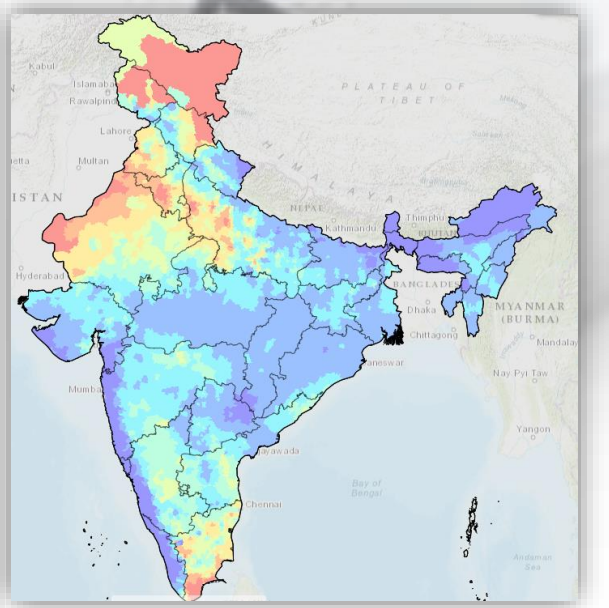
सत्यमेव जयते

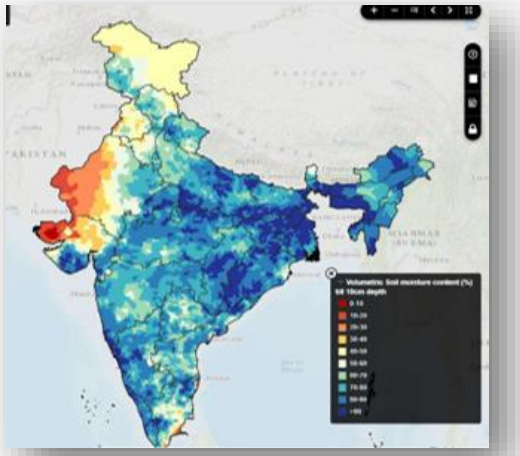
India – WRIS
India
Water
Resources
Information
System



India – WRIS : India Water Resources Information

CONCEPTUALIZATION

A 'Single Window Solution'
for comprehensive, authoritative and consistent data & information of India's water resources in a standardized national GIS framework for planning, development and management of water resources in the country.



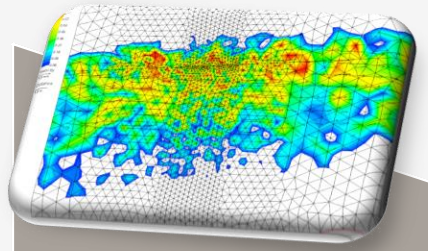
*Empowering citizens with **accurate, adequate and contemporary information** on the state of water resources of the country and enlightened public involvement in **water management decisions**.*

OBJECTIVE

To collect available data from varied sources, generate new database , organize in standardized GIS format and provide scalable web-enabled information system.

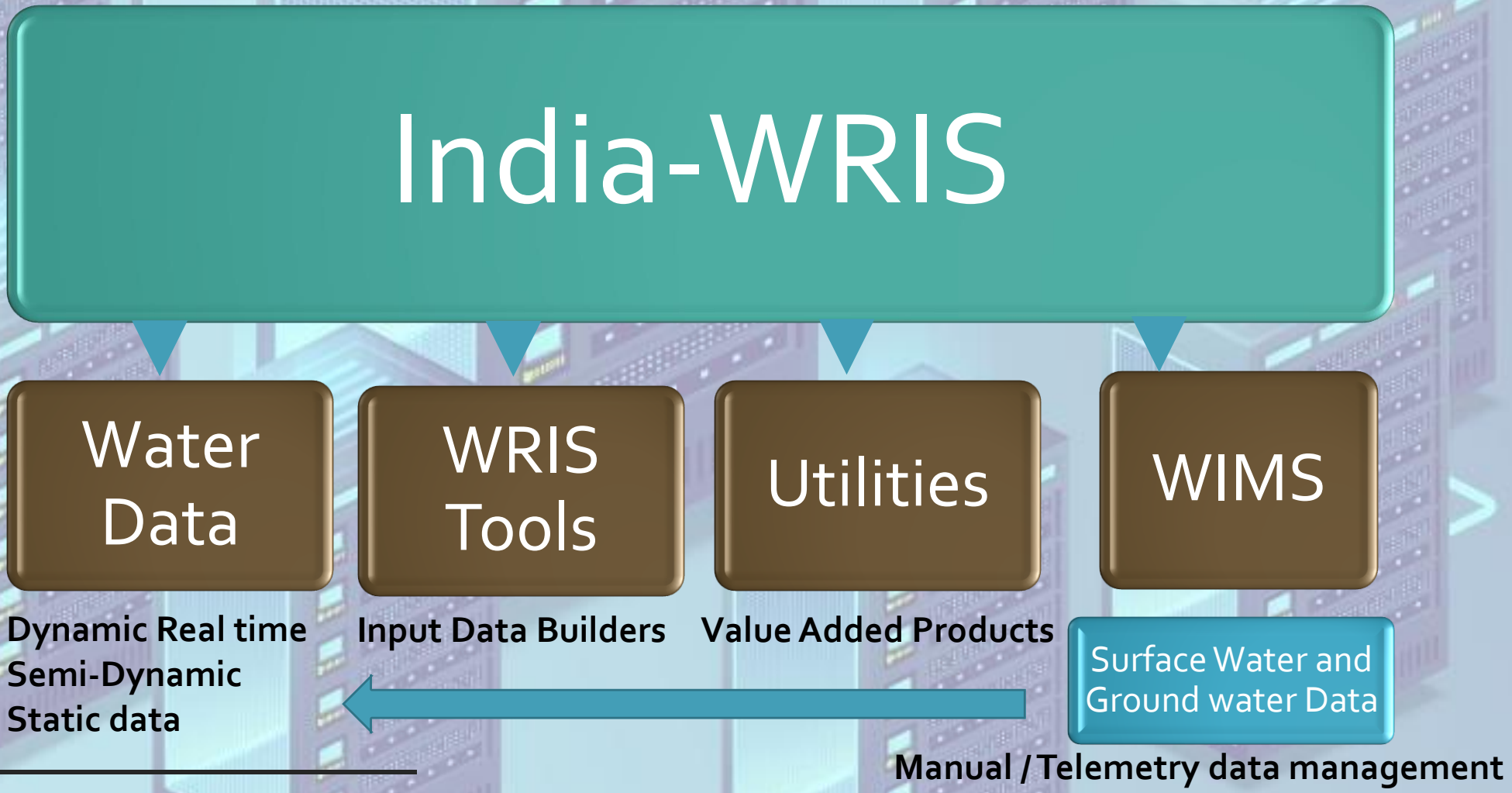
To provide tools to create value added maps by way of multi-layer stacking of GIS database so as to provide integrated view to the water resources scenarios.

To provide easier, faster access, sharing of nationally consistent and authentic water resources data through a centralized database and application server to all water resources departments / organizations.



To provide foundation for advanced modeling and Spatial Decision Support Systems (SDSS) including automated data collection system.

SYSTEM OVERVIEW

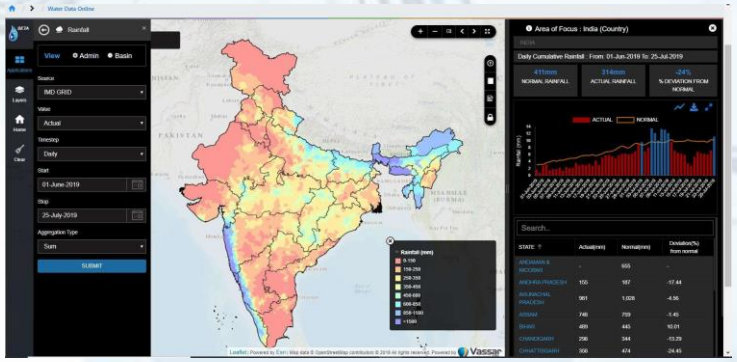


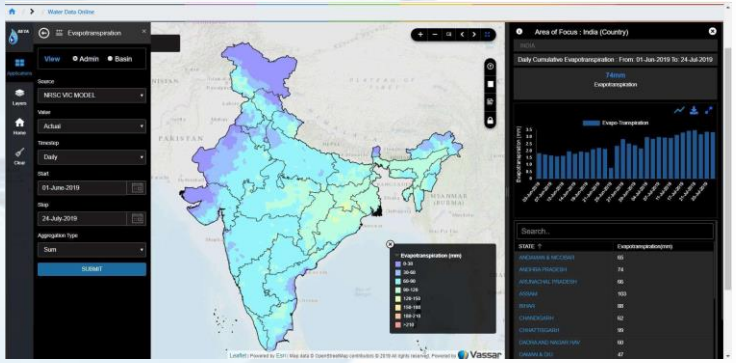
India – Water Resources Information System

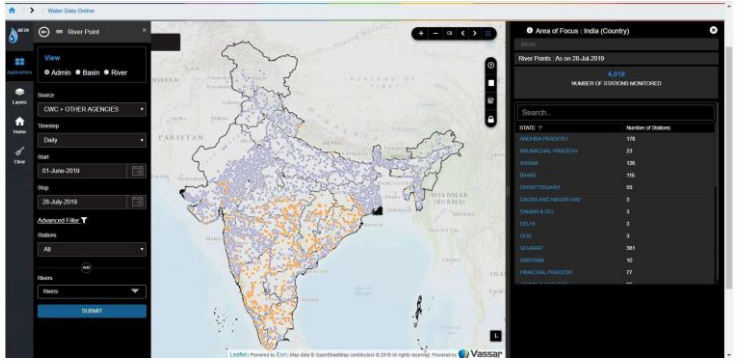
India-WRIS

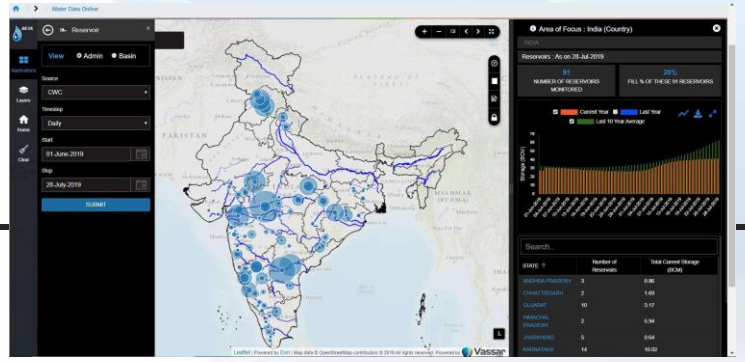
Water Data – Dynamic Data Modules

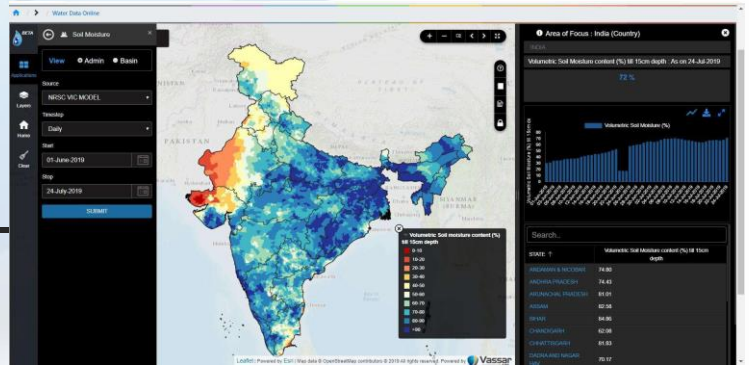
- Historical and real-time data of Rainfall, Reservoir, River Point, Evapo-transpiration, Soil Moisture, surface water quality, Ground water and Groundwater quality.
- Powerful visualizations like heat maps, tables, charts to view and analyze the data at different administrative and hydrological hierarchies

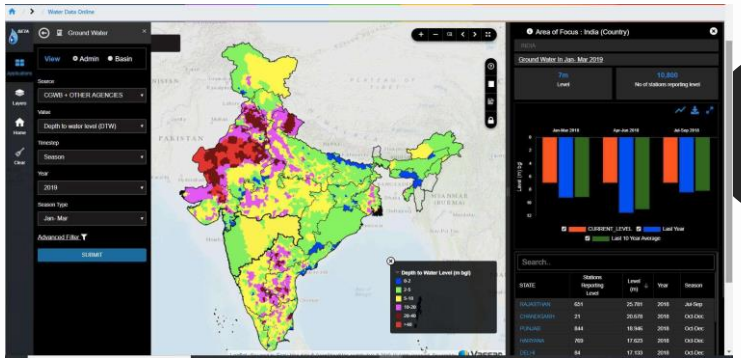










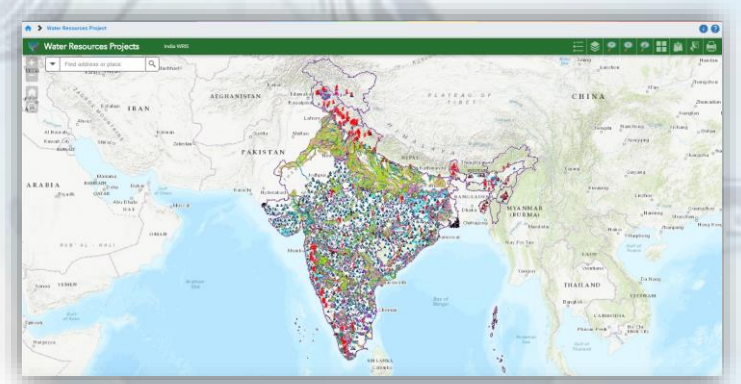


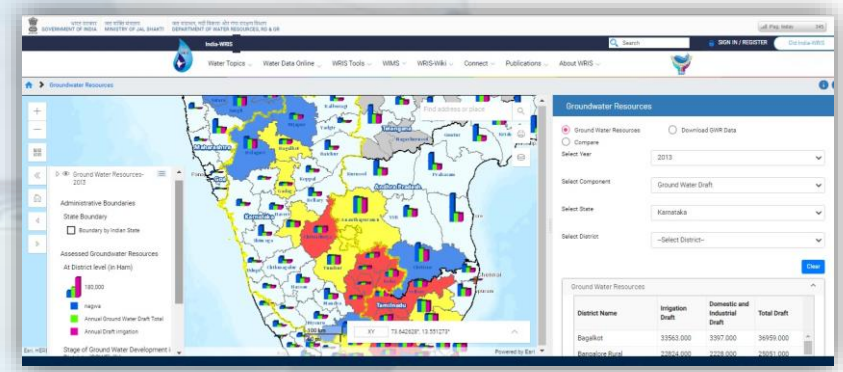
India – Water Resources Information System

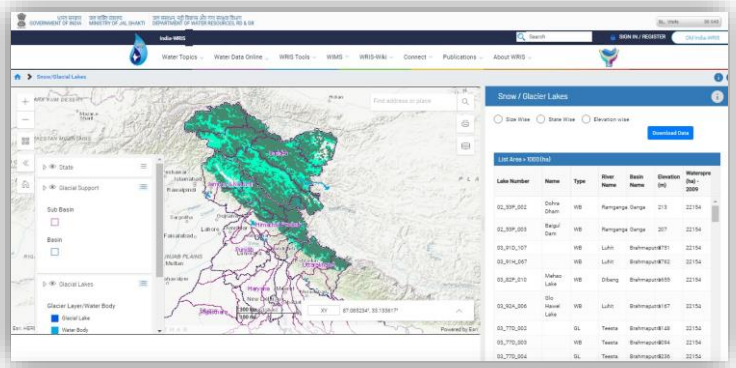
India-WRIS

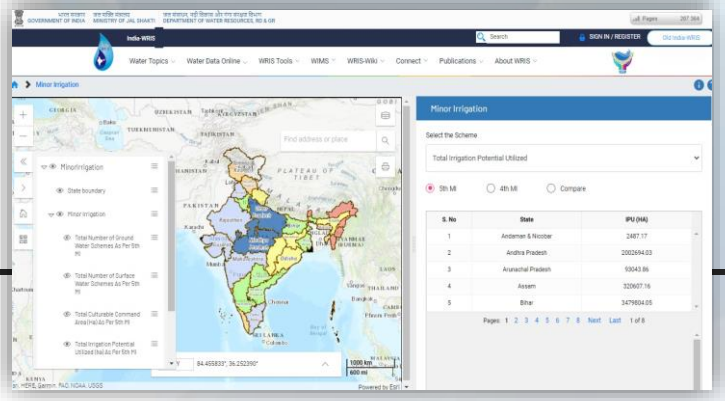
Water Data – Semidynamic & Static Modules

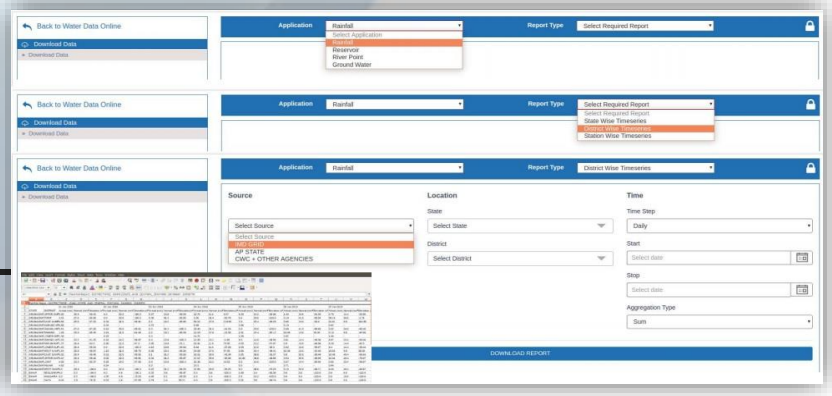
- **Semi-dynamic / static data of Ground Water Resources, MI Census, Litholog, Snow-Glacial lakes, Water Resources Projects etc.**

