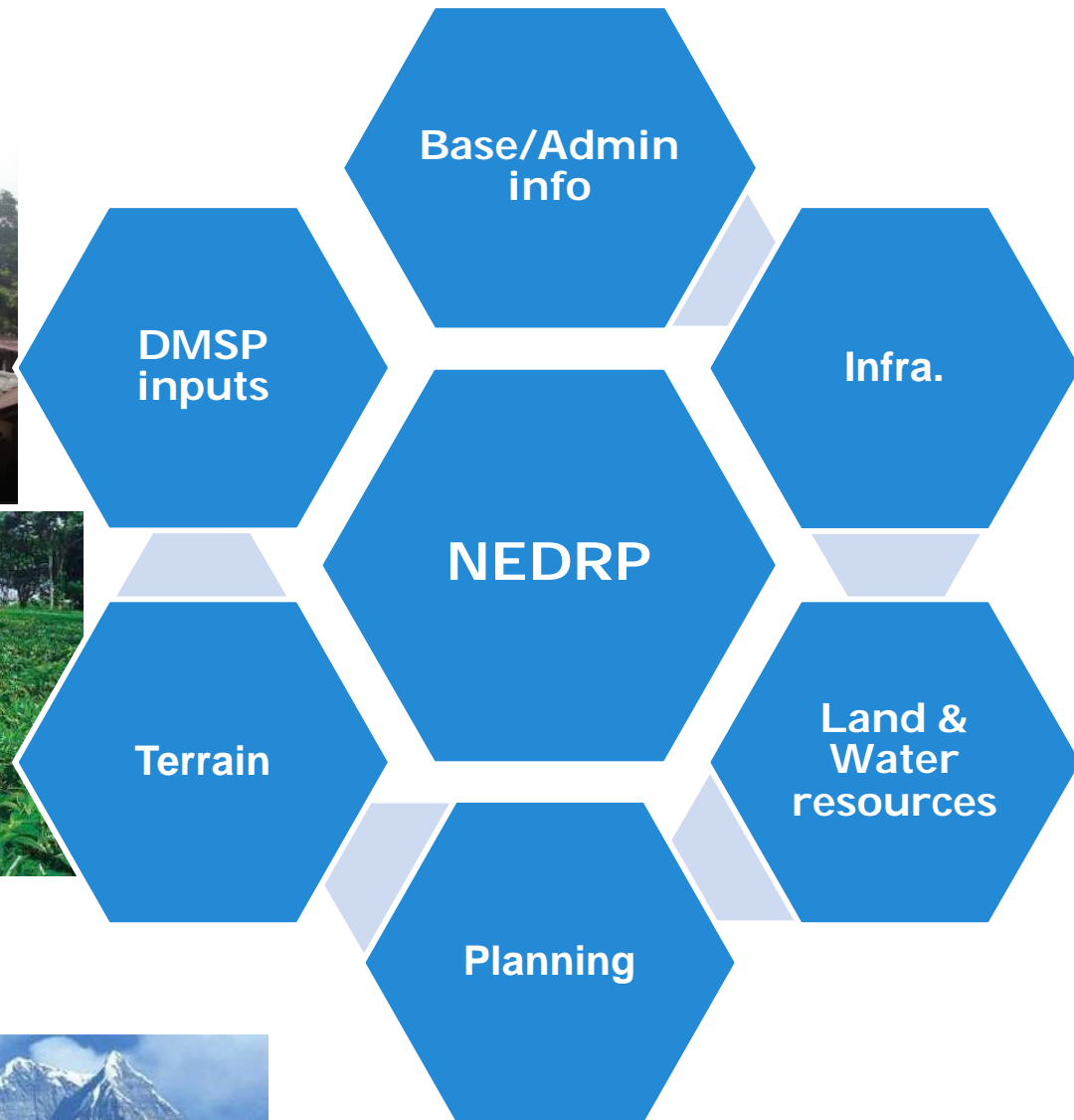
Geospatial Applications & Services

NESAC | About NEDRP | Collaborations | Contact Us | Disclaimer

Updates | Releases

State Level NEDRP Workshop at Imphal on 29th November,2017

NEDRP to support Village Resources Planning for MBDA

Additional 56 districts added into

Read more..

Other ISRO/ DOS Portals

ISRO Bhuvan | SILKS | MOSDAC

INDIA WRIS

APIB | NERDRR

Visitor Statistics

5 3 9 5

FEEDBACKS

UPCOMING WORKSHOP

STATEWISE WORKSHOP 2017

ElectionGIS
Election GIS provides information on the polling areas, polling states...

Project Monitoring
Monitoring the status of the Projects of North Eastern Council (NEC).....

CensusGIS
Provides demographic details based on the 2011 census records...

GeoTourism
Geovisualization of tourist hotspots on satellite imagery...

Governance Applications

ForestGIS
Information regarding forest cover, forest density...

LiveGIS
To generate forest fire vulnerability zone...

VRIS
Village Resource Information System for Meghalaya Basin Development Authority

SericultureGIS
A single window information system for the planners, administrators and farmers...

Geo Explorer

2D Data Visualization and planning tool for districts of NE states

Choose State ▼   Select District ▼

Open GeoPortal!

User Manual Flyer

Data Services

Data sharing Gateway for the registered users

Login

LISS III (ASSAM)

Beta version released on 5th September, 2015 | Full version released on 5th September, 2016 | Site last updated on 30 January, 2018

Optimal locations of Mobile Towers

Total 9000 + uncovered villages in NER and 2000+ Mobile Tower locations proposed (DPR inputs for Department of Telecom, GOI)

