Government of Haryana Water Summit

Geo Smart India
Conference and Expo

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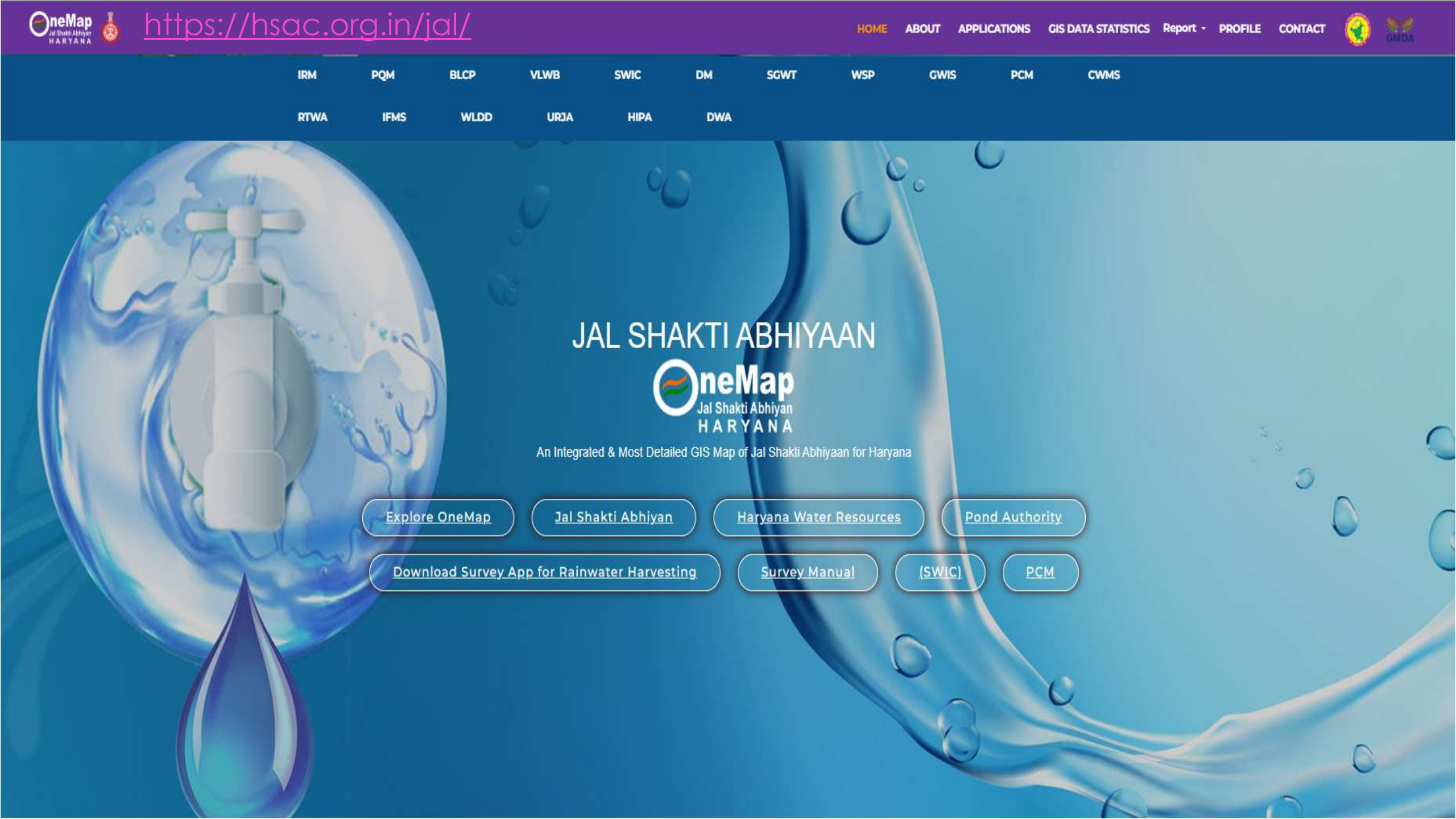
Bharat Mandapam, New Delhi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HOME
ABOUT
APPLICATIONS
GIS DATA STATISTICS
Report
PROFILE
CONTACT
IRM
PQM
BLCP
VLWB
SWIC
DM
SGWT
WSP
GWIS
PCM
CWMS
RTWA
IFMS
WLDD
URJA
HIPA
DWA
JAL SHAKTI ABHIYAAN
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Pond Authority