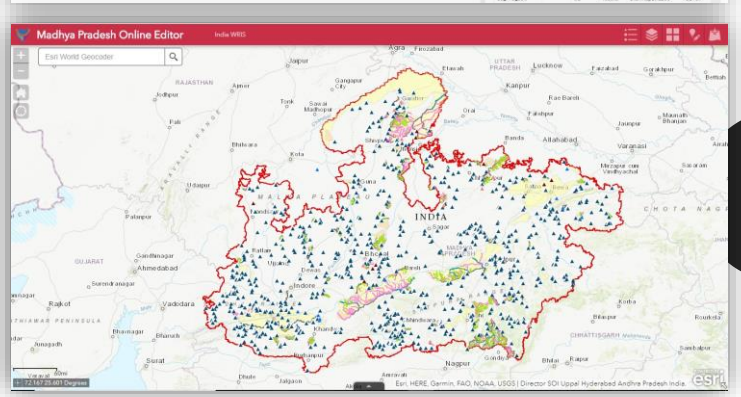




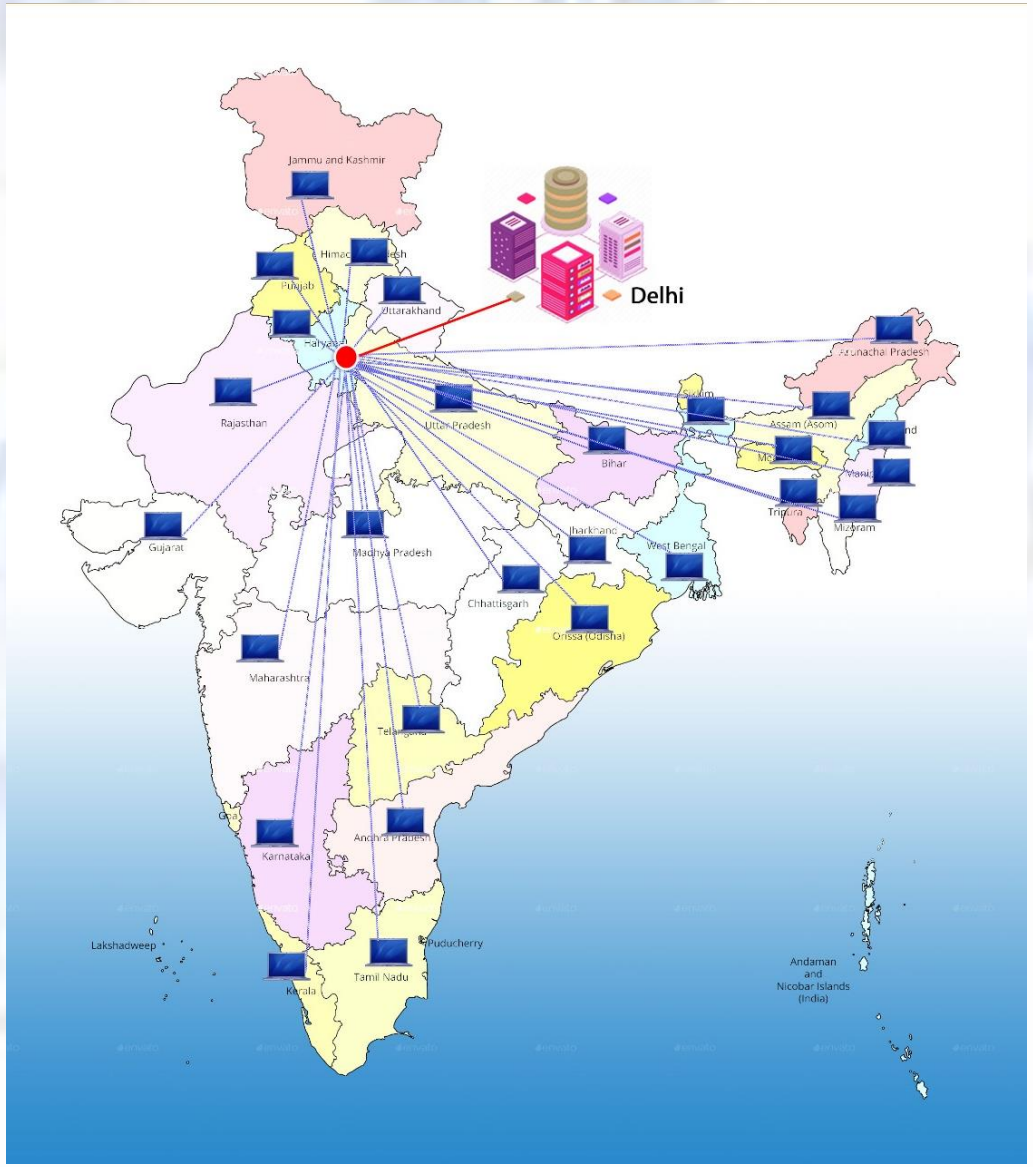








DATA AGENCIES



Data Available in WRIS

Central Ground Water Board

- Ground water observation well location and GW level
- Ground water quality sites and data
- Litholog well location and survey data
- Ground water resource estimation
- Aquifer systems
- Basin-CGWB

Central Water Commission

- Hydrological Observation Stations
- Surface Water Quality Stations
- Reservoir level and storage
- Glacial Lake and Water Body
- Rainfall
- WRP projects
- Reservoir sedimentation studies
- Shape files AIBP Canal , Command Area, Hydro Structure
- PMP atlas-major basins

National Remote Sensing Centre

- ET and Soil moisture
- Flood inundation maps.
- LULC, Wasteland, Land degradation, wetland cover
- Waterlogged Area and Saline areas
- Rainfall gridded data
- Ground water prospects maps
- Forest Cover – Classes
- Water Body Information System : Bhuvan – APIs and waterbody layer

Survey of India

- Shape files of International Boundary
- State Boundary
- District Boundary
- Village Boundary
- Infrastructure Layers
- WFS for many thematic layers
- DEM

Data Available in WRIS

National Water Development Authority

- Shape files
- IBTL Component
- Structure on Links (Dams, Barrages, Weirs, Anicuts)
- Detailed Links (canal, Tunnel, etc.)

Indian Meteorological Department

- Gridded Rainfall Data 0.25*0.25
- Seismic zones
- Extreme Temp and RF
- District-wise Rainfall Monitoring Station Location (DRMS)
- Earthquake events

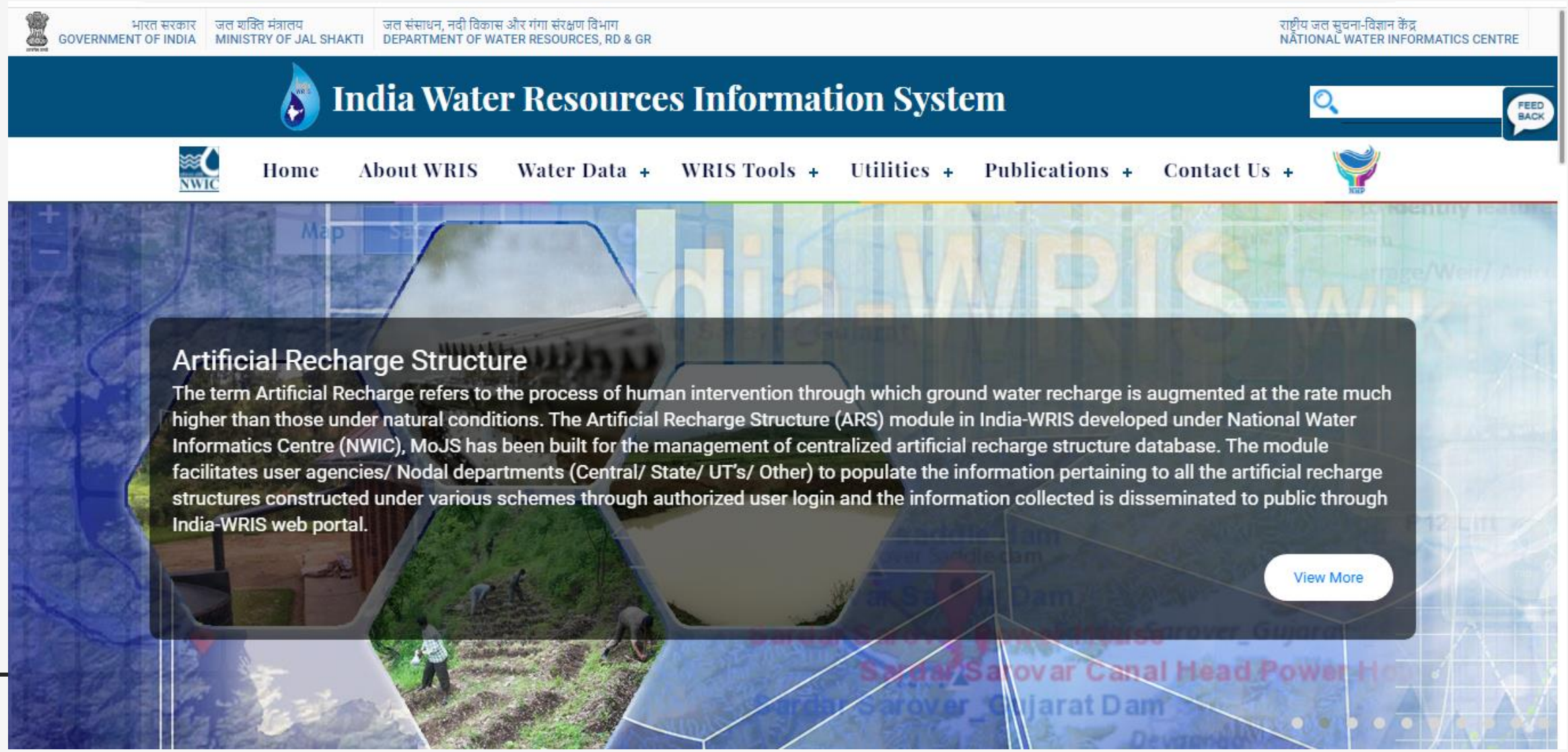
Inland Waterways Authority of India

- Reports on
  - Beacon
  - Harbour Limit
  - Navigation Canal
  - Rail Road Bridge
- River(Inland Navigation)
- Settlement Location
- Waterways

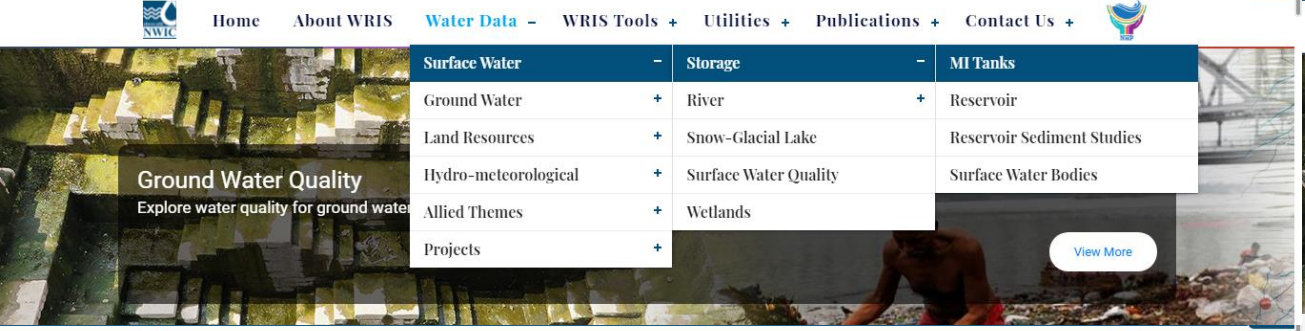
Other agencies

- NHP implementing state and central agencies data (RF, water quality, Reservoir level, etc)
- MI Census Data
- Minor irrigation tank storage and capacity data
- 2011 census data (upto village level)
- Parliament and assembly constituency boundary
- Soil data (NBSS-LUP)
- DPAP and DDP (MoRD)
- Reports related to WR collected from State WRD and local state agencies