Strengthening the Planning of IWMP
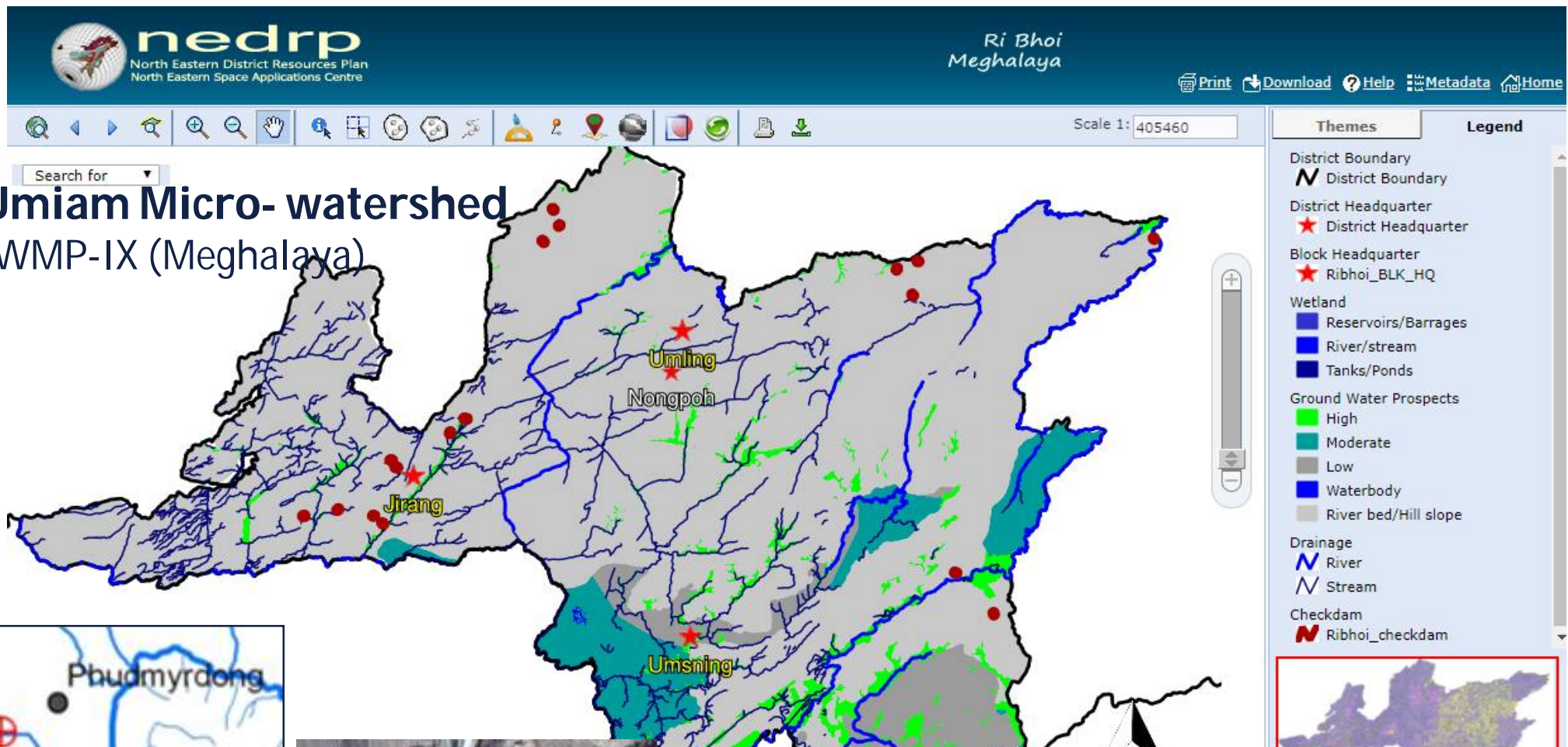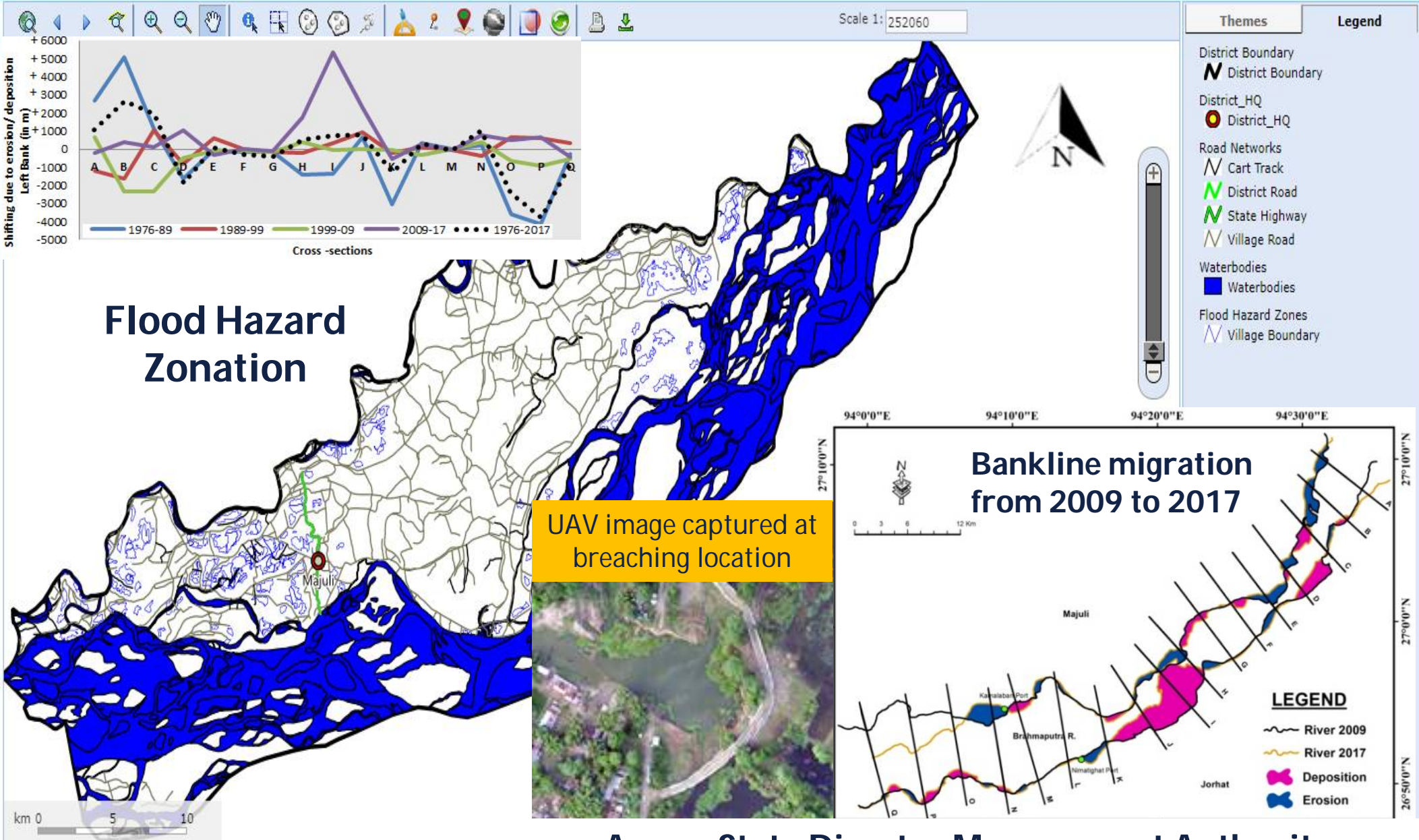

Umiam Micro- watershed
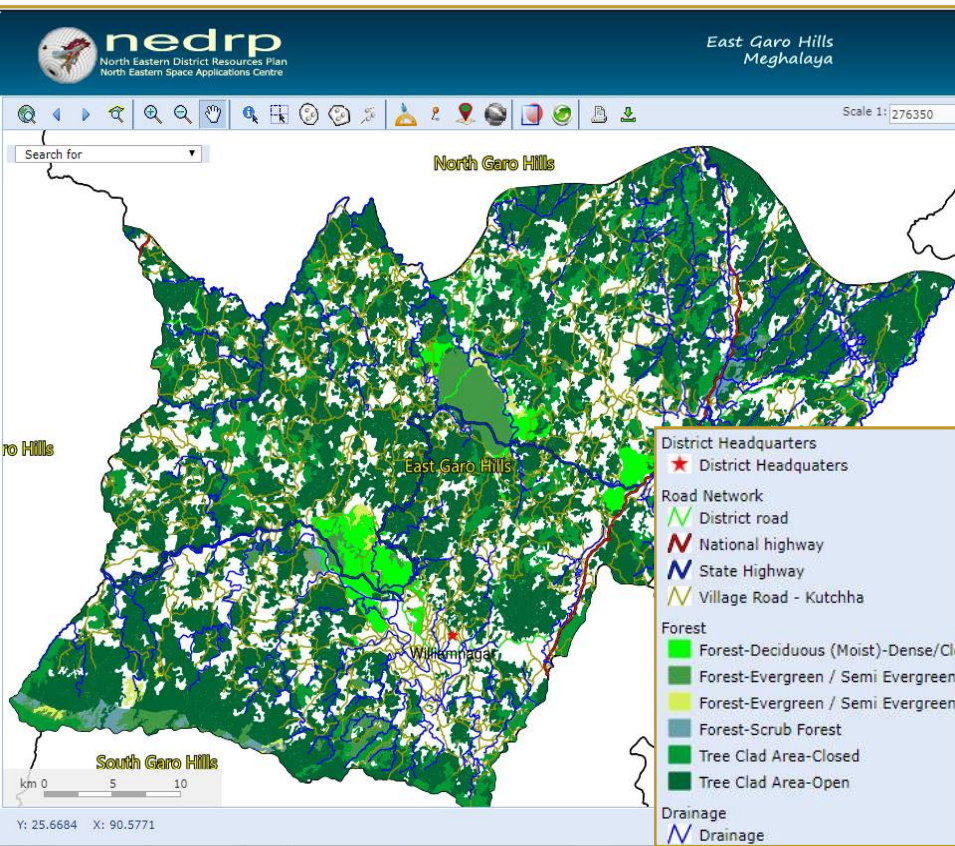IWMP-IX (Meghalaya)