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Survey Manual
(SWIC)
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Jal Shakti Abhiyan Portal
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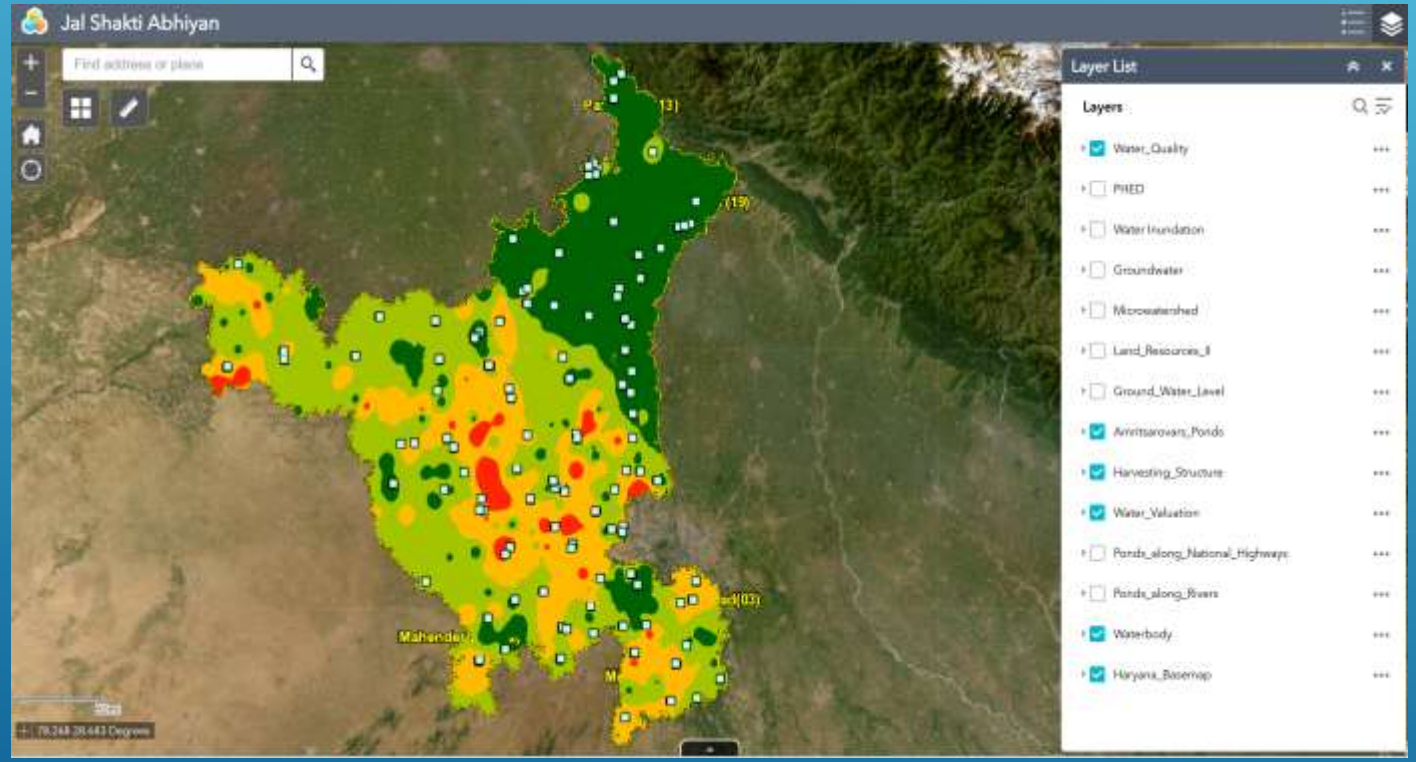
•**To assess and integrate key water resources information**—including water quality, groundwater levels, waterbodies, and watershed characteristics—to support effective planning at the local level.