https://indiawris.gov.in/wris/#/



INDIA-WRIS MODULES : A WALK THROUGH
34 MODULES, TOOLS (2) & UTILITIES (8)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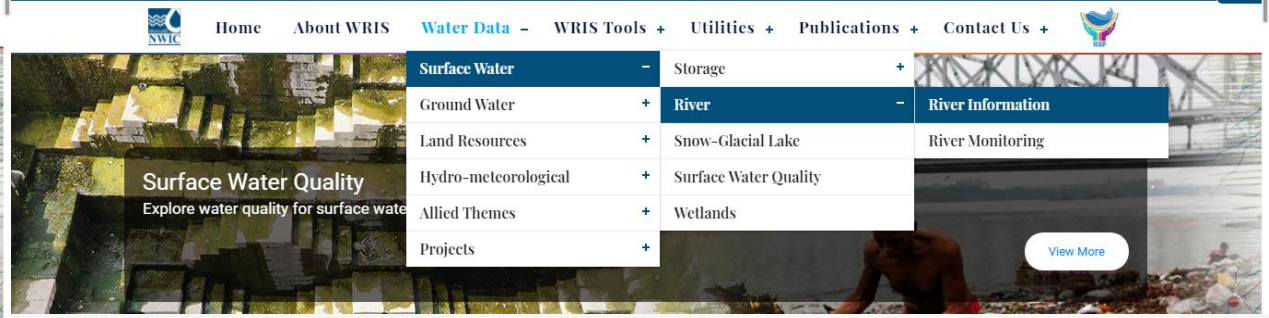
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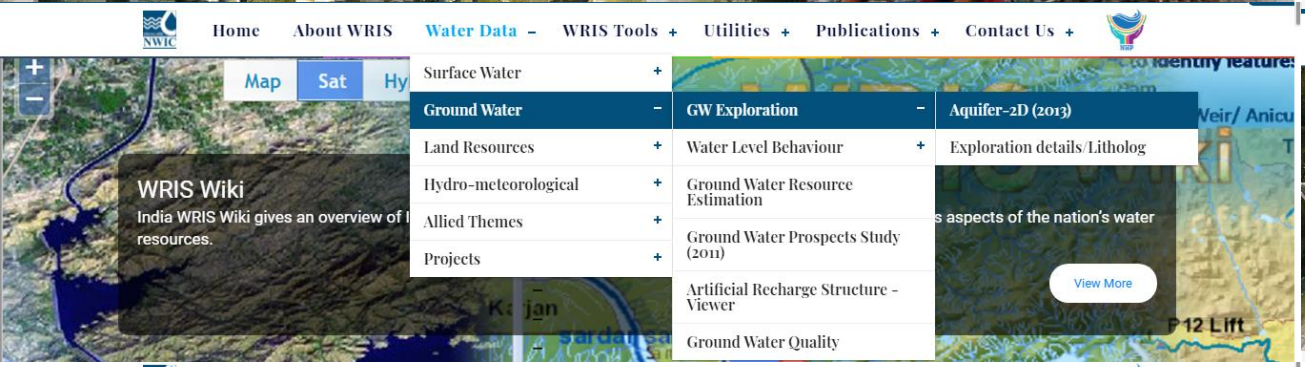
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WRIS Wiki
India WRIS Wiki gives an overview of
resources.
s aspects of the nation's water
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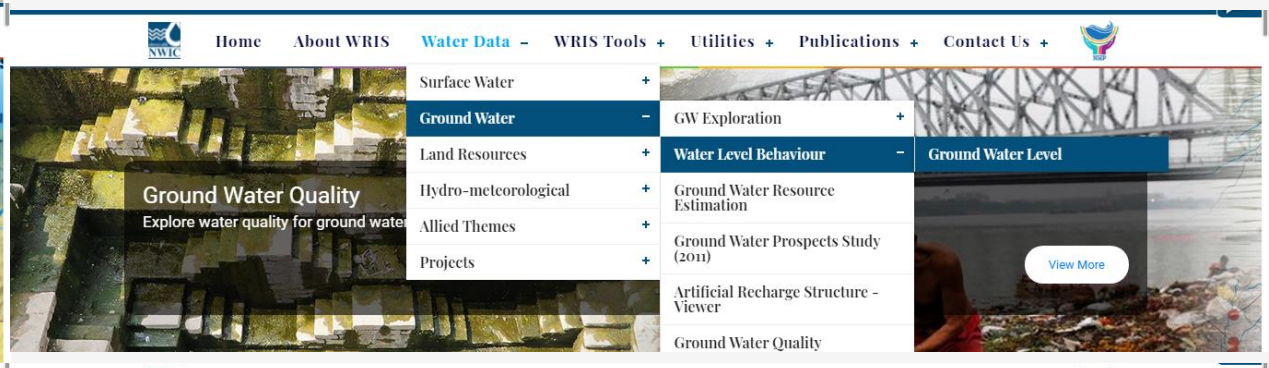
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Ground Water Quality
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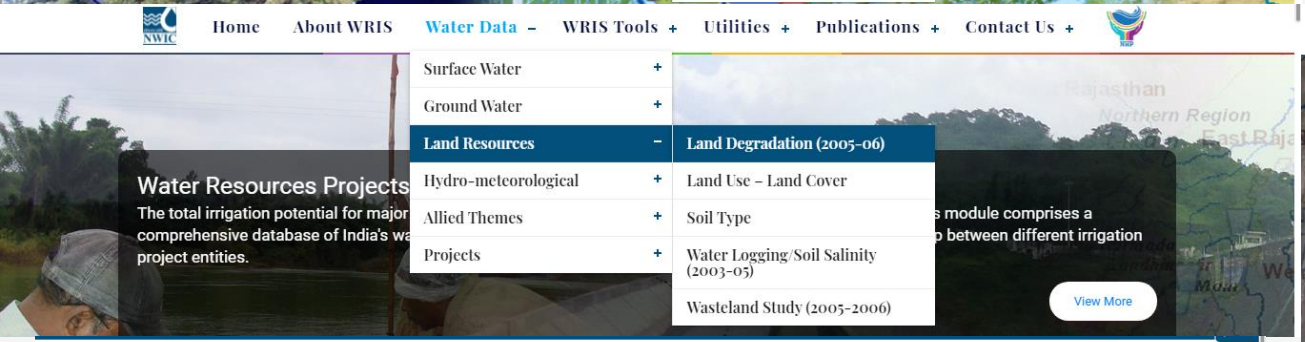
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Wasteland Study (2005-2006)
Water Resources Projects
The total irrigation potential for major
comprehensive database of India's wa
project entities.
s module comprises a
between different irrigation
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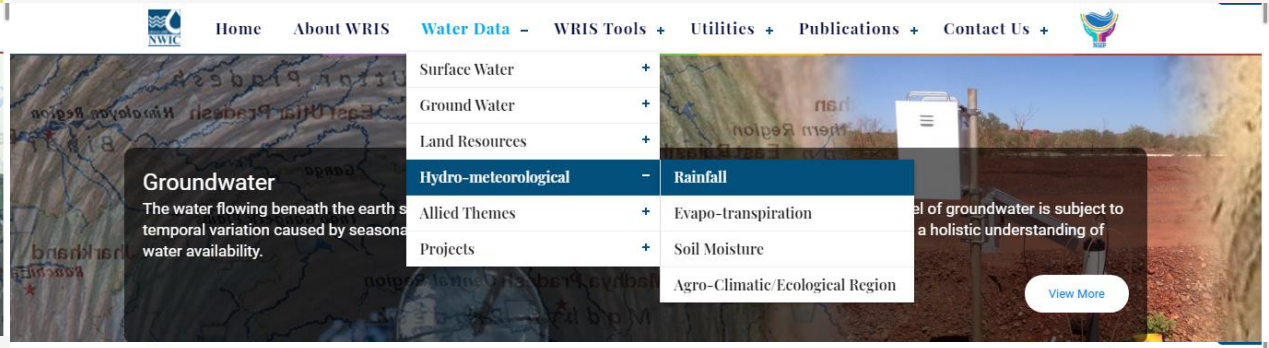
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The water flowing beneath the earth s
temporal variation caused by seasona
water availability.
el of groundwater is subject to
a holistic understanding of
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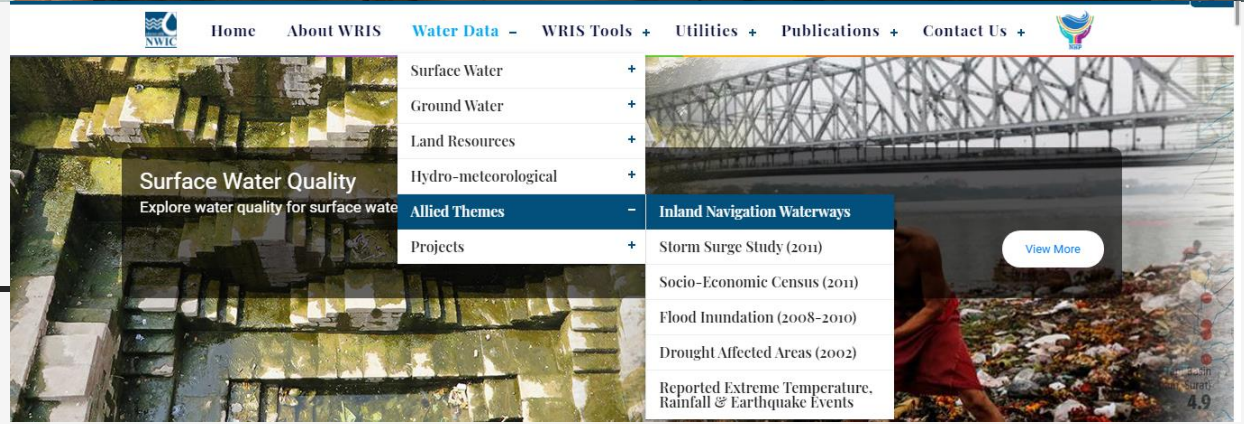
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Drought Affected Areas (2002)
Reported Extreme Temperature, Rainfall & Earthquake Events
Surface Water Quality
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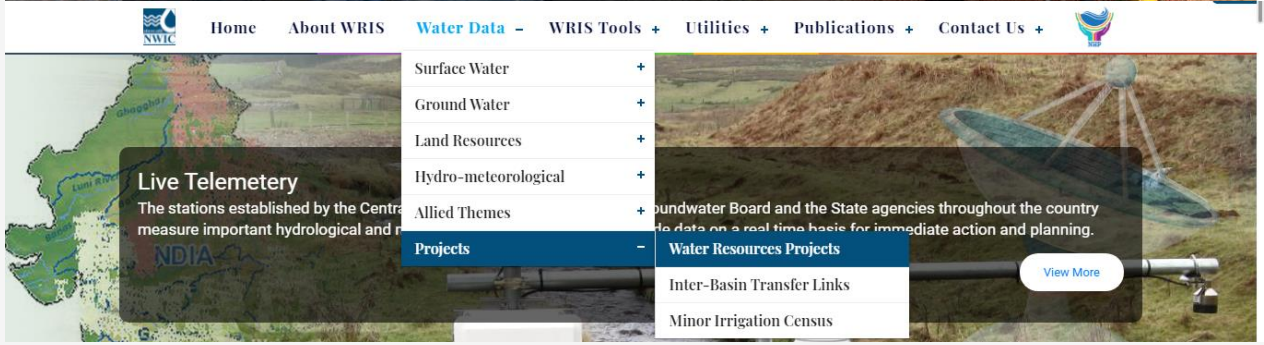
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Live Telemetery
The stations established by the Centra
measure important hydrological and
oundwater Board and the State agencies throughout the country
de data on a real time basis for immediate action and planning.
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Reservoir Information
Currently more than ninety major reservoirs which account for 75% of the total storage capacity are monitored by the Central Water Commission. Knowing the existing water level and the stored volume is important for reservoir operation and achieving optimum flood protection and irrigation benefits.
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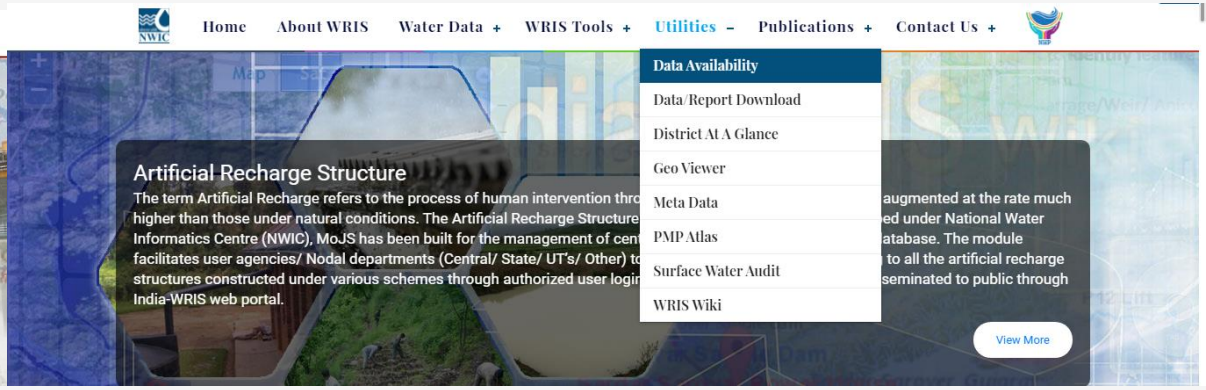
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Artificial Recharge Structure
The term Artificial Recharge refers to the process of human intervention thro
higher than those under natural conditions. The Artificial Recharge Structure
Informatics Centre (NWIC), MoJS has been built for the management of cent
facilitates user agencies/ Nodal departments (Central/ State/ UT's/ Other) to
structures constructed under various schemes through authorized user logir
India-WRIS web portal.
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seminated to public through
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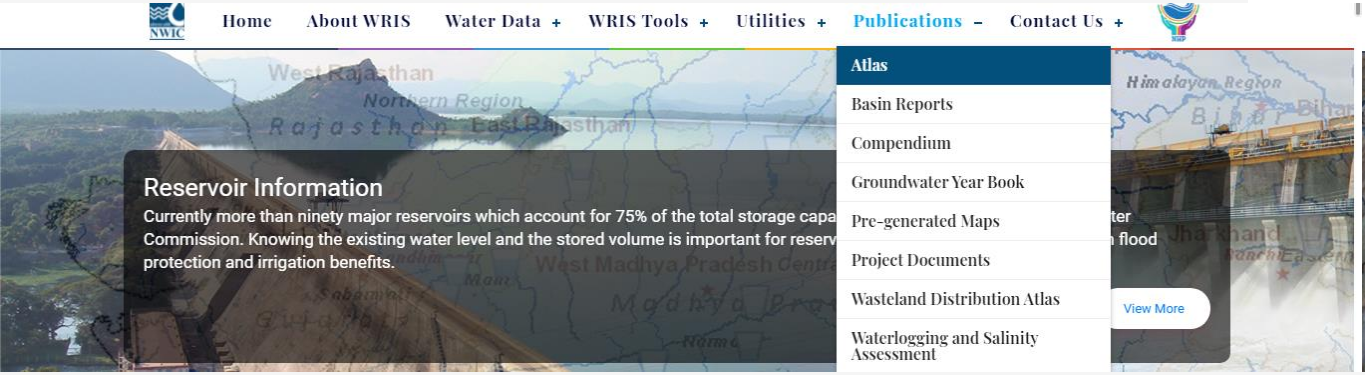
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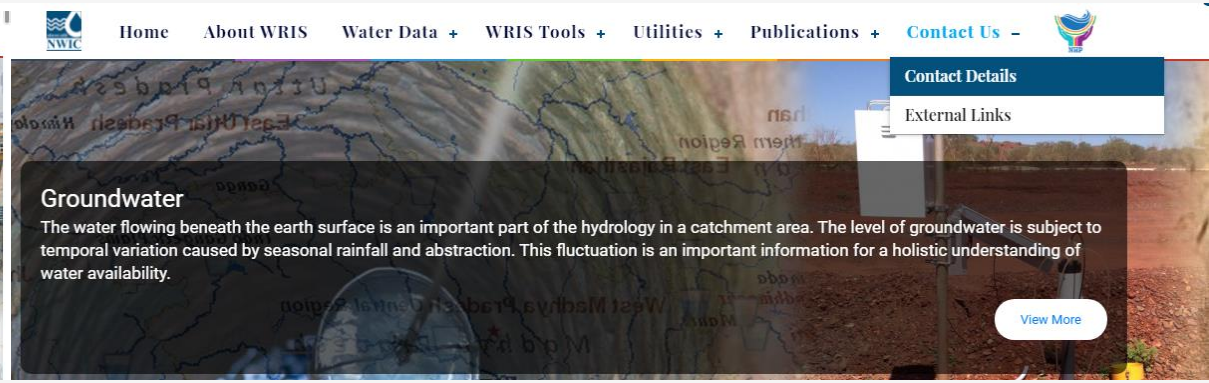
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Groundwater
The water flowing beneath the earth surface is an important part of the hydrology in a catchment area. The level of groundwater is subject to temporal variation caused by seasonal rainfall and abstraction. This fluctuation is an important information for a holistic understanding of water availability.
View More

CLASSIFICATION OF MODULES

CLASSIFICATION OF MODULES

Dynamic Modules

- Rainfall (mm)
- Reservoir (Level)
- River Monitoring (Level & Discharge)
- Ground Water Level (BGL Meter)
- Water Quality – Groundwater
- Water Quality – Surface water
- Evapotranspiration (mm)
- Soil Moisture (%)
- Minor Irrigation Tanks

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Semi Dynamic Modules

- Groundwater Resources
- Snow-Glacial Lake
- Reservoir- Sedimentation studies
- Water Resources Project
- Minor Irrigation Census
- LULC
- Wasteland
- Land Degradation
- Extreme Events – Flood Inundation/Drought Prone Area Program/Earthquake-Rainfall-Temperature
- Artificial Recharge Structure Viewer

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Static Modules

- Litholog
- Aquifer
- Surface Water Bodies
- River Information
- Socio Economic Census
- Groundwater Prospects
- Region-Agro-Climatic / Agro Ecological
- Soil
- Water Logging & Soil Salinity
- Wet Land
- Inland Navigation Waterways
- Inter-Basin Transfer Links
- Storm Surge Study

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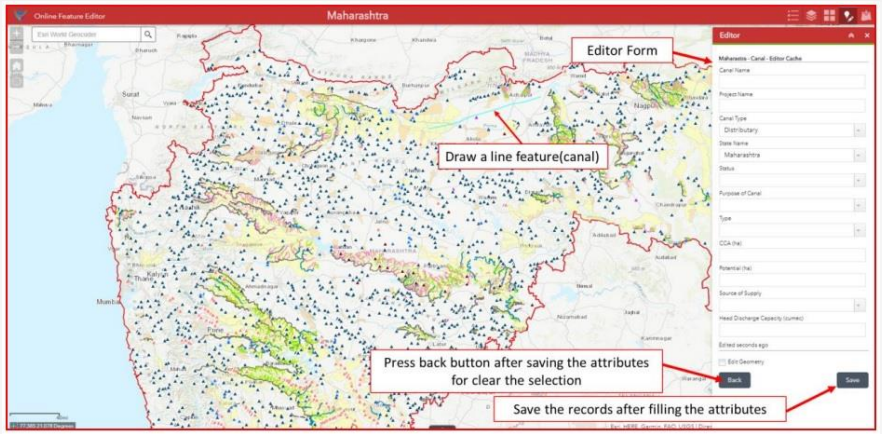
Tools + Utilities

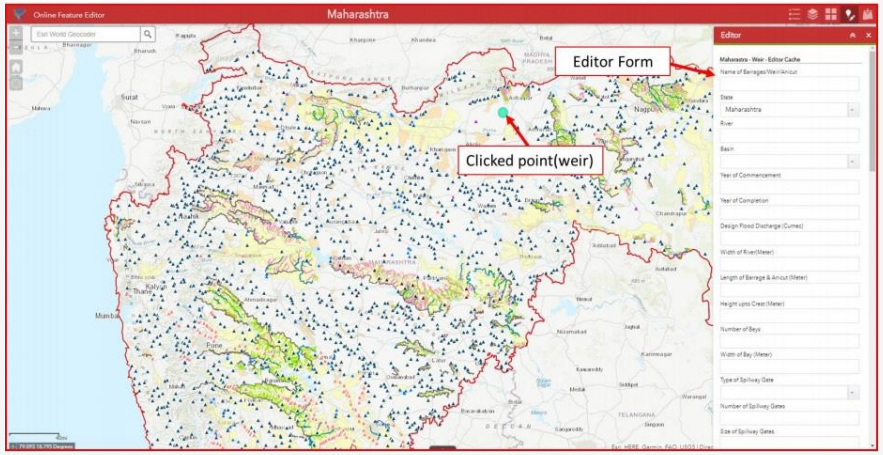
- Online Web Editor
- Artificial Recharge Structure Data Entry
- Data / Report Download Tabular)
- Data Availability
- Geo Viewer
- WRIS WIKI
- Metadata
- District at a glance
- Probable Maximum Precipitation Atlas
- Surface Water Audit

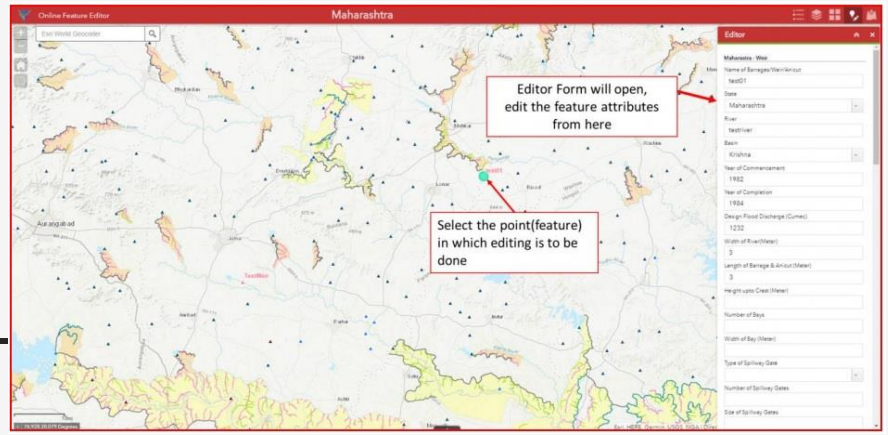
Tools

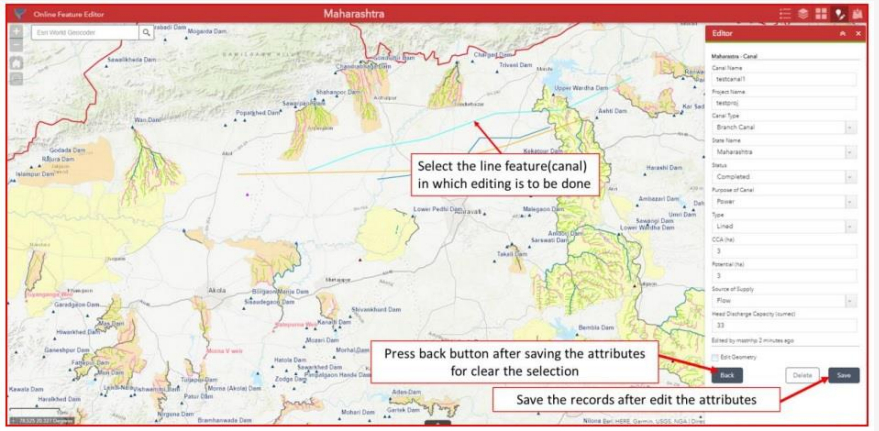
A. Online Web Editor

- To provide a platform for the state agencies to upload the water resources information
- Add/edit/delete the features and attributes online for six themes namely, dam, barrage, weir, anicut, lift and canal for further dissemination at India-WRIS platform.
- State users can update Irrigation Projects with authorized access.