Inputs are being used successfully for preparation of DPRs for implementation of IWMP - **Basin Development Authority**
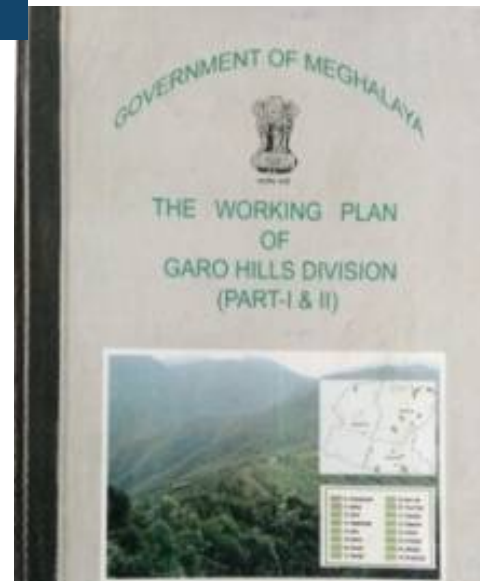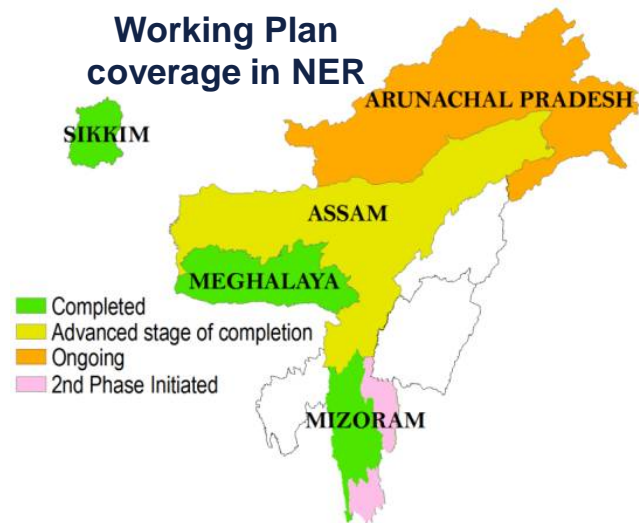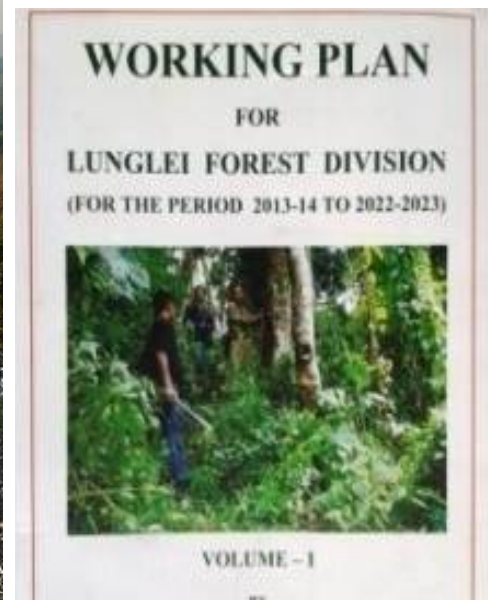
To support Disaster management

Majuli
Assam

Flood Hazard Zonation

Bankline migration from 2009 to 2017

UAV image captured at breaching location

Assam State Disaster Management Authority

Achievements in Forestry

Land Resources & Forest density map

Working Plan coverage in NER

- Completed
- Advanced stage of completion
- Ongoing
- 2nd Phase Initiated

Approved Working Plan for Garo Hills Forest Division

Working Plan for Lunglei Forest Division

Success Story

- Forest Working Plan for Meghalaya and Mizoram have been approved
- Deliverables are also being used for environment related study
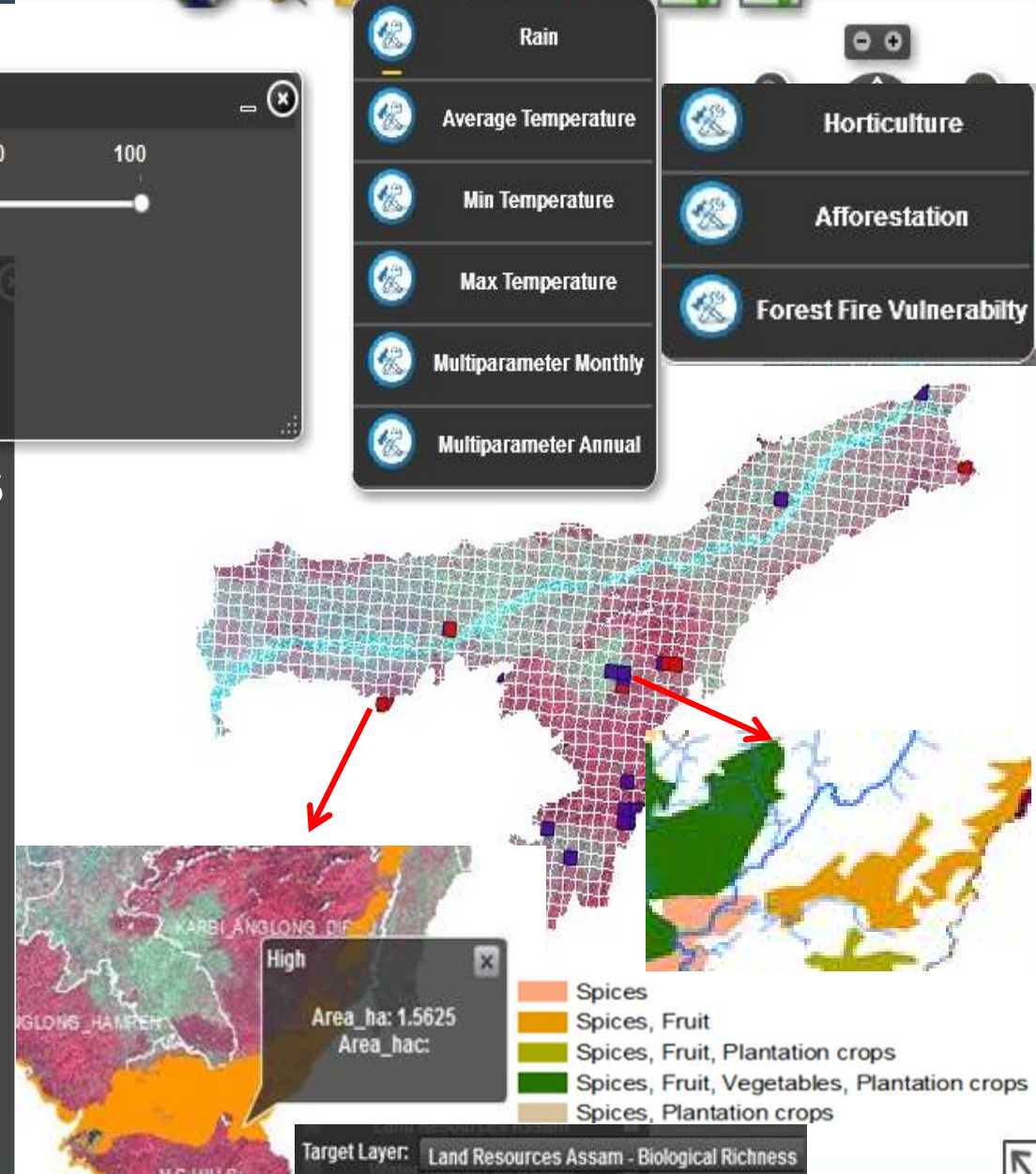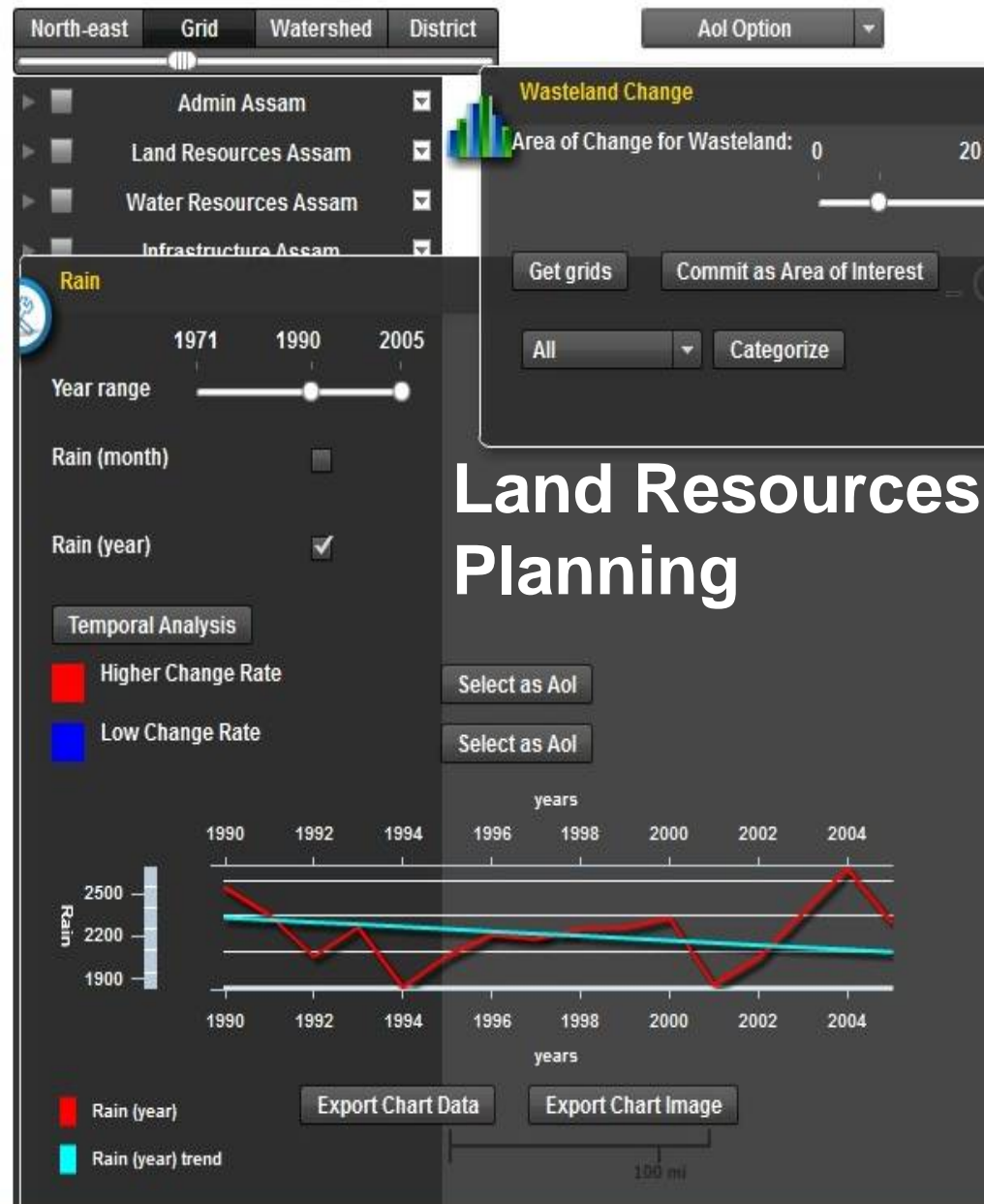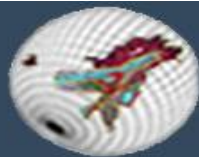
Enhanced Geo-Processing Capability