•**To identify and optimize water conservation structures** such as Amrit Sarovars, harvesting structures, ponds, and recharge areas for sustainable groundwater recharge and water storage enhancement.

•**To develop a comprehensive decision-support system** that enables efficient water management, valuation, and distribution by leveraging spatial data on water networks, inundation zones, and land resources.



Integrated Reservoir Management (IRM)

Operating, maintaining, and monitoring dams so that water is used optimally while ensuring dam safety,
flood control, and long-term storage (including sediment control)

Key objectives:-

- Meet multiple demands: irrigation, drinking water, hydropower, environmental flows, and sometimes navigation and fisheries.
- Control floods and ensure dam safety requirements.

- Sustain storage over decades by managing sedimentation and watershed conditions

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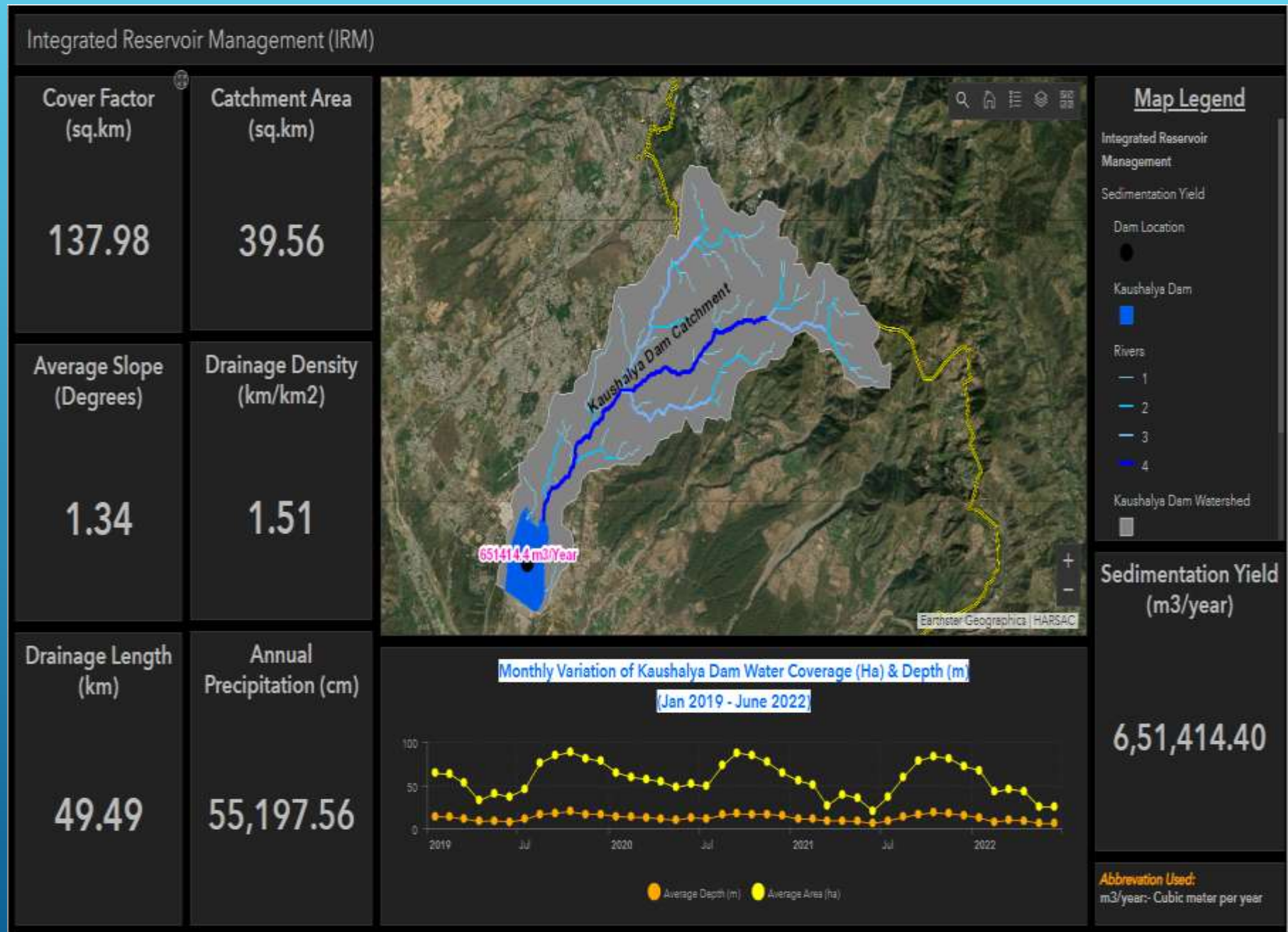