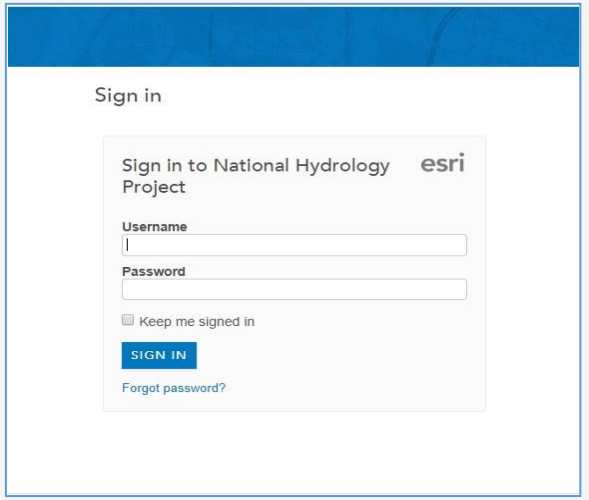


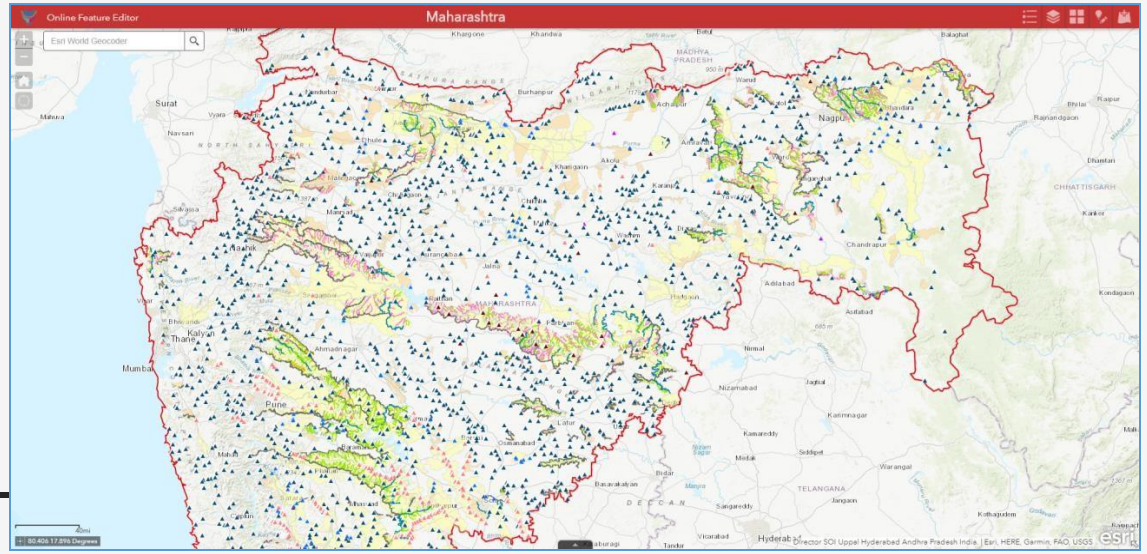


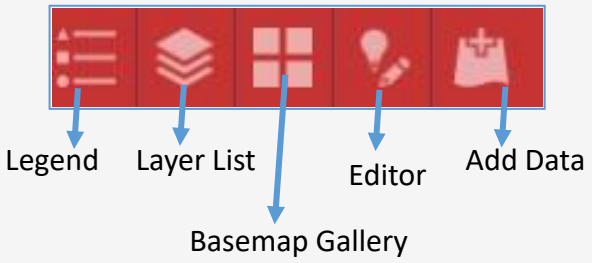


Online Web Editor

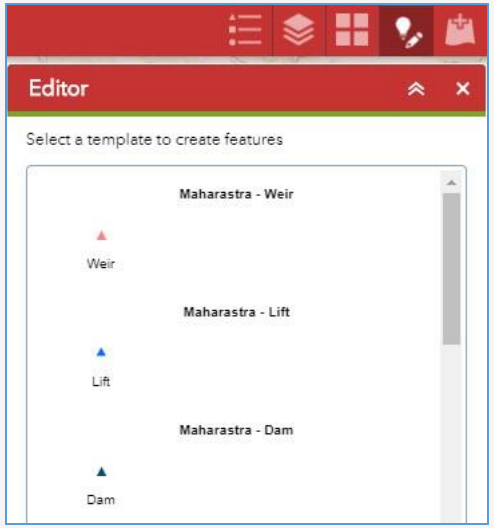
- Each individual state agency user will use a valid username and password for login to the system.
- Sign in to navigate to the online feature editor's main page.
- Map viewer is zoomed to the state extent and different features for the state are visible.





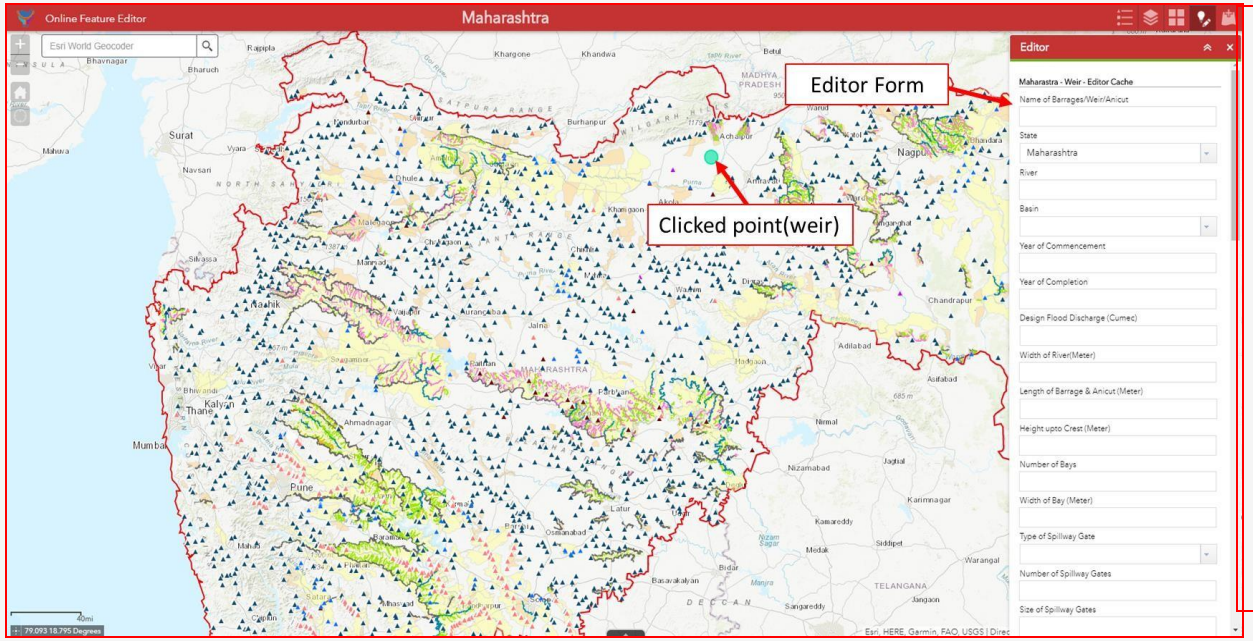


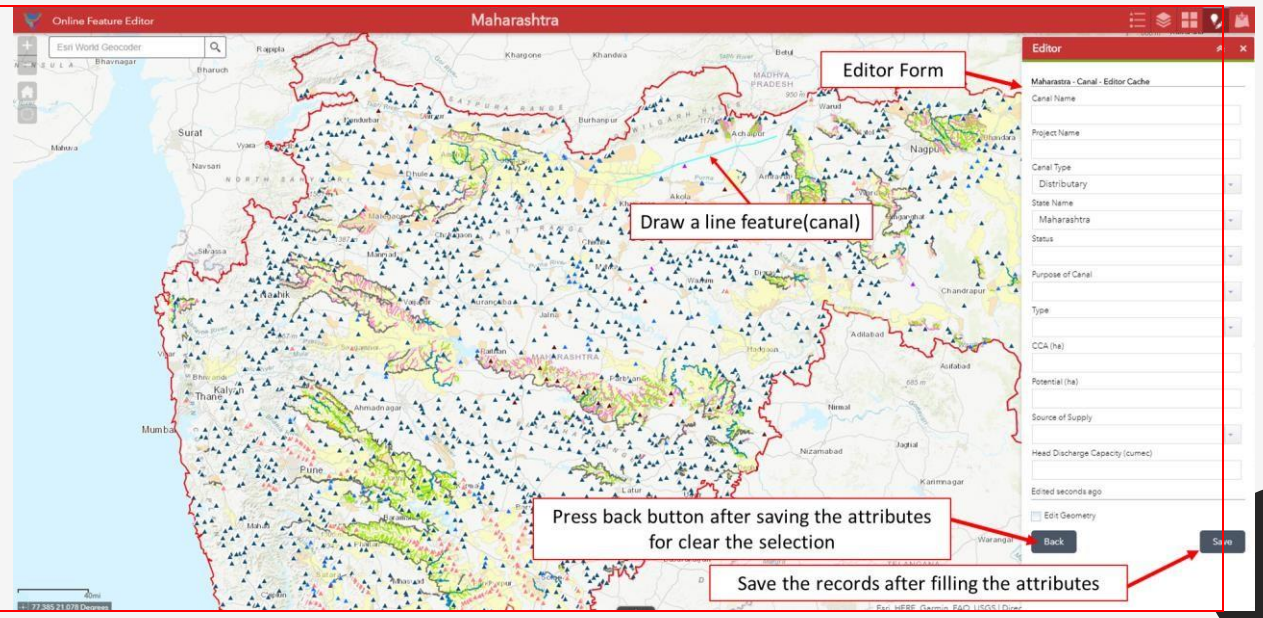
Online Web Editor



Add Feature

- This is the main editing tool to add / edit / delete a new / existing (add by the same user) feature in the different themes like Weir, Lift, Dam etc.
- Editor Form - Attributes

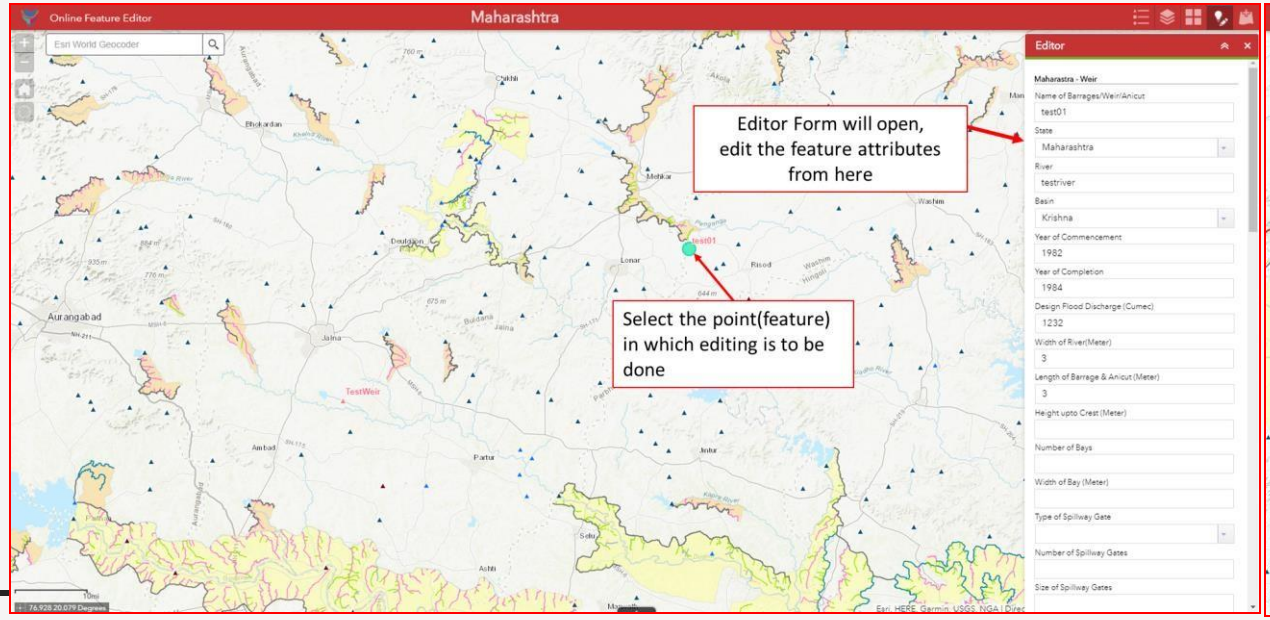


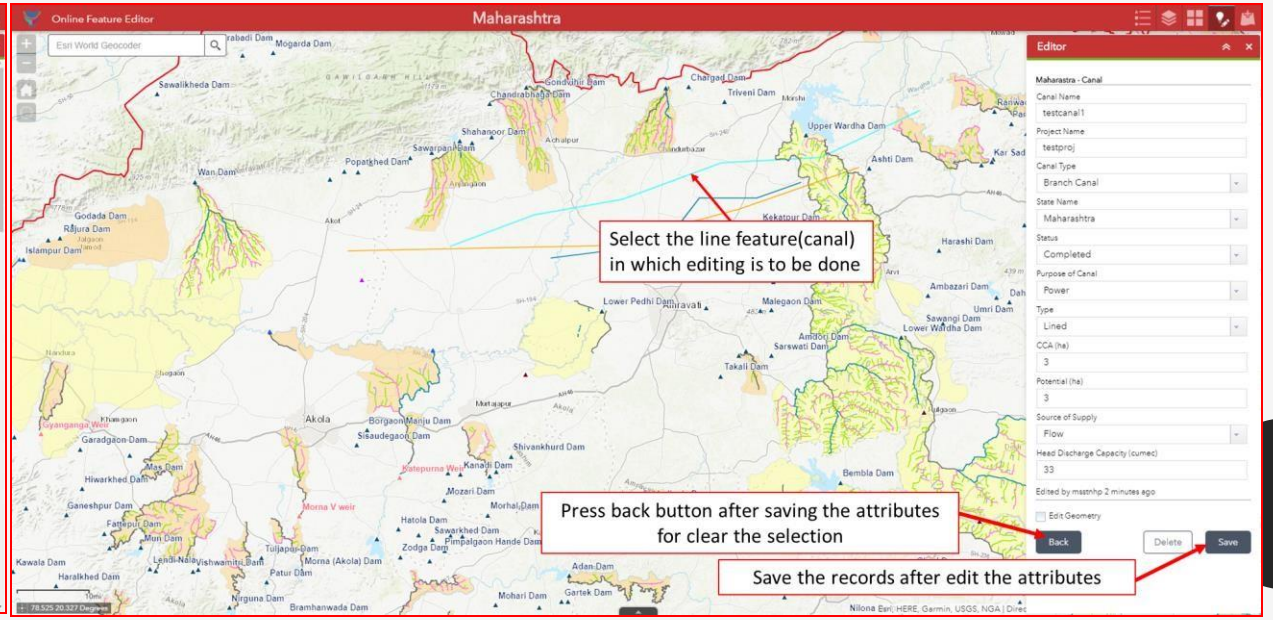


Online Web Editor

Edit Feature

- The user has to click on the editor tool then click on the point or line feature to edit.
- All the attributes related to that feature will open in the form.
- User can fill or edit the attributes in the form and then save the record.