3 ways to Access to NEDRP

- NEDRP Portal – Visualize, Analyze, Extract info
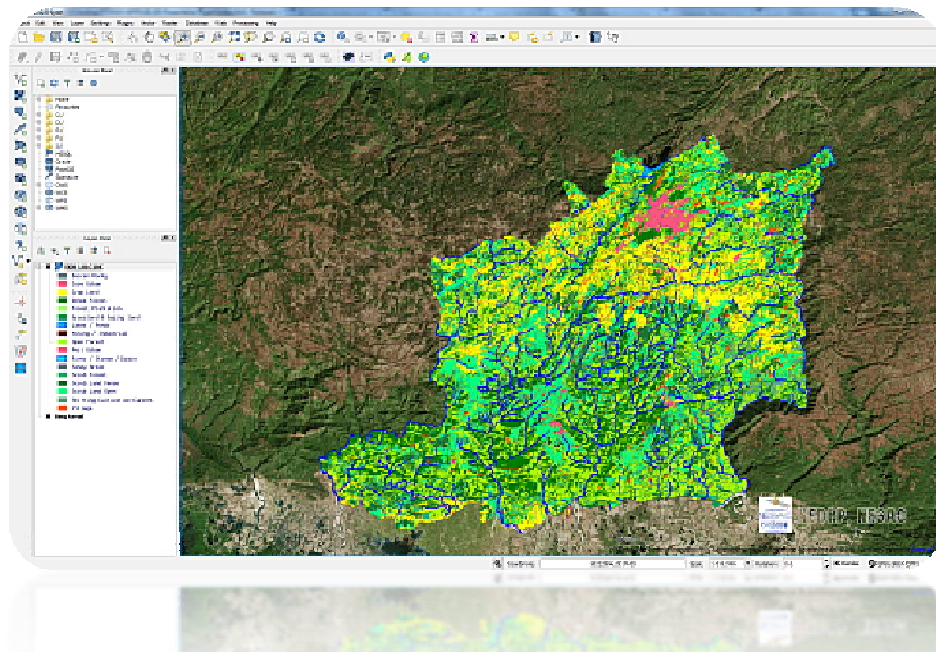 www.nedrp.gov.in

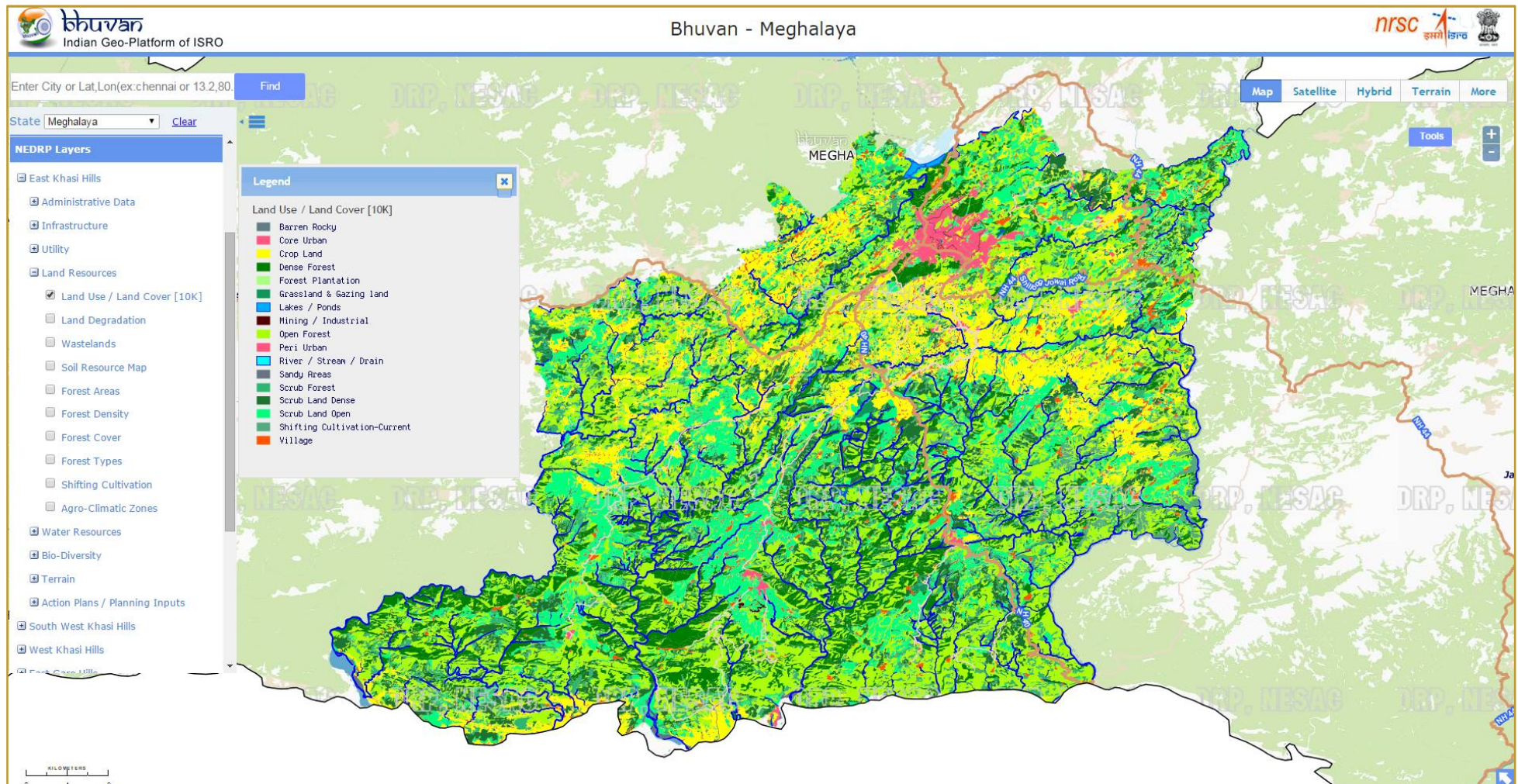- Access data as service - MAPS as a service. Viz WMS, WMTS, WFS etc