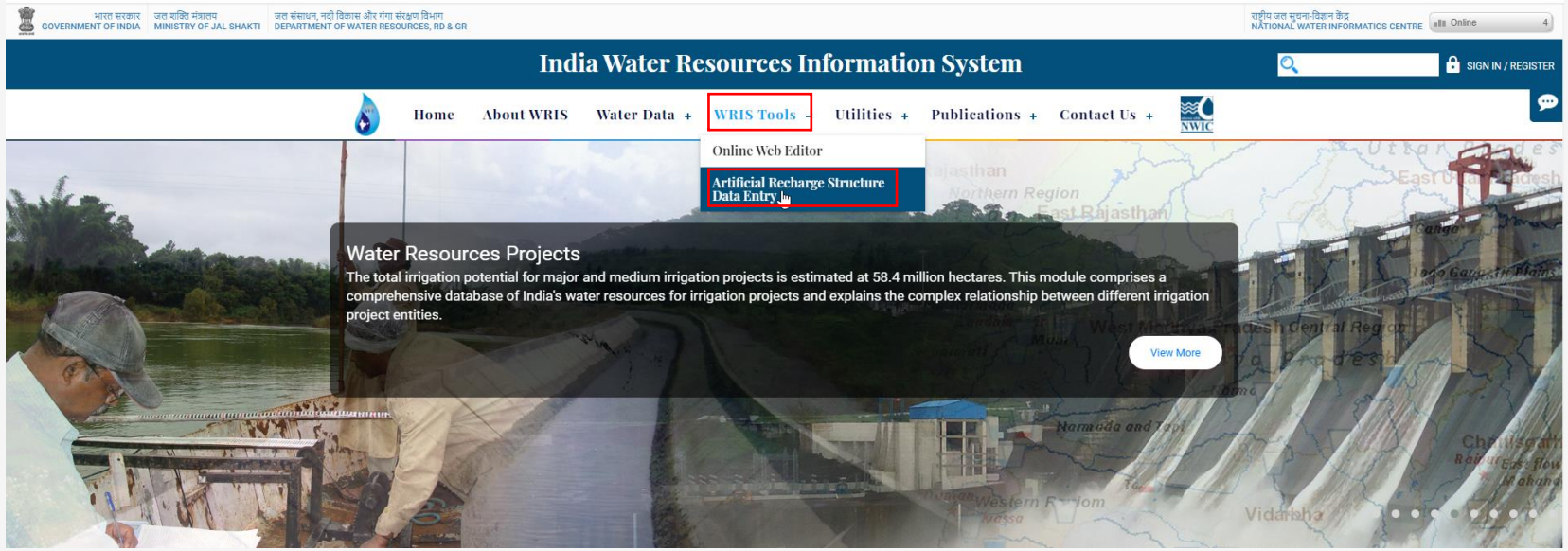




B. Artificial Recharge Editor

Artificial Recharge Structure (ARS) Module

1. Single Point Access & Database
2. Data Entry Dashboard
    1. Authorized user login (State & Agency wise)
    2. User can populate all information pertaining to ARS constructed under various schemes
    3. Generate reports for their data entry


भारत सरकार
GOVERNMENT OF INDIA
जल शक्ति मंत्रालय
MINISTRY OF JAL SHAKTI
जल संसाधन, नदी विकास और गंगा संरक्षण विभाग
DEPARTMENT OF WATER RESOURCES, RD & GR
राष्ट्रीय जल सूचना-विज्ञान केंद्र
NATIONAL WATER INFORMATICS CENTRE
Online
India Water Resources Information System
SIGN IN / REGISTER
Home
About WRIS
Water Data
WRIS Tools
Utilities
Publications
Contact Us
NWIC
Online Web Editor
Artificial Recharge Structure Data Entry
Water Resources Projects
The total irrigation potential for major and medium irrigation projects is estimated at 58.4 million hectares. This module comprises a comprehensive database of India's water resources for irrigation projects and explains the complex relationship between different irrigation project entities.
View More

Agencies

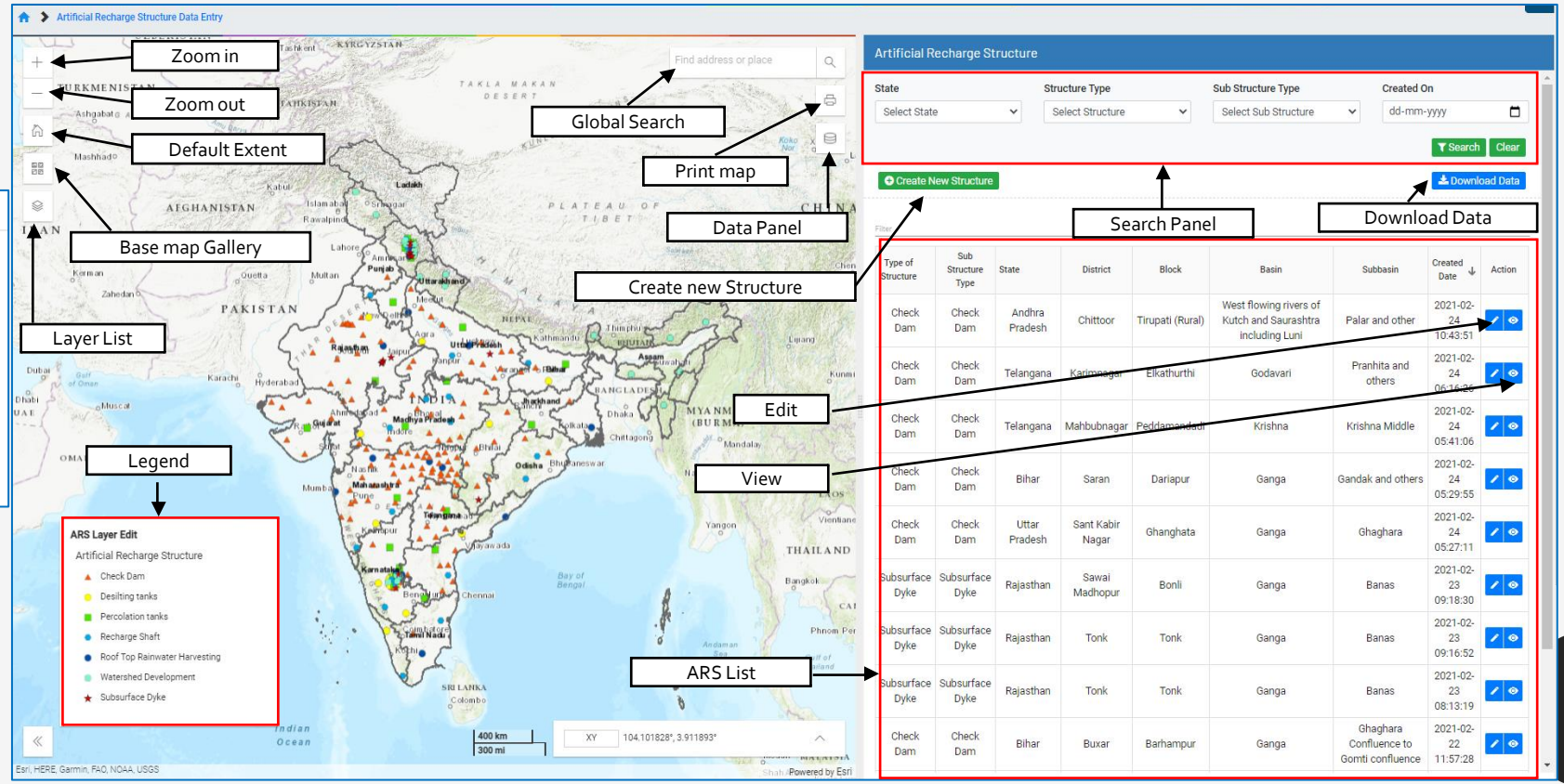
ARS – Data Entry

Data Entry Platform to ingest the attribute data directly into the India WRIS database.

Smart Editor –

- Create features such as
  - Check dams
  - De-silting tanks
  - Percolation tanks
  - Recharge shaft
  - Roof top rainwater harvesting
  - Watershed development and
  - sub-surface dyke
- Edit Existing features
- Download Data

Login Based



ARS – Data Entry

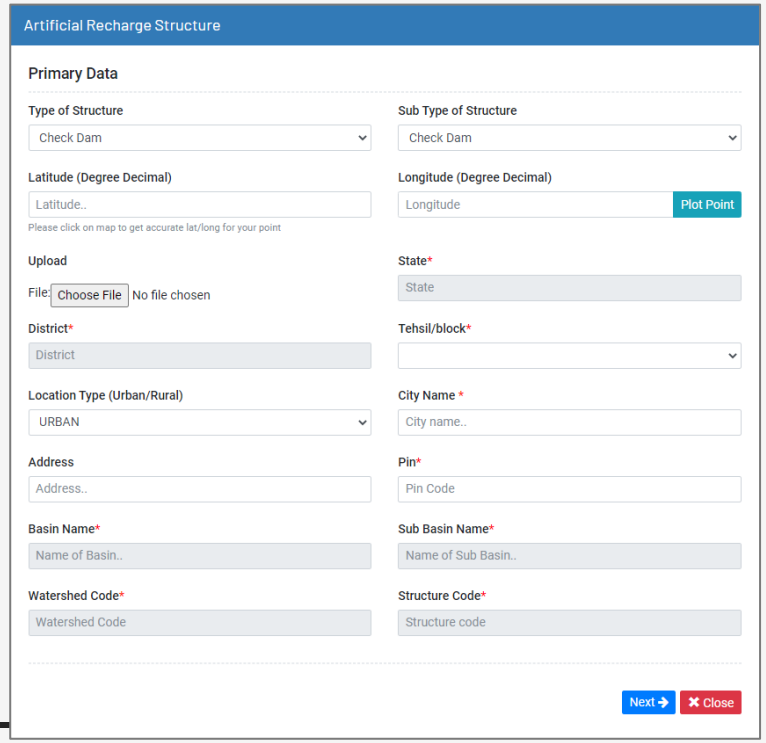
Create new feature–

- Primary and Secondary data form
- Select Structure type & Subtype
- Plot point – Latitude/Longitude
- Autofill of details (grey fields) based on location
- Upload image facility
- Add details for the fields
- Save

2 sections in Data Entry Form:

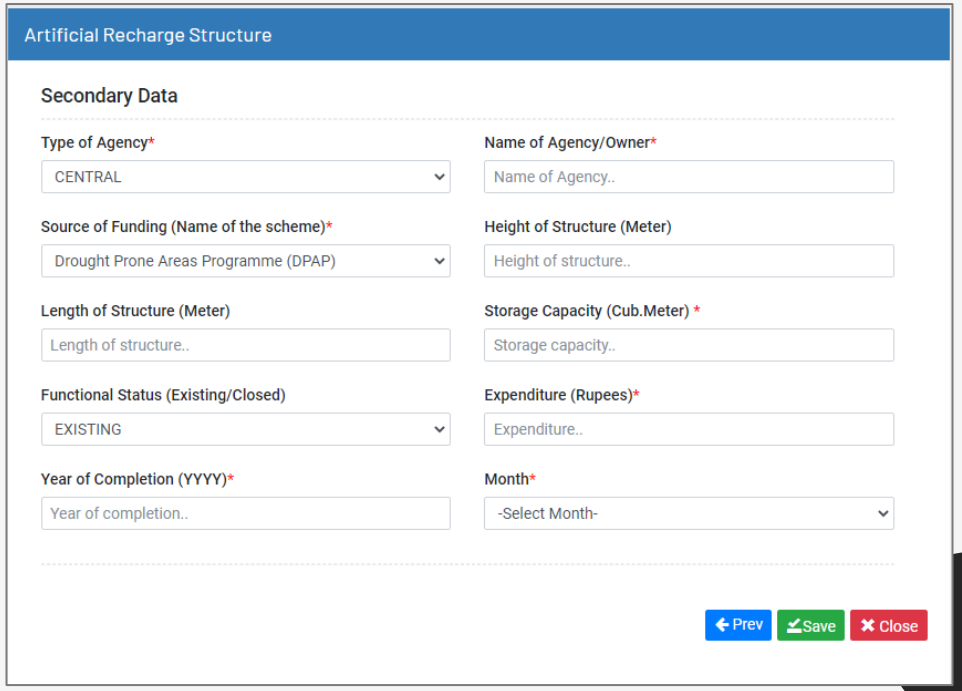
---Part A

Primary Field Related To 'Location Details'



---Part B

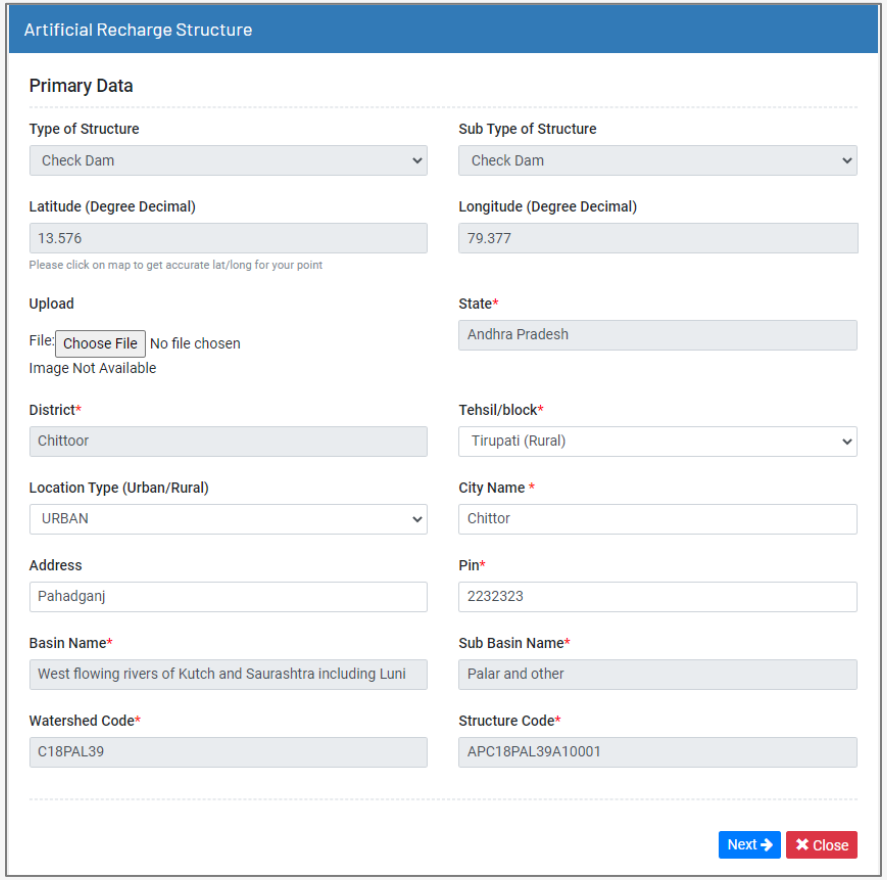
Secondary field are for 'structure details' such as like width, height, storage capacity etc. D:\data collection sheet.xlsx

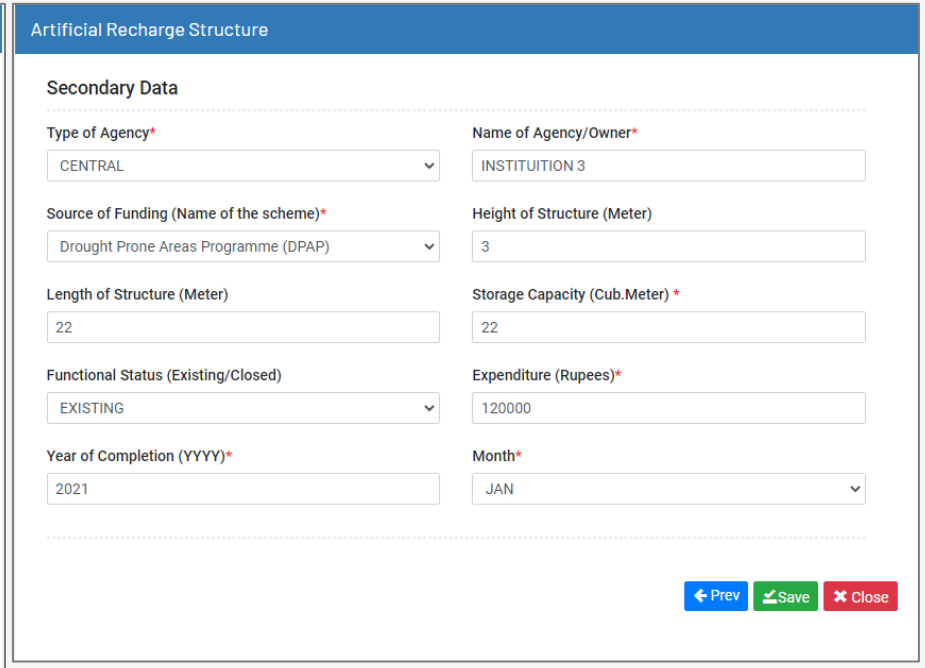


ARS – Data Entry

Edit existing feature–

- Select Structure to edit
- Add/update details for the fields in primary & secondary form
- Upload image facility
- Save





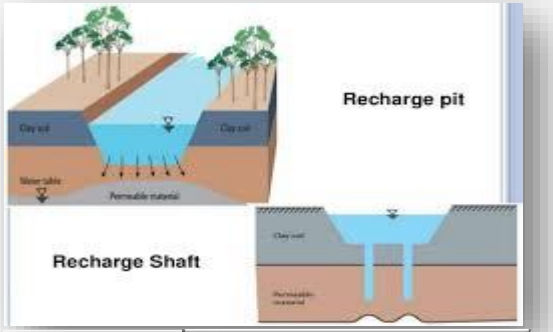
ARS Types and Sub Types

CHECK DAMS
Check Dam
Nala Bund
Cement Plug
Gully Plug
Check Dam with associated structures
Vented Dam

ROOF TOP RAINWATER HARVESTING
RTRWH <50m
RTRWH area 50 to 300 sq. m.
RTRWH area 300 to 1000 sq. m.
RTRWH area > 1000 sq. m.

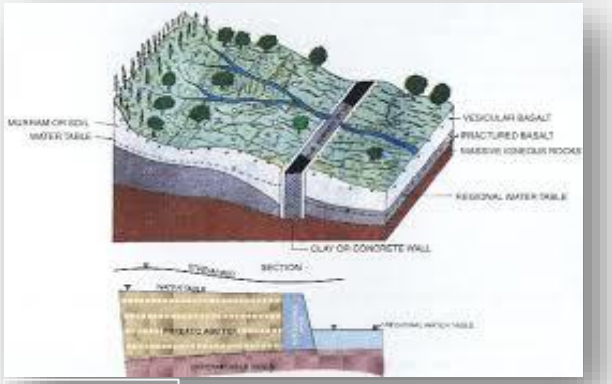
DESILTING TANKS
Desilting of Tanks
Revival of Tank
Revival of Mauns
Revival of Ahar Payne
Modification of Village Pond

Springshed Development/Watershed Development
Springshed Development
Watershed Development
Diversion of flow from Nala & Springs
Contour Bund
Contour Trench
Gabion



RECHARGE SHAFT
Recharge Shaft
Recharge Shaft & Recharge Trench
Recharge well (Bore well)
Recharge well (Dug well)
Recharge well (Tube well)
Injection wells

PERCOLATION TANKS
Percolation Tank
Percolation Pond
Farm Pond
Village Pond
Farm Pond with Recharge Pit
Chal khal (Bawdi)



SUB SURFACE DYKE

Data Entry Form - Template

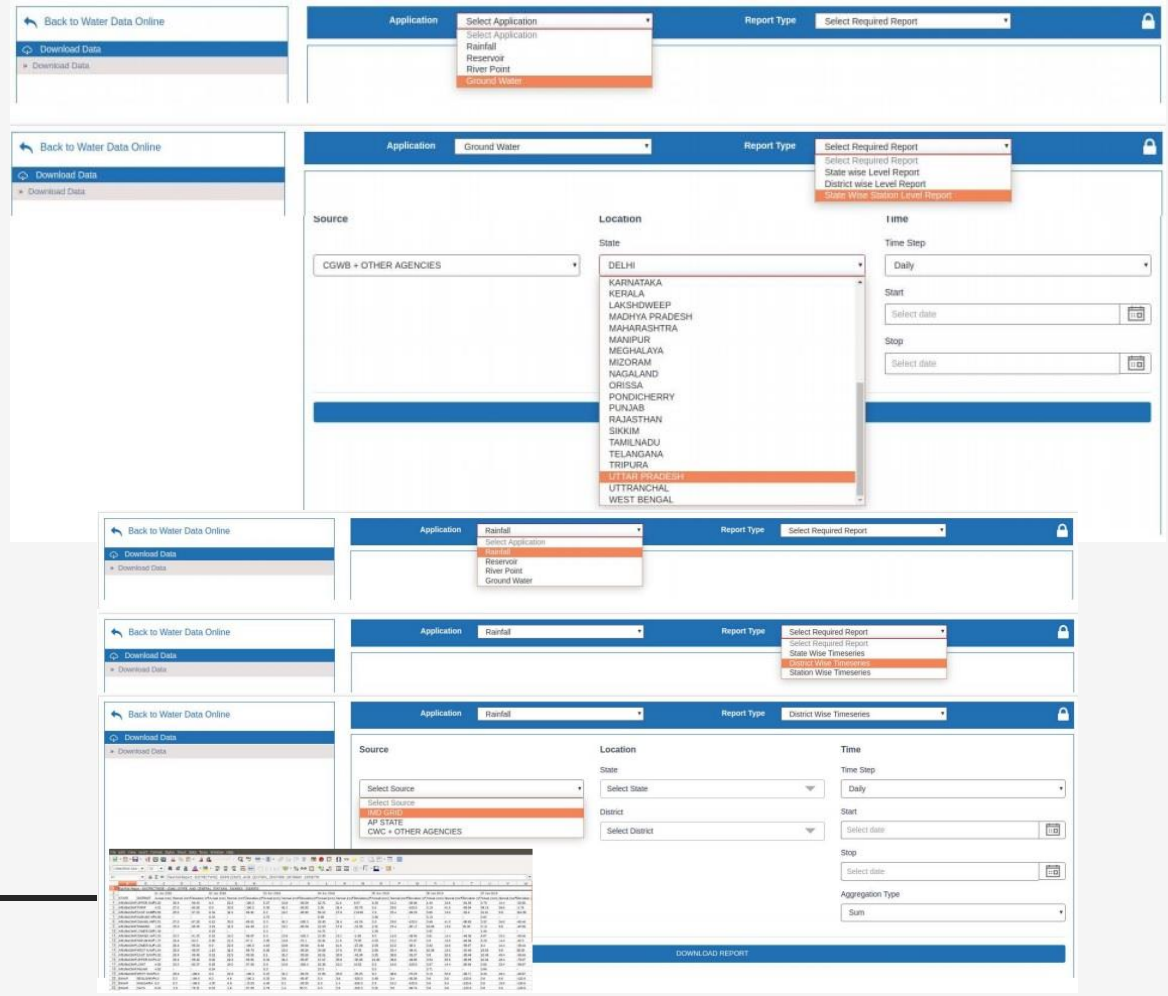
Artificial Recharge Structure Data Entry Format (Check Dam)

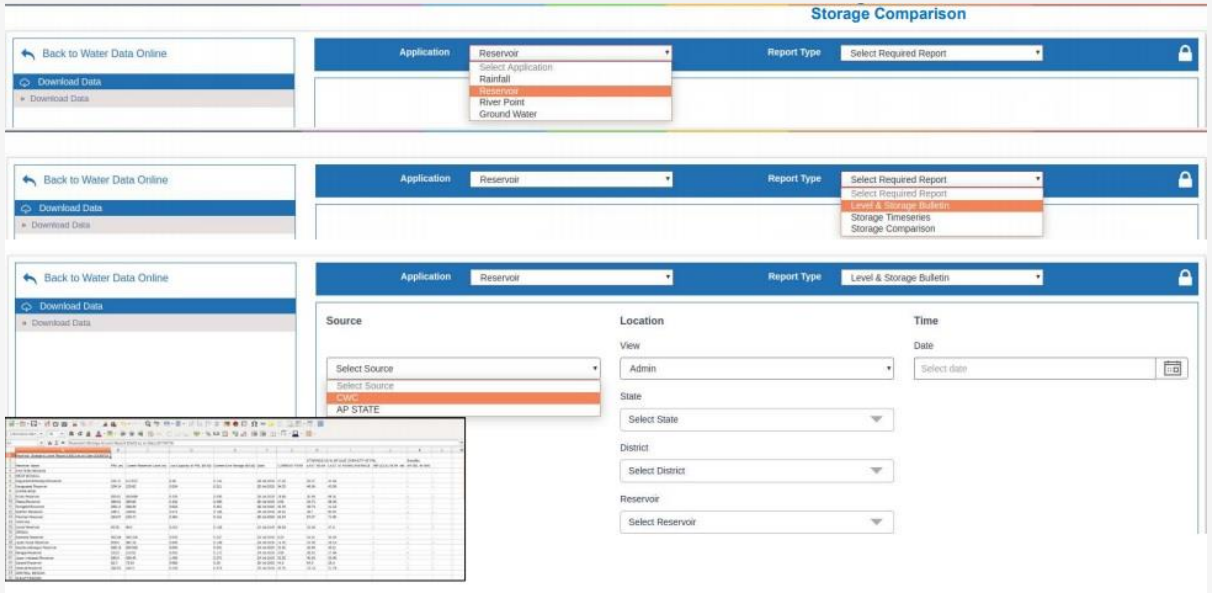
*Mandatory Fields	PRIMARY											SECONDARY									
	1	2	3	4	5	6	7	8	9	10	11	1	2	3	4	5	6	7	8	9	10
ARS No.	Latitude (Degree Decimal)*	Longitude (Degree Decimal)*	Sub Type of Structure*	State*	District*	Tehsil/ Block*	Village*	Pin*	Location Type (Urban / Rural)*	Address (Required in Urban Location)	City Name* (Required in Urban Location)	Type of Agency*	Name of Agency/ owner*	Source of Funding (Name of the scheme)	Height of Structure (Meter in above ground level)	Length of the Structure (Meter)	Storage capacity (Cub. M)*	Functional Status (Existing/ Closed)	Expenditure (Rupees)*	Year of Completion* (YYYY)	Photograph (Yes/No)*
Structure No.1																					
Structure No.2																					
Structure No.3																					
Structure No.4																					
Structure No.5																					
Structure No.6																					
Structure No.7																					
Structure No.8																					
Structure No.9																					
Structure No.10																					
Structure No.11																					
Structure No.12																					
Structure No.13																					
Structure No.14																					
Structure No.15																					

Utilities

1 Data/Report Download (Tabular)

- *Offers download of time series data*
- *Various types of reports already generated, for ease of data assessment and usage.*
- *Also has a comparison dashboard for comparing the reservoirs and river points data.*

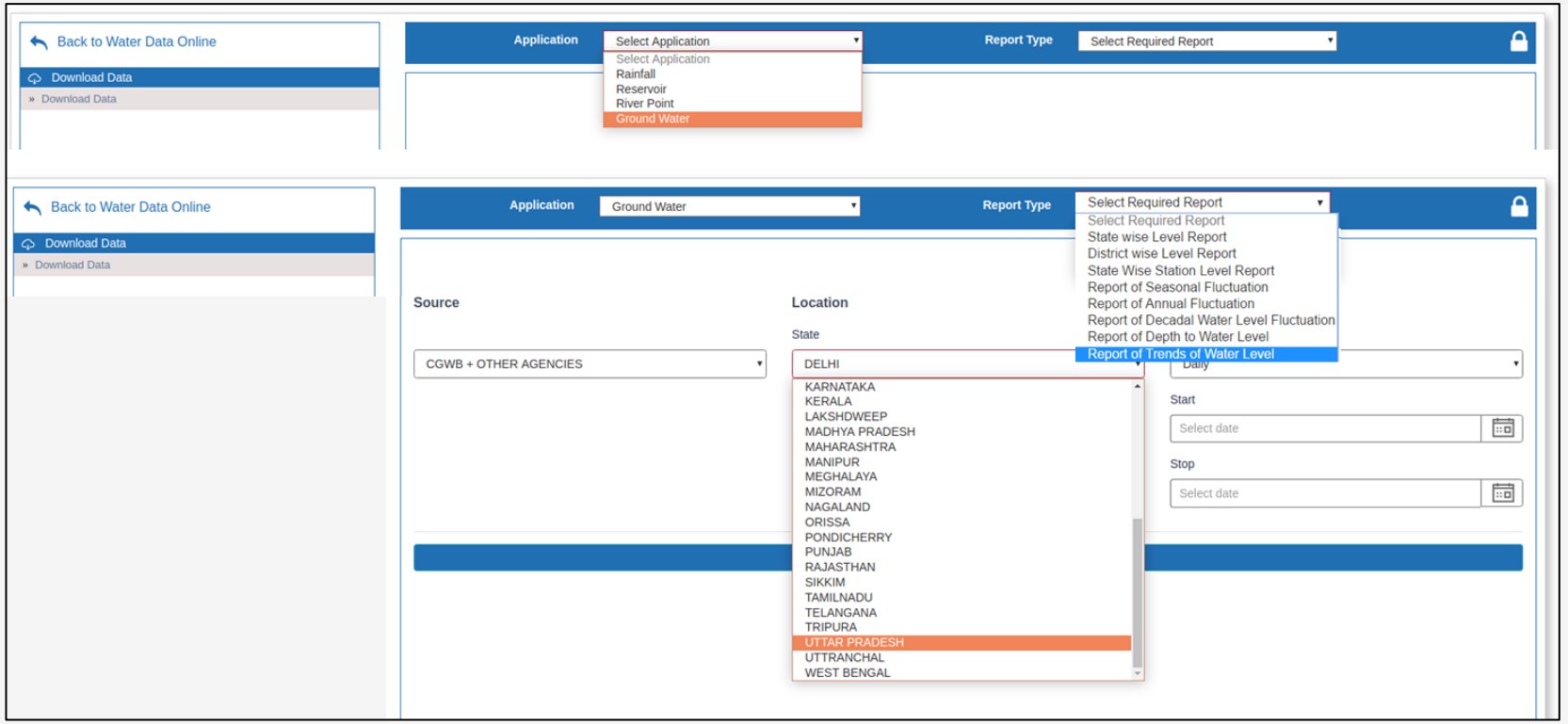




Utilities

Groundwater data download

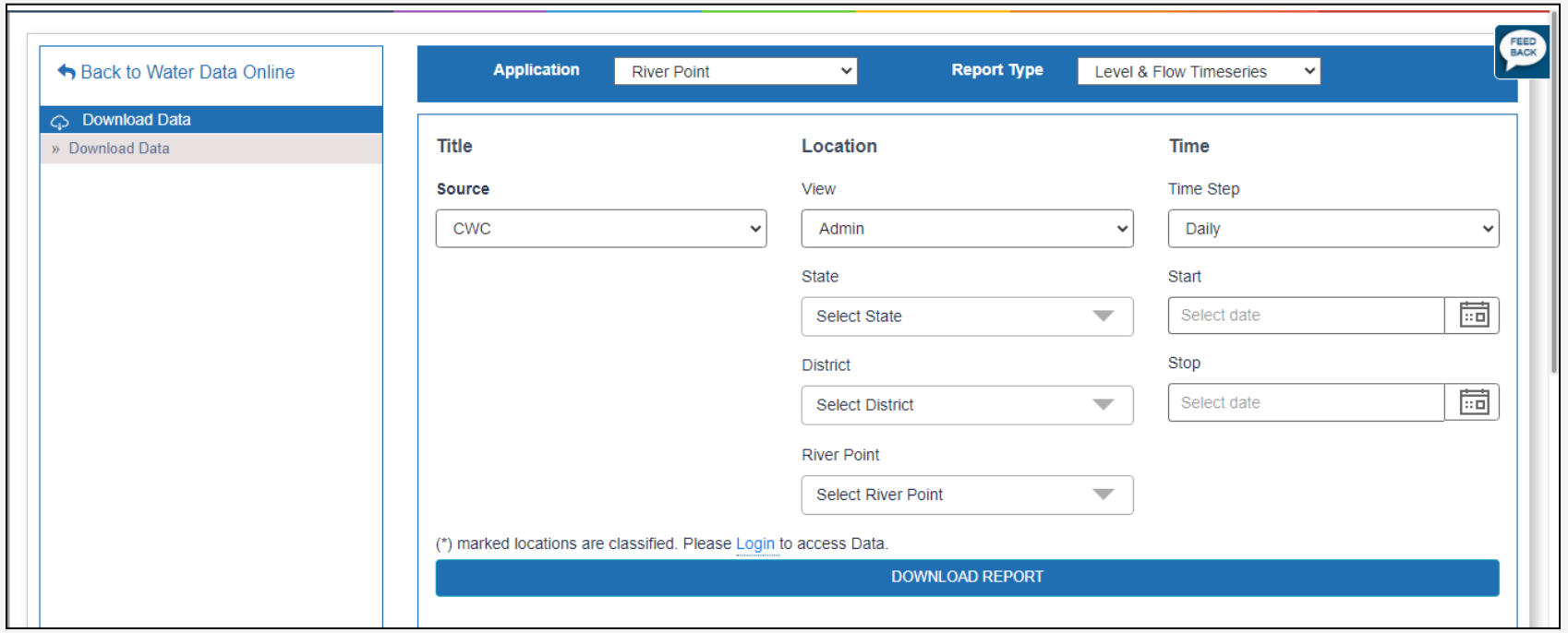
-Groundwater Level - State-wise | District wise | Station wise | Report of Seasonal Fluctuation | Report of Annual Fluctuation | Report of Decadal Water Level Fluctuation | Report of Depth to Water Level | Report of Trends of Water Level