- Download GIS Datasets - via Data Sharing Gateway.
  http://data.nedrp.gov.in

Access NEDRP via OGC web service

- Access data as service - MAPS as a service. Viz WMS, WMTS, WFS etc

NEDRP Data as accessed and visualize in ISRO Bhuvan Geoportal
http://bhuvan.nrsc.gov.in

GeoExplorer – 2D Data Visualization

NEDRP Portal for Champhai District, Mizoram

Understanding & Operating the NEDRP Portal Tools

21 Inbuilt GIS Tools for Interacting with the map dynamically

Search by Keyword

Navigation Tools
- Zoom to Full Extent
- Zoom Backward
- Zoom Foreward
- Zoom To Selected
- Zoom In
- Zoom Out
- Pan / Navigate Areas on Map

Search/Analyse/Extract
- Identify Features on Map
- Select Features – By Rectangle
- Select Features – By Circle
- Select Features – By Polygon
- Select Features – By Line
- Measure Tool – By Dist/Area
- Marker Tool
- Search By Location (Lat/Lon)
- Point to KML
- Transparency Tool
- Refresh

Print/Download ready Maps
- Print Map (pdf/jpg)
- Download Map (jpg/GeoTiff)

Governance Applications

ElectionGIS

Election GIS provides information on the polling areas, polling states...

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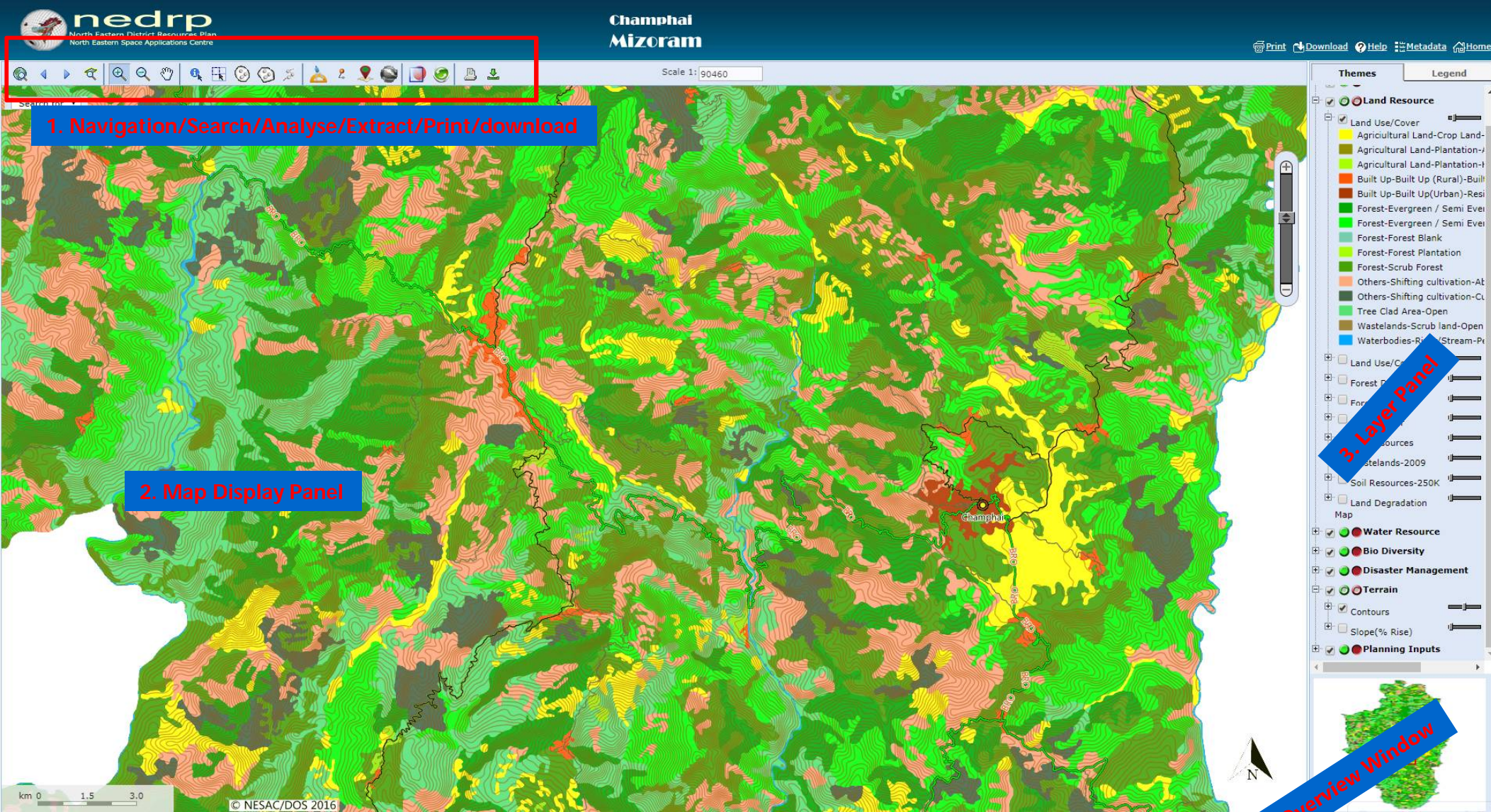A single window information system for the planners, administrators and farmers...

Project Monitoring NEC

Major objective is to
- Monitor the status of the progress of the projects

Dashboard Features
- Project management module
- Monitoring tool
- Filtering across multiple parameters
- Status verification module

Mobile App Features
- Status reporting [on/off line]
- Posting status to the Dashboard
- Data Verification
- Spatial visualization of Projects

Satellite Image   UAVs   Mobile Apps
Data Sources

Data Acquisition

Data Access & Integration

Monitoring

Project Monitoring

Admin Panel

Geo Dashboard

Verification & Validation

EC-MIZ-04   EC-MIZ-04   EC-MIZ-04
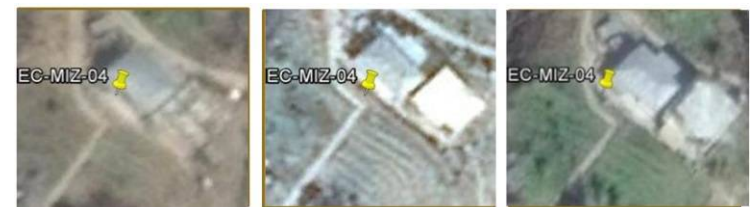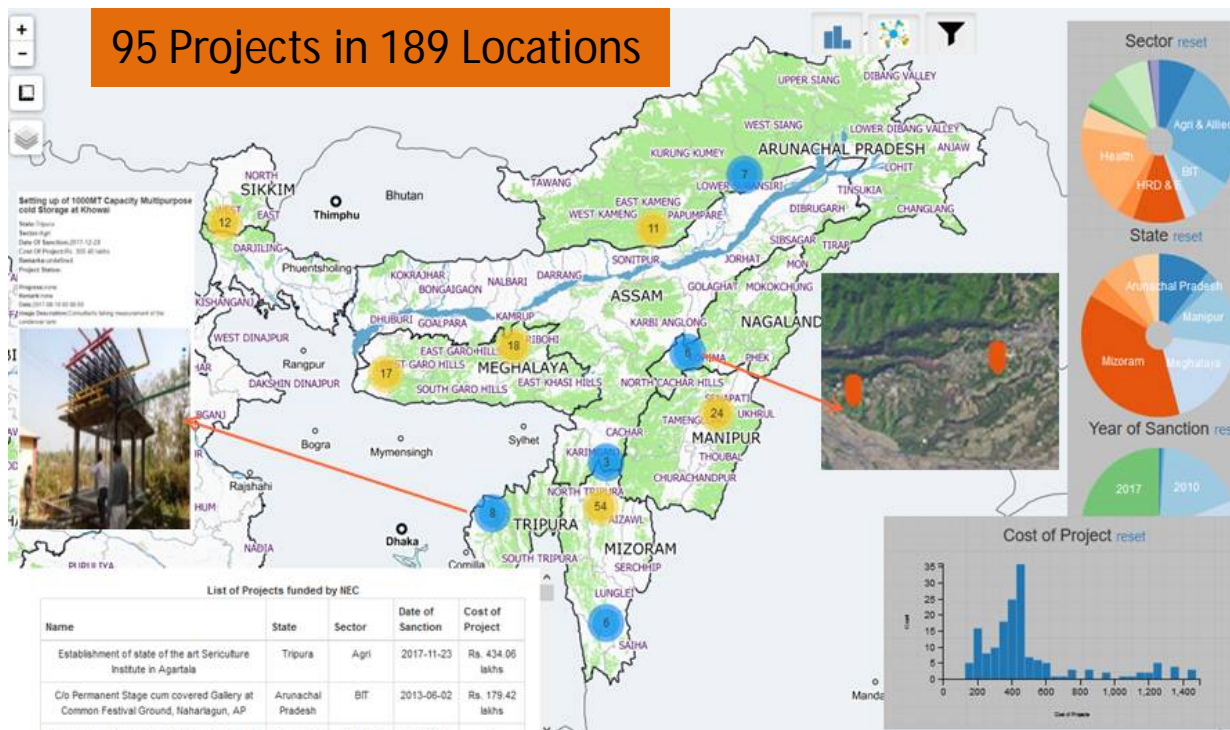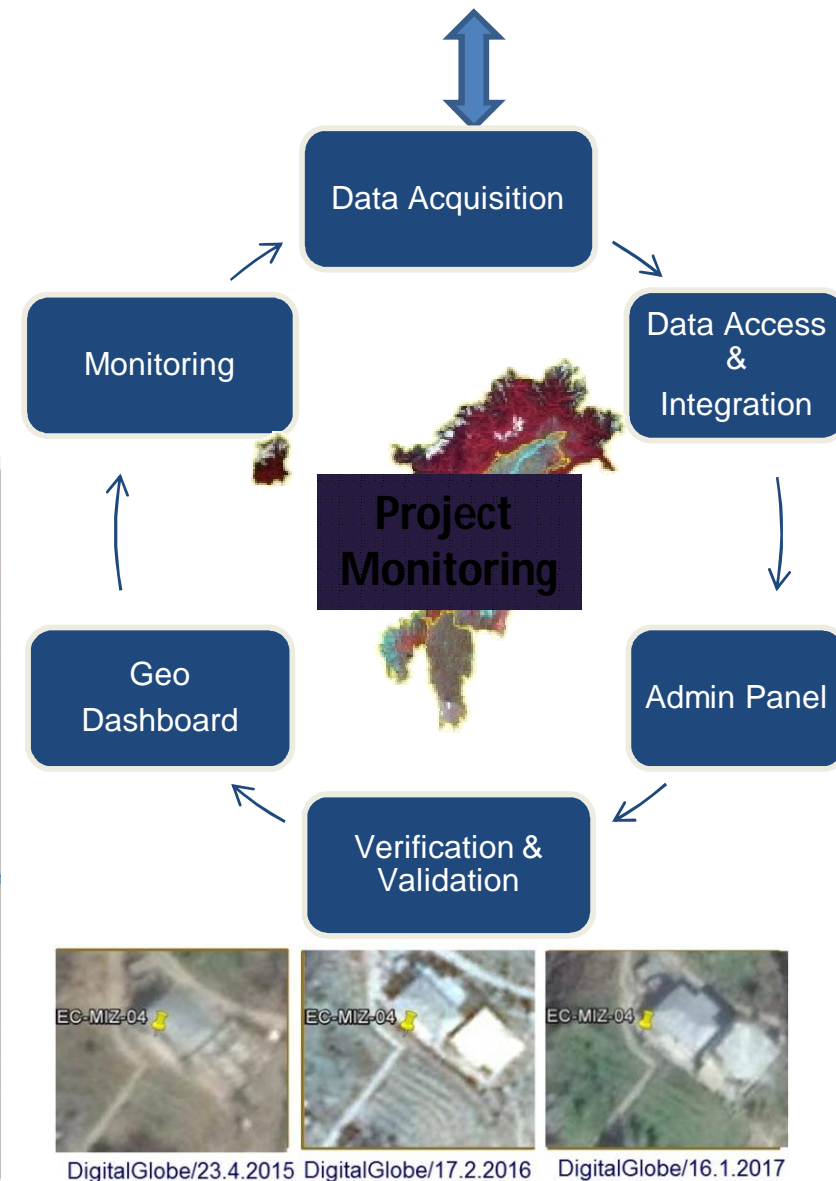
DigitalGlobe/23.4.2015   DigitalGlobe/17.2.2016   DigitalGlobe/16.1.2017

95 Projects in 189 Locations

Sector reset

State reset

Year of Sanction reset

Cost of Project reset

Election e-Atlas for Meghalaya

- **Major goal is to support**
  - Election planning and management
  - Live election monitoring
- **Major Achievements**
  - Live updates provided to DC Ribhoi and DC East Garo Hills of legislative assembly polls 2018.
  - Assisted planning of Meghalaya legislative assembly election 2018.

Features of Dashboard

- Dashboard
- Live Dashboard
- Update Voter Counts - LIVE
- Search Polling Station
- Add Polling Station
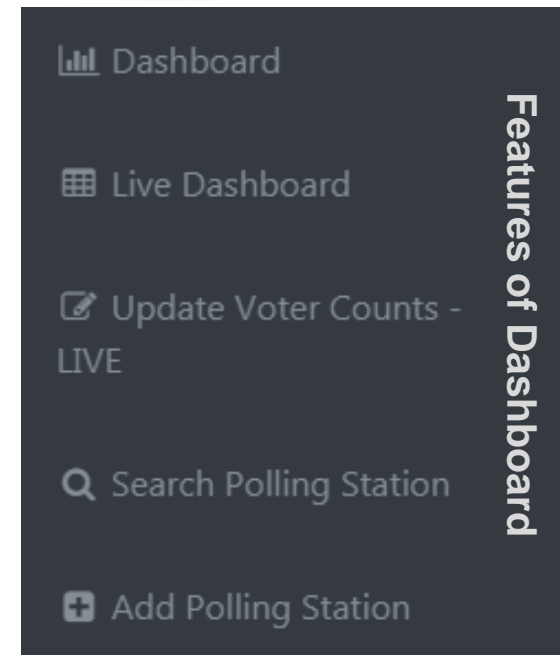
e-ATLAS effectively used by Deputy Commissioner, Ribhoi on 27 February, 2018

Control room setup at DC office

Live updates at DC Office

With Deputy Commissioner

GeoTourism : *tourism.nedrp.gov.in*

Geospatial Inputs for enhancing Tourism in NE Region

Major goal-
- Showcasing important tourist Spots over Indian Satellite imagery
- Exploring new tourist sites

Dashboard contains
- 300+ tourist spots, Infra./Utility information in spatial domain
- Query/Proximity to the relevant