Utilities

River Monitoring stations data download

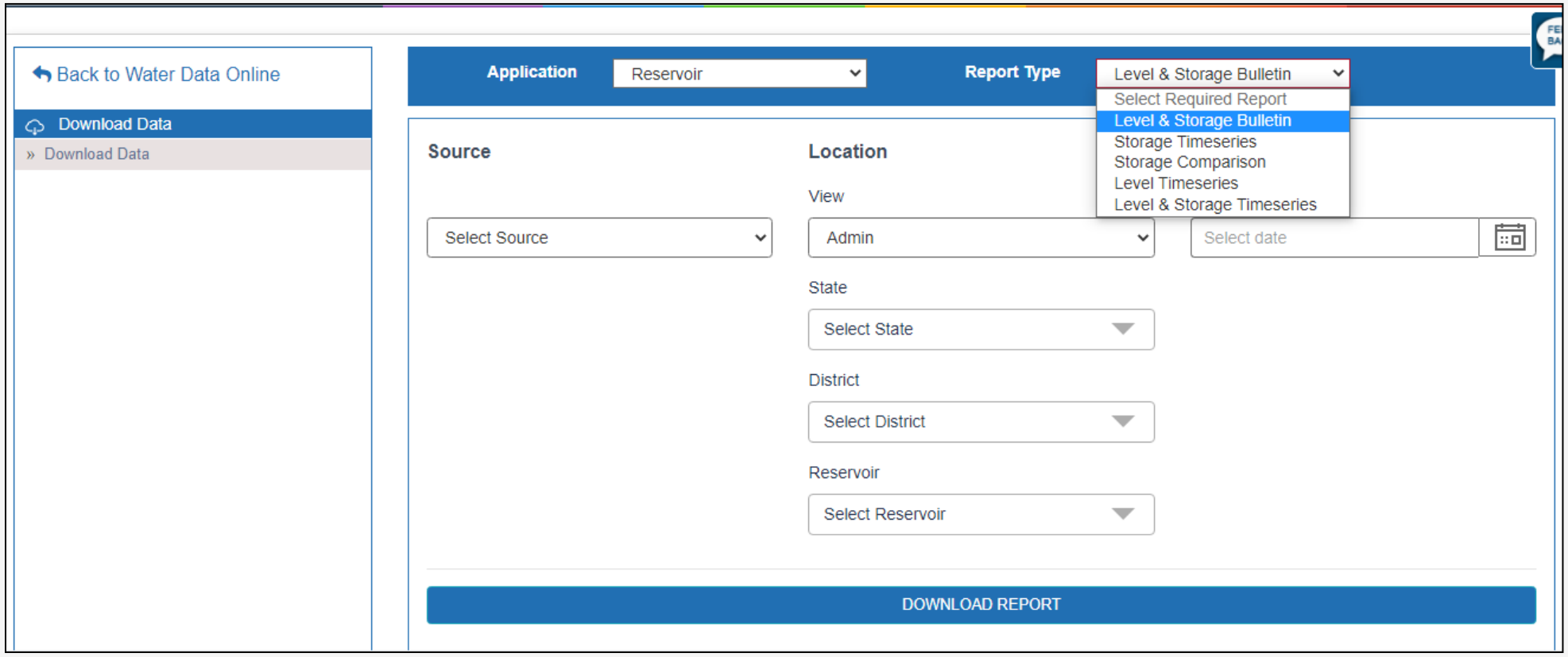
Level and flow



Utilities

Reservoir data download

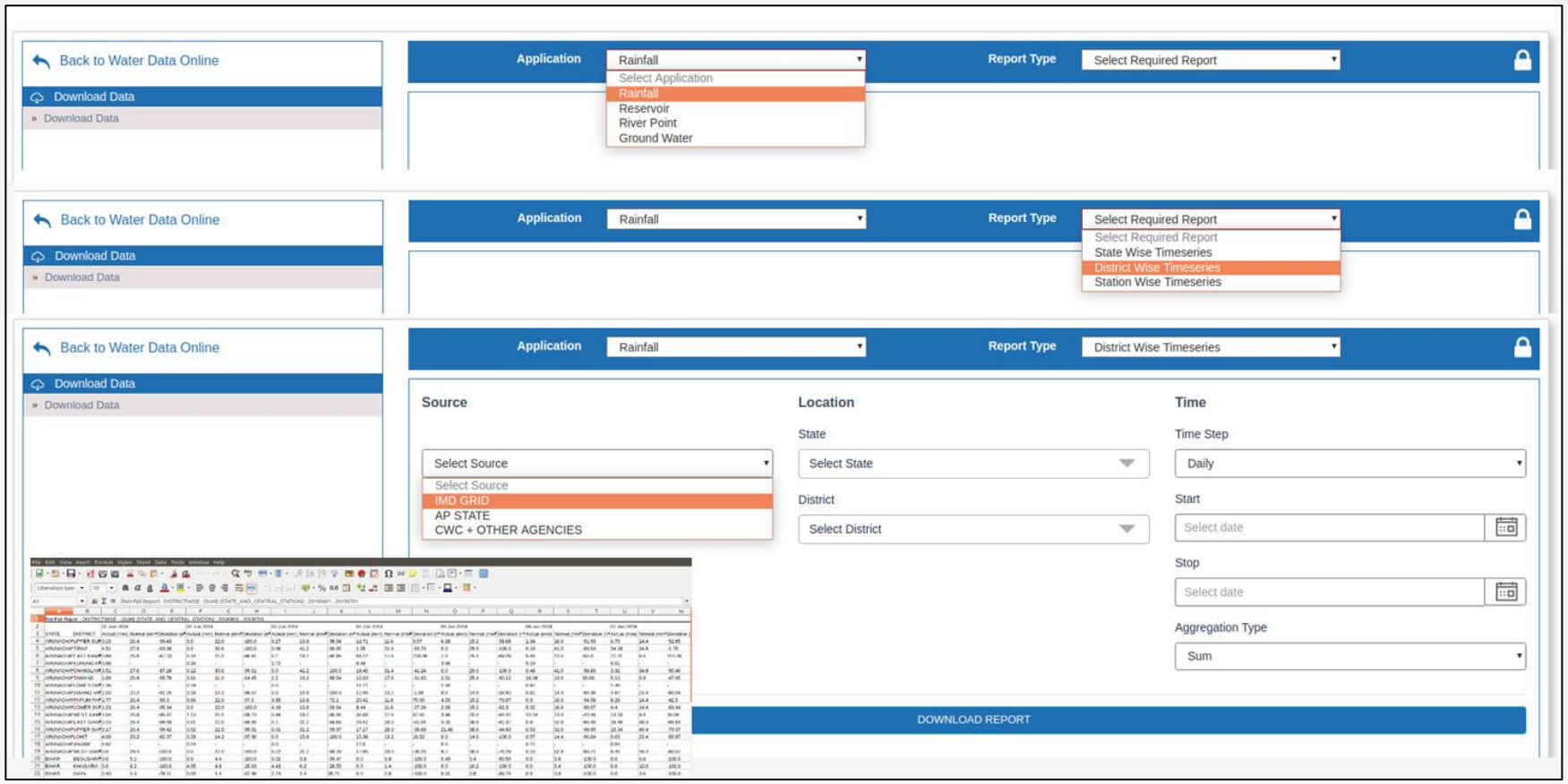
- Level & Storage Bulletin | Storage & Level Time-series | Storage Comparison | Level Timeseries | Storage Timeseries



Utilities

Rainfall data download

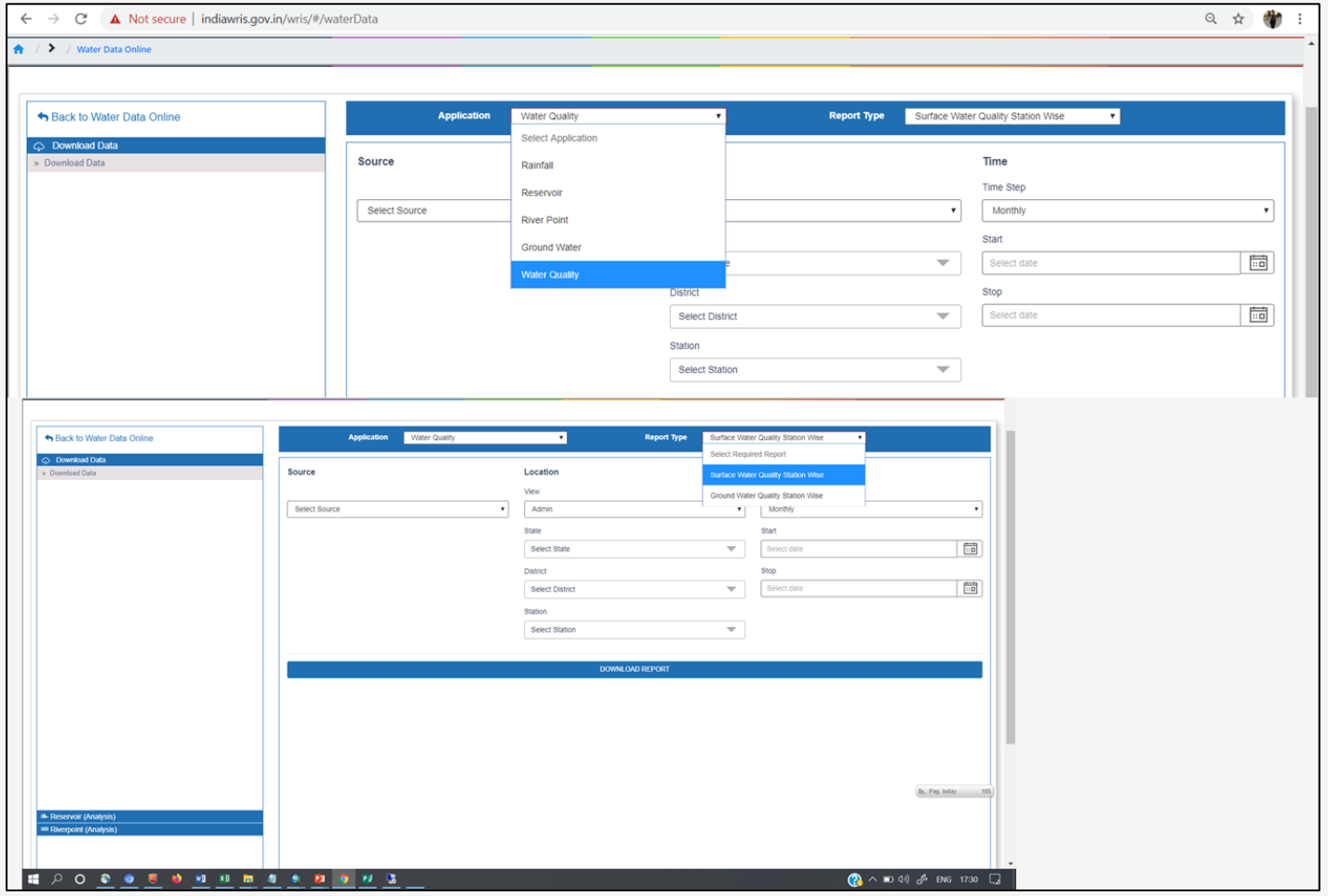
- Rainfall - State wise | District wise | Station-wise | Basin-wise



Utilities

Water Quality data download

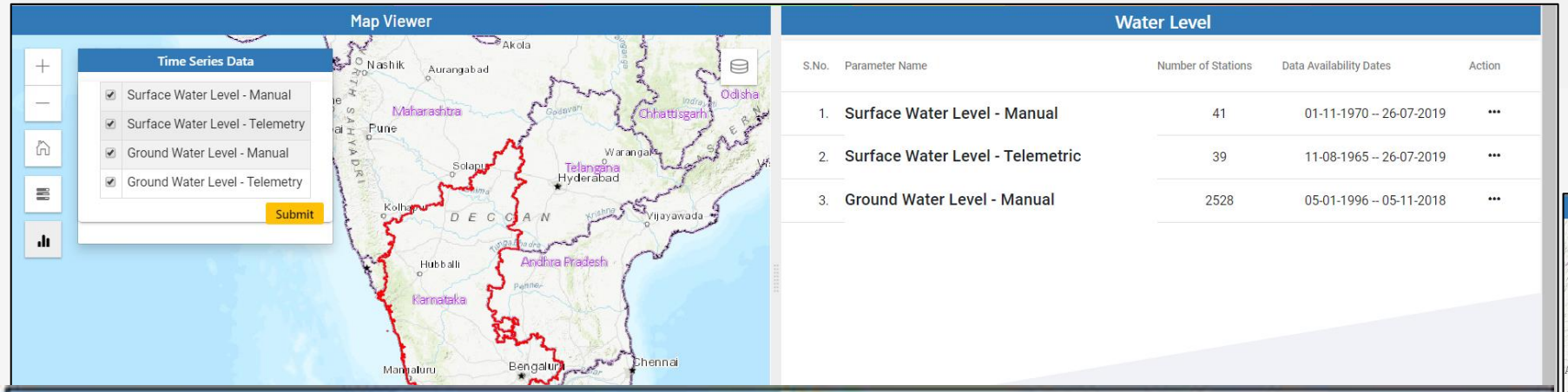
- Groundwater Sites | Surface Water Sites

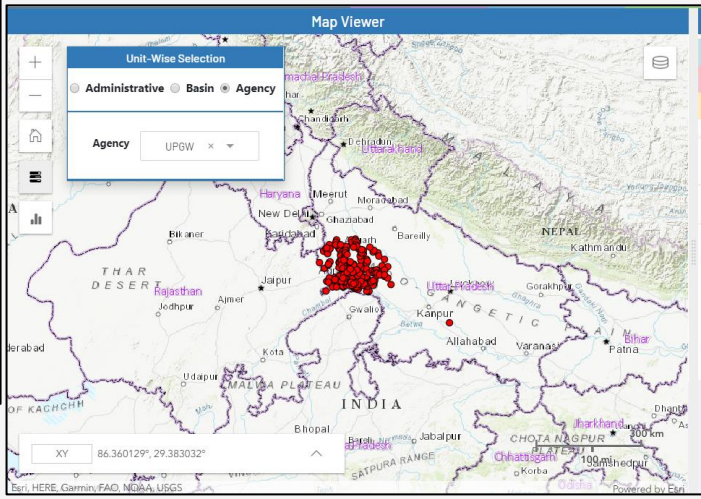


Utilities

2 Data Availability

-Availability of time series data of telemetry and manual stations as per State/Agency/Basin wise.
-Color code is provided to display the recent data availability and availability report download for selected unit is also provided through this module.

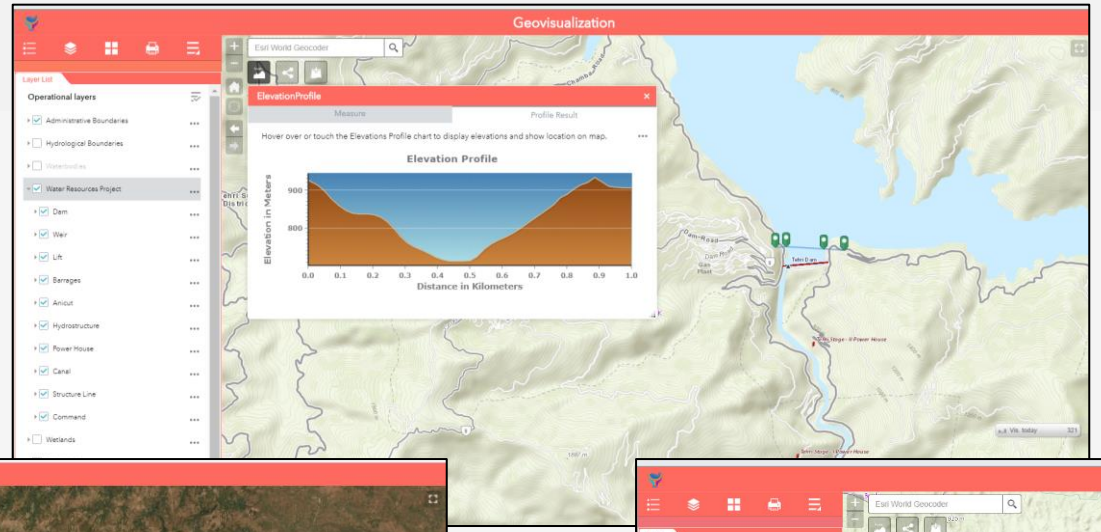


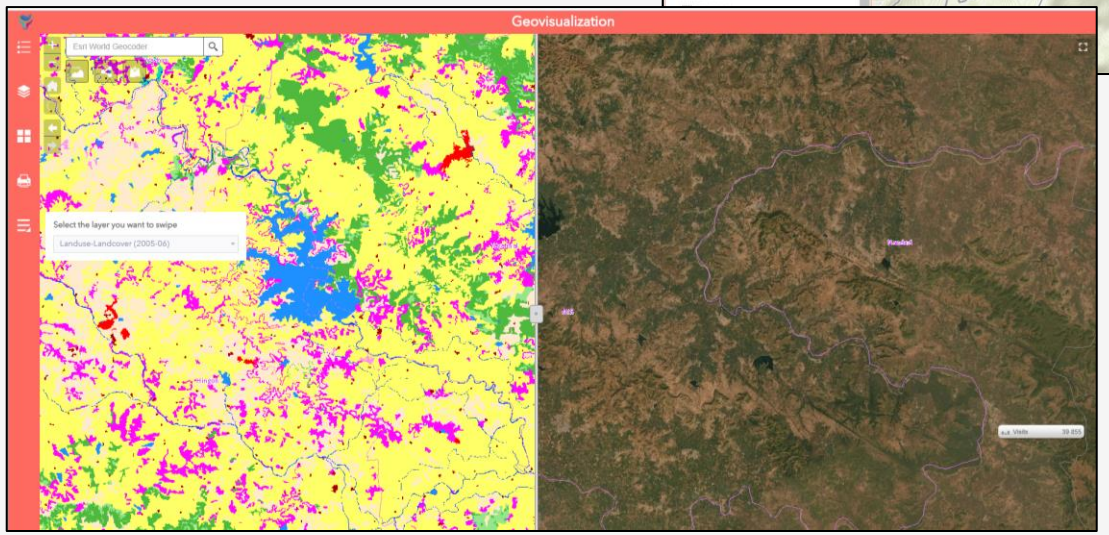


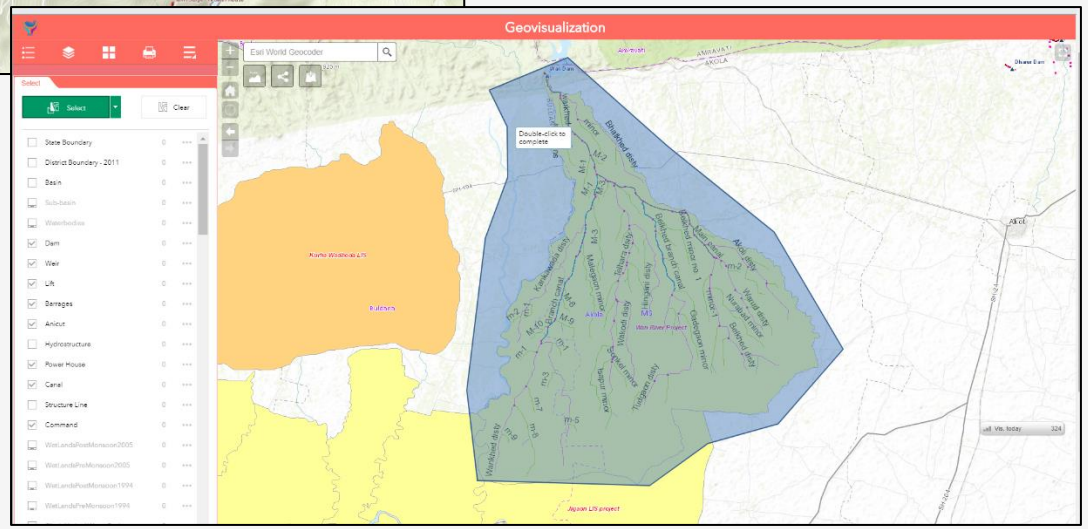
Utilities

3 Geoviewer

- Tool to visualize all the different sets of data on a single application for a comparative and interlinked view to derive a holistic picture with overlay.