Forest Fire Dashboard: *forest.nedrp.gov.in*

Major goal is to support
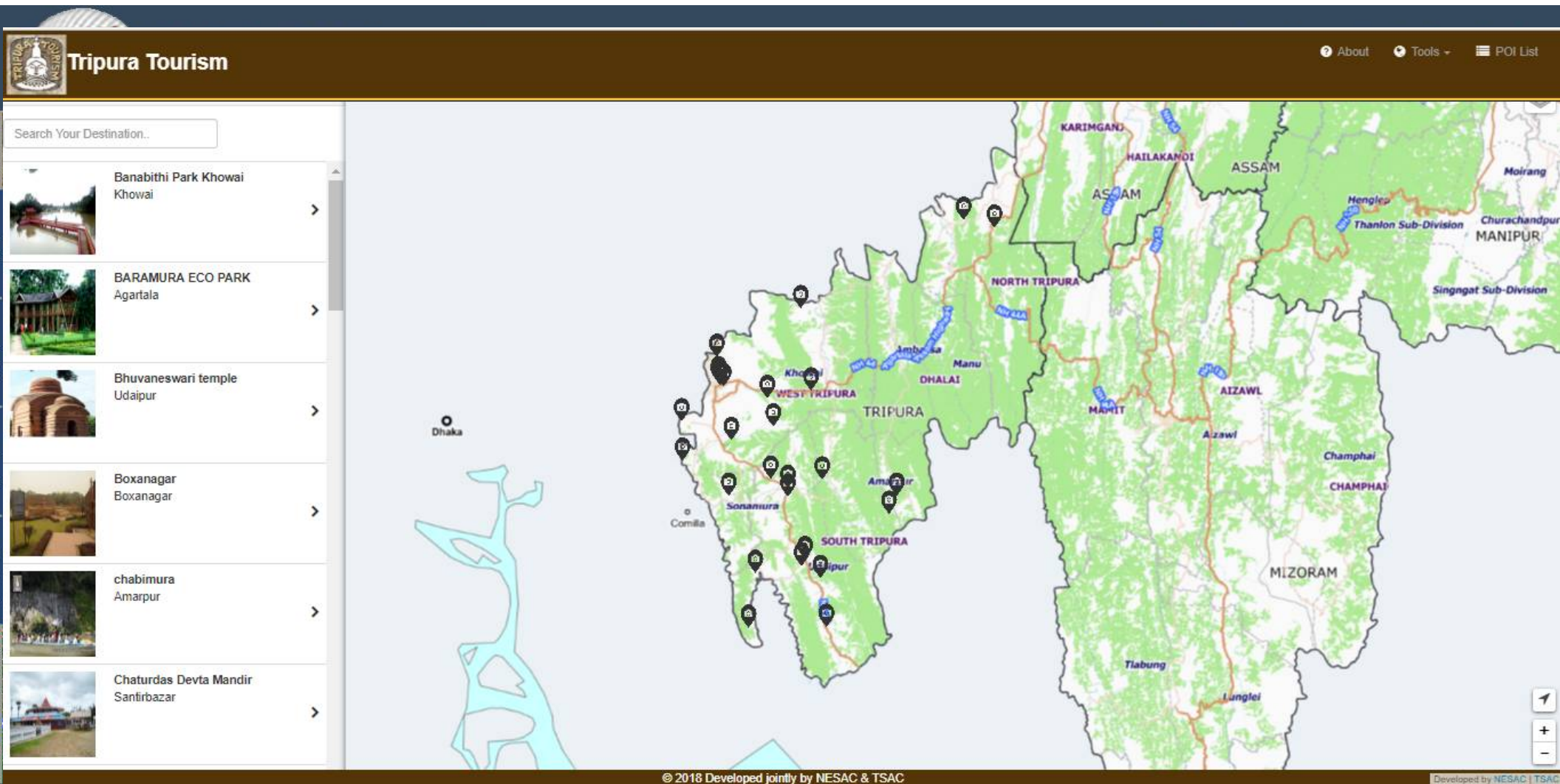
- Visualization of current forest fire incidents (FFI)
- Generating FF severity
- Active FF alerts
- Archival of 40K FFI since 2014
- Integration of meteorological data

Dashboard contains

- 40K Forest fire incidents
- Archival of yearly data (2014-17)
- Bhuvan base map/satellite data
- Cross filtering to represent graphical query

Query to

- Existing land-use pattern
- Meteorological parameters

Proximity to (closest distance)

- Water body
- Roads
- Settlements
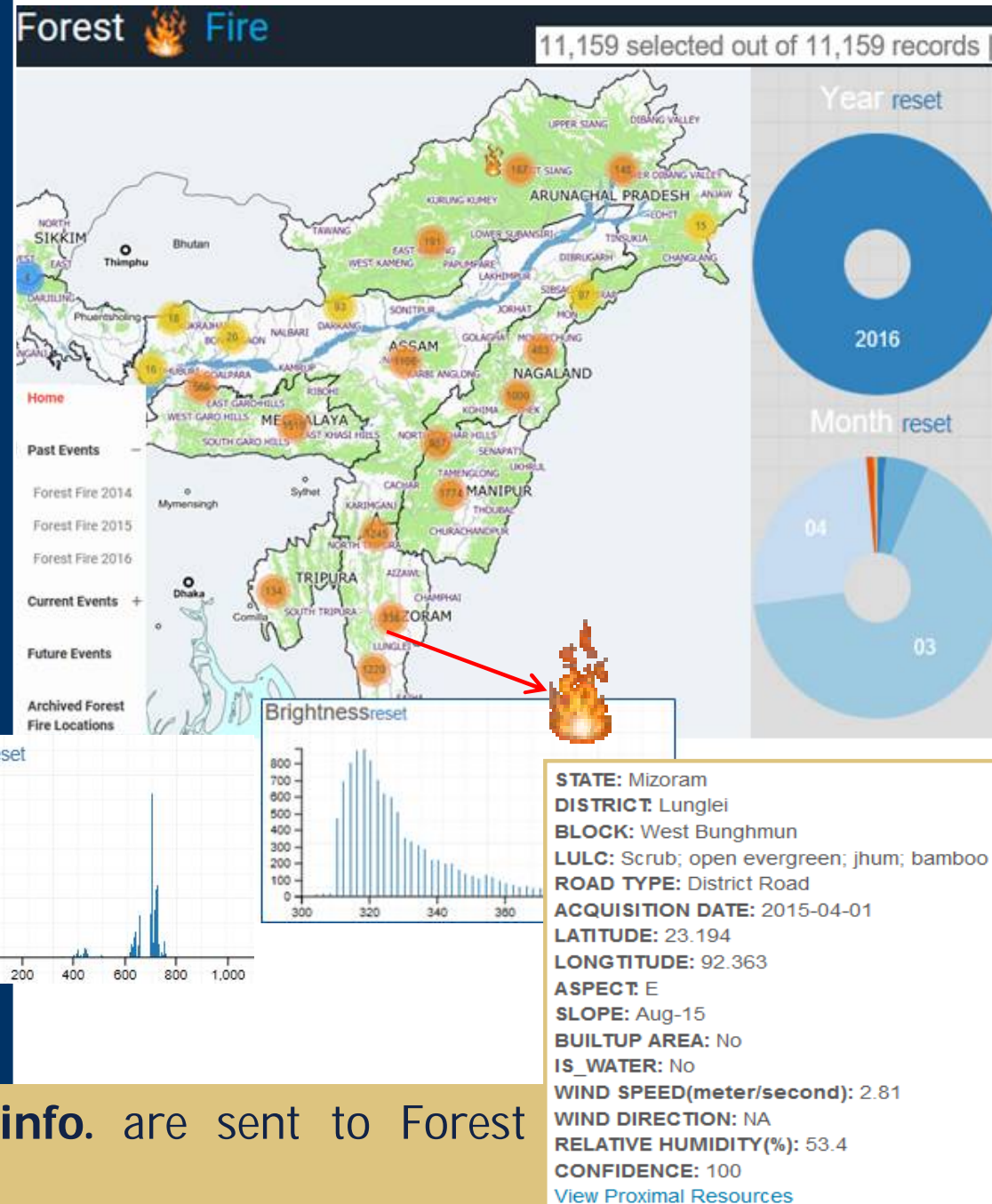
Forest fire alerts with value added info. are sent to Forest Departments on operational basis

Forest 🔥 Fire

11,159 selected out of 11,159 records |

Year reset

2016

Month reset

04

03

Home

Past Events —

Forest Fire 2014

Forest Fire 2015

Forest Fire 2016

Current Events +

Future Events

Archived Forest Fire Locations

Time reset

Brightness reset

STATE: Mizoram
DISTRICT: Lunglei
BLOCK: West Bunghmun
LULC: Scrub; open evergreen; jhum; bamboo
ROAD TYPE: District Road
ACQUISITION DATE: 2015-04-01
LATITUDE: 23.194
LONGTITUDE: 92.363
ASPECT: E
SLOPE: Aug-15
BUILTUP AREA: No
IS_WATER: No
WIND SPEED(meter/second): 2.81
WIND DIRECTION: NA
RELATIVE HUMIDITY(%): 53.4
CONFIDENCE: 100
View Proximal Resources

NEDRP Beta version
36 districts

Mid 2016

NEDRP Full version
40 Standalone inst

March 2017

Governance Dashboard
8 Live Apps
3000+ downloads
Large Nos. of DPRs

Sept 2017

National
e-Governance Awards
2017
45+ Line Deptts

Aug2018

Sept 2015

OGC services in Bhuvan
1620+ WMS

Sept 2016

65 additional Mobile Apps
1200 downloads
25 Trainings

Aug 2017

Monitoring & Planning
NEC/DoNER, CEO
MBDA, Forest, ASDMA
P&C/Assam, etc.