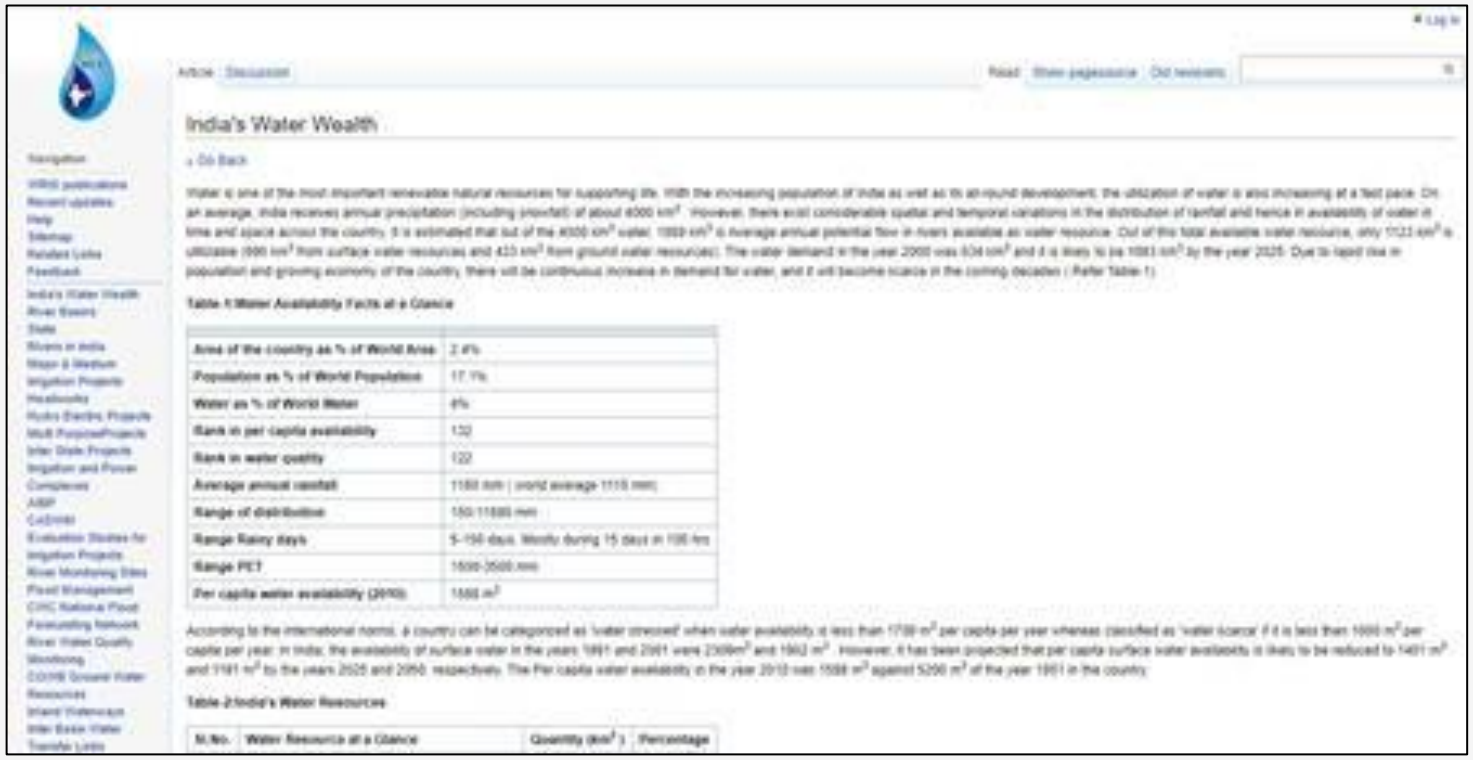


Utilities

4 WRIS Wiki

- *Comprehensive information for the water resources assets and projects of the country is made available through WRIS Wiki application.*
- *Available information has been organized under following heads:*

- *Water Resources of India - An overview*
- *Rivers of India*
- *River Basins – Facts at a glance*
- *Major & medium irrigation projects*
- *Inland Navigation Waterways*
- *Inter-Basin Water Transfer Links*
- *Ground Water Resources*
- *Hydro-Meteorological sites*
- *State wise Information*
- *Legal Instruments on Rivers in India*
- *Inter State Water Dispute*



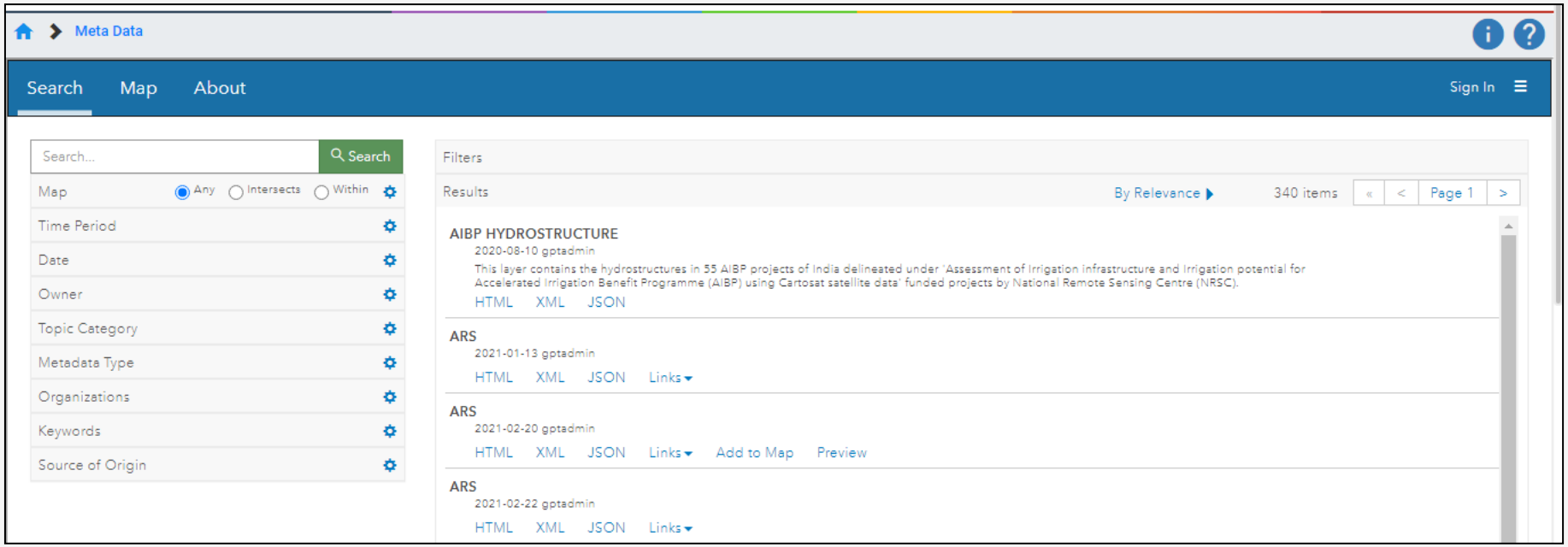
Utilities

5 Metadata

- Metadata module offers the information about the different GIS layers, its source, Citation and other details.

The metadata can be viewed in three formats –

- HTML
- XML
- JSON



Utilities

6 District at a glance

- *acts as a tool to provide first level of information of at a glance.*
- *Overview of the national level scenario of water resources at a district level scale.*

District Name: South West Delhi

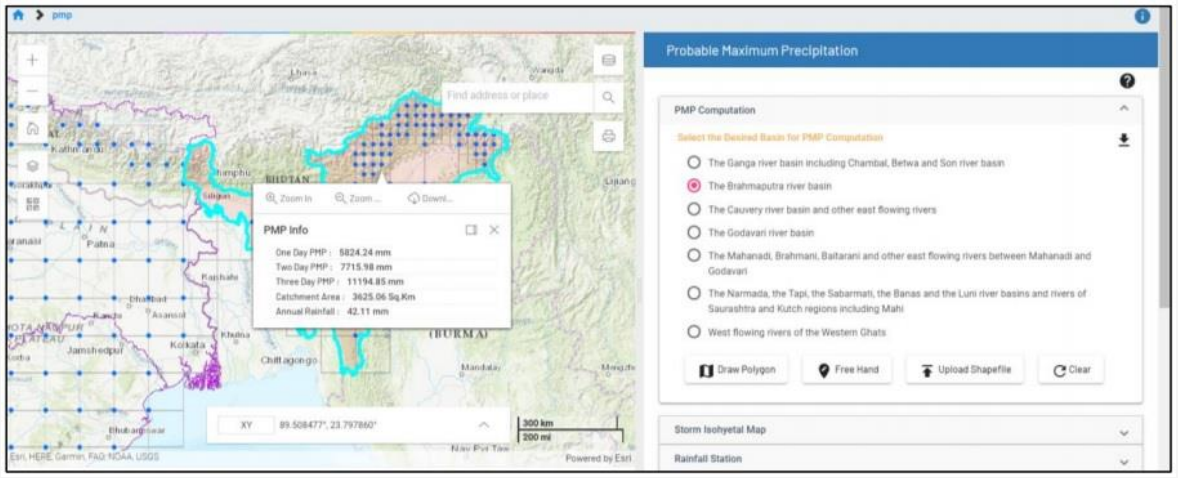
Export Clear

Sr No	Name	Description
1	District	South West Delhi
2	State	DL
3	Area in SqKms	395
4	Population	2292958
5	Growth Rate	30.65
6	Sex Ratio	840
7	Literacy	88.28
8	Density	5445
9	Seismic Zone	Seismic Zone-IV
10	Water Resources	
10.1	Dams (in Nos)	null
10.2	Barrage (in Nos)	null
10.3	Lift (in Nos)	null
10.4	Power House (in Nos)	null
10.5	Water Bodies (in Nos)	4
11	Minor Irrigation(5th Census)	
11.1	Ground Water Schemes	3458
1	Dugwells (in Nos)	0
2	Shallow Tubewells (in Nos)	144
3	Deep Tubewells (in Nos)	3314
11.2	Surface Water Schemes	0
1	Surface Flow (in Nos)	0
2	Surface Lift (in Nos)	0
11.3	Water Distribution Devices	3457
1	Open Water Channel (in Nos)	3449
2	Underground Pipe (in Nos)	4
3	Surface Pipe (in Nos)	4
4	Drip (in Nos)	0
5	Sprinkler (in Nos)	0
6	Others (in Nos)	0
11.4	Culturable Command Area(in ha)	7245.23
11.5	Irrigation Potential Created(in ha)	13531.02
11.6	Irrigation Potential Utilized(in ha)	11490.94

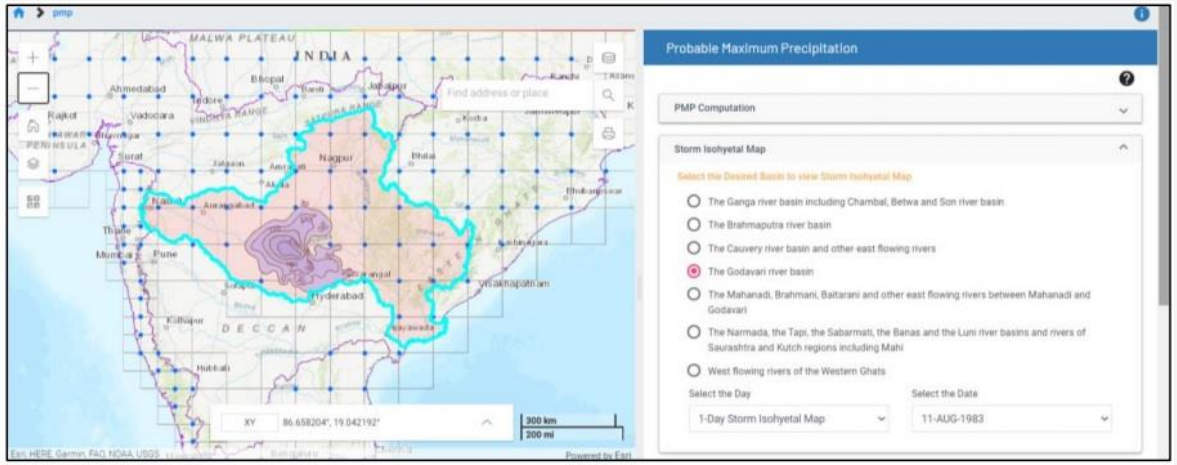
Utilities

7 Probable Maximum Precipitation (PMP)

- *PMP value will be computed for an area of interest*
- *Query area limit is 500 Sq. km.*



PMP Computation - Result

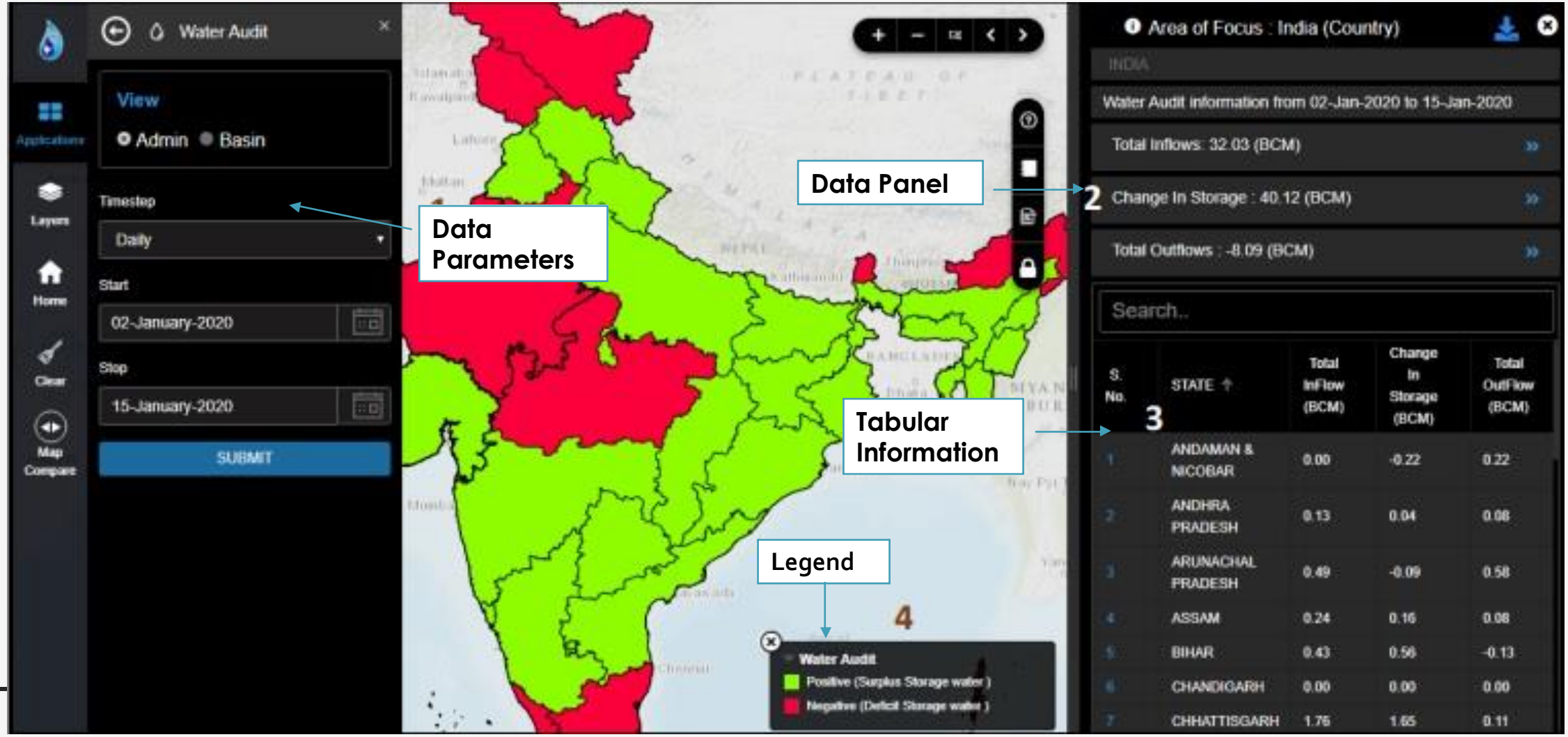


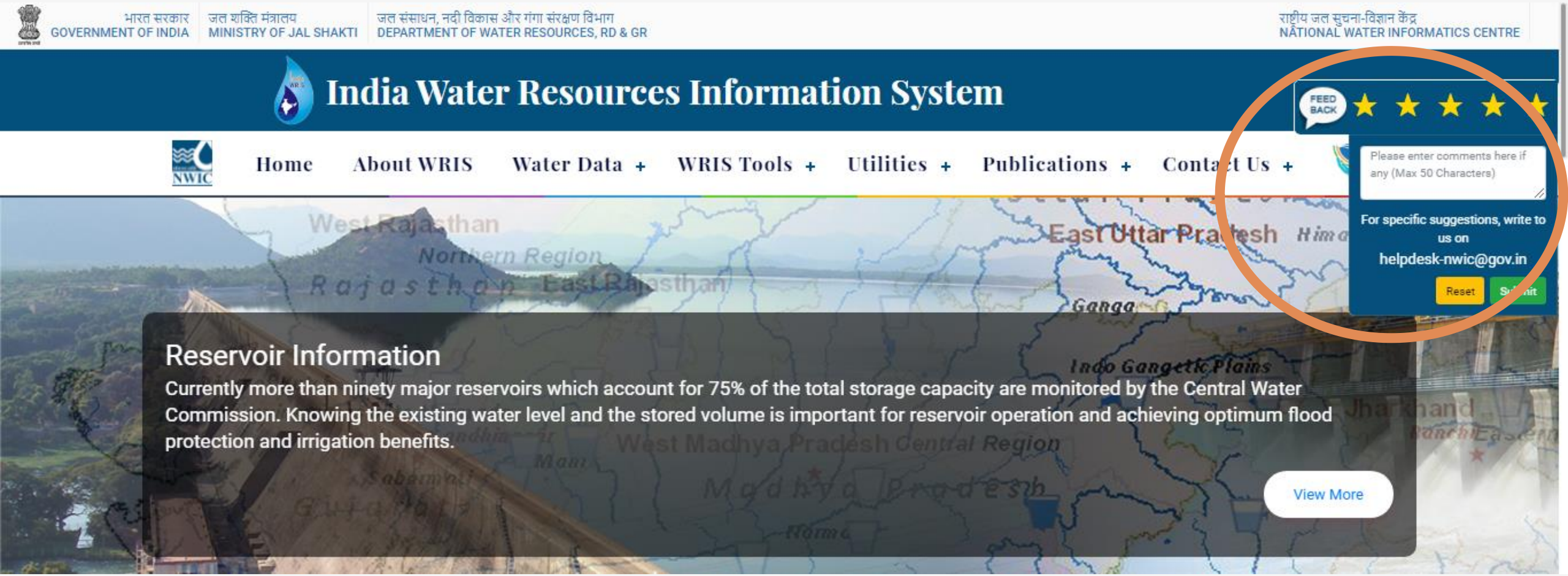
Storm Isohyetal Map

Utilities

8 Surface Water Audit

- Inflows and outflows in an area and its change in storage for a particular time period.
- displays the excess and low water storage in different parts of the country





Contact Us at *helpdesk-nwic@gov.in*

Thank you