Feb 2018

Launched
by
Shri RaviShankar Prasad, Minister of IT Law and Justice

Overall Achievements & Success

List of Users

State Departments (30+)	Central Departments/Academia (15+)
1. SRSAC, Itanagar, Land Record, Planning, S&T- **Arunachal Pradesh** 2. S&T, Urban Development, Soil & Water Conservation, Irrigation & Flood control, Fishery, SLNA/IWMP, ASDMA, T&D – **Assam** 3. MARSAC, Revenue, R&D/Panchayatiraj – **Manipur** 4. Election, Soil, MBDA/IWMP, DDMA, Forest, Urban Planning, Agriculture, MePGCL etc. – **Meghalaya** 5. MIRSAC, Forest, Planning - **Mizoram** 6. P&C/NRSGISC, Forest, Urban- **Nagaland** 7. PWD/PMGSY, TSAC, PWD (R), - **Tripura** 8. S&T, Forest - **Sikkim**	1. NEC, GOI 2. ICAR, Umiam 3. Brahmaputra Board 4. NEHU 5. RMRC, Assam 6. CDAC, Pune 7. SIB, GOI 8. IITG (Civil) 9. Dibrugarh University 10. Tezpur University 11. Guwahati University etc.

Information/maps released

- **1750+ in standalone**
- **2820+ via www.nedrp.gov.in**
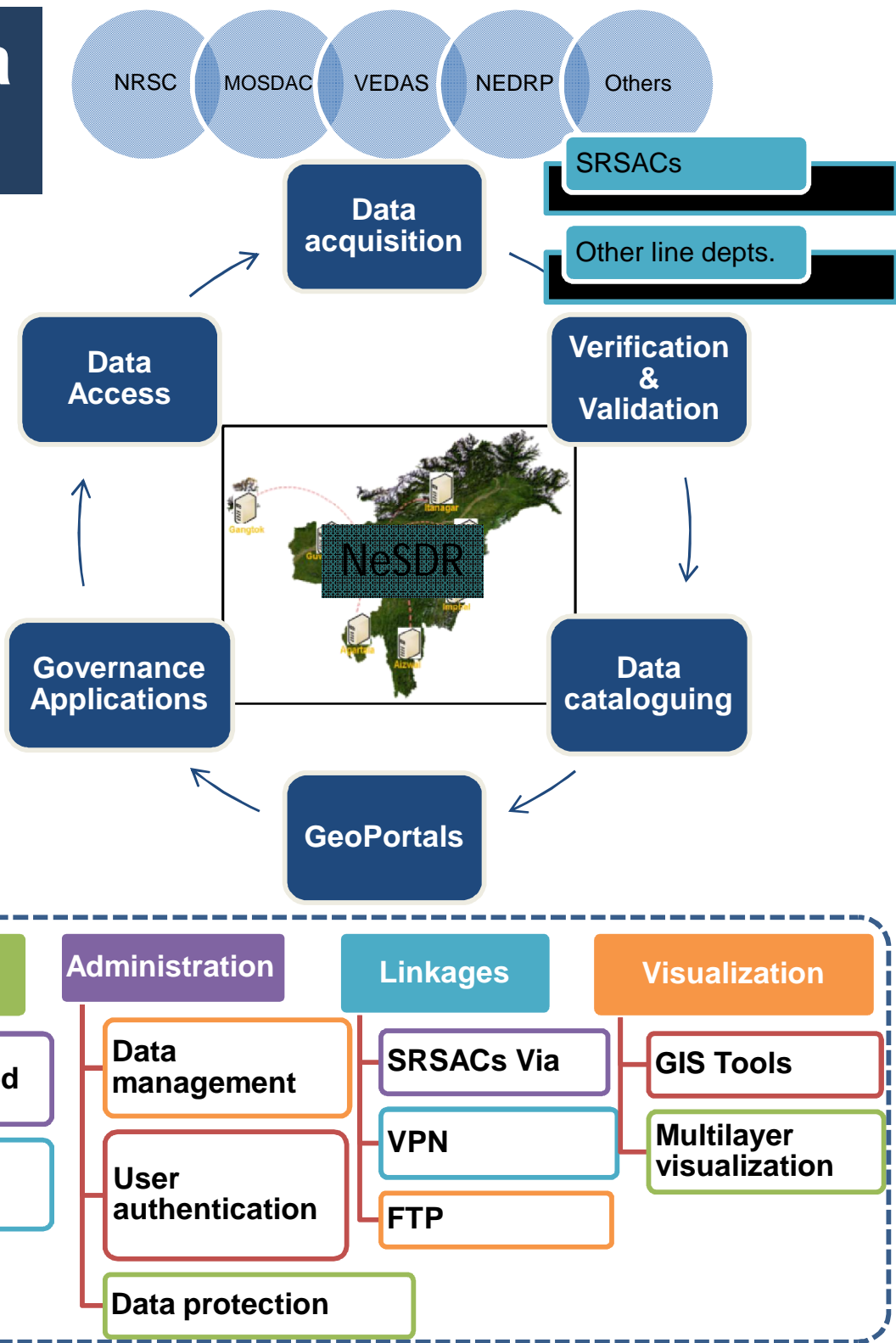- **1280+ Bhuvan portal**

North Eastern Spatial Data Repository(NeSDR)

Objective

- To establish Geospatial Network
- Data Catalogue, processing & refinement
- Development of Hosting platform for geospatial data
- To strengthen the State IT Infra.

Governance Applications

E Atlas

Project Monitoring

Tourism GIS

Crime GIS

Health GIS

Electricity GIS

NRSC | MOSDAC | VEDAS | NEDRP | Others

SRSACs

Other line depts.

Data acquisition

Verification & Validation

Data Access

NeSDR

Data cataloguing

Governance Applications

GeoPortals

Services

Catalog
- Raster
- Vector

Searching
- AOI Based
- Metadata based

Administration
- Data management
- User authentication
- Data protection

Linkages
- SRSACs Via
- VPN
- FTP

Visualization
- GIS Tools
- Multilayer visualization

Sensitization- *for more effective Use of Space Inputs for developmental planning*

Thoubal, Manipur

Serchhip, Mizoram
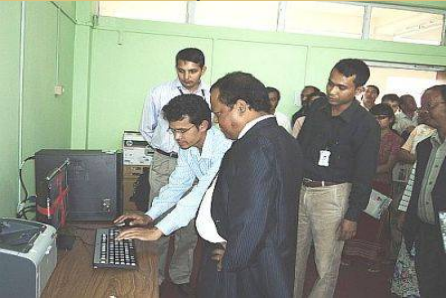
Makokchung, Nagaland

Prototype demonstrated to Late APJ Abdul Kalam

At ISPRS TC VIII Int. Symposium at Hyderabad

West Khasi, Meghalaya

Release of NEDRP

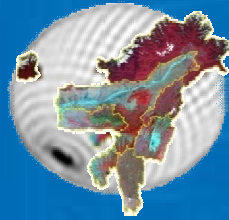Demonstrated to Governor, Meghgalaya

Presented to Hon'ble Union Minister, Dr Harsh Vardhan

DC Office Mizoram

Regional/State level Workshops : 4 | **District level Workshops/hands-on: 21**

Thank You

http://nedrp. gov.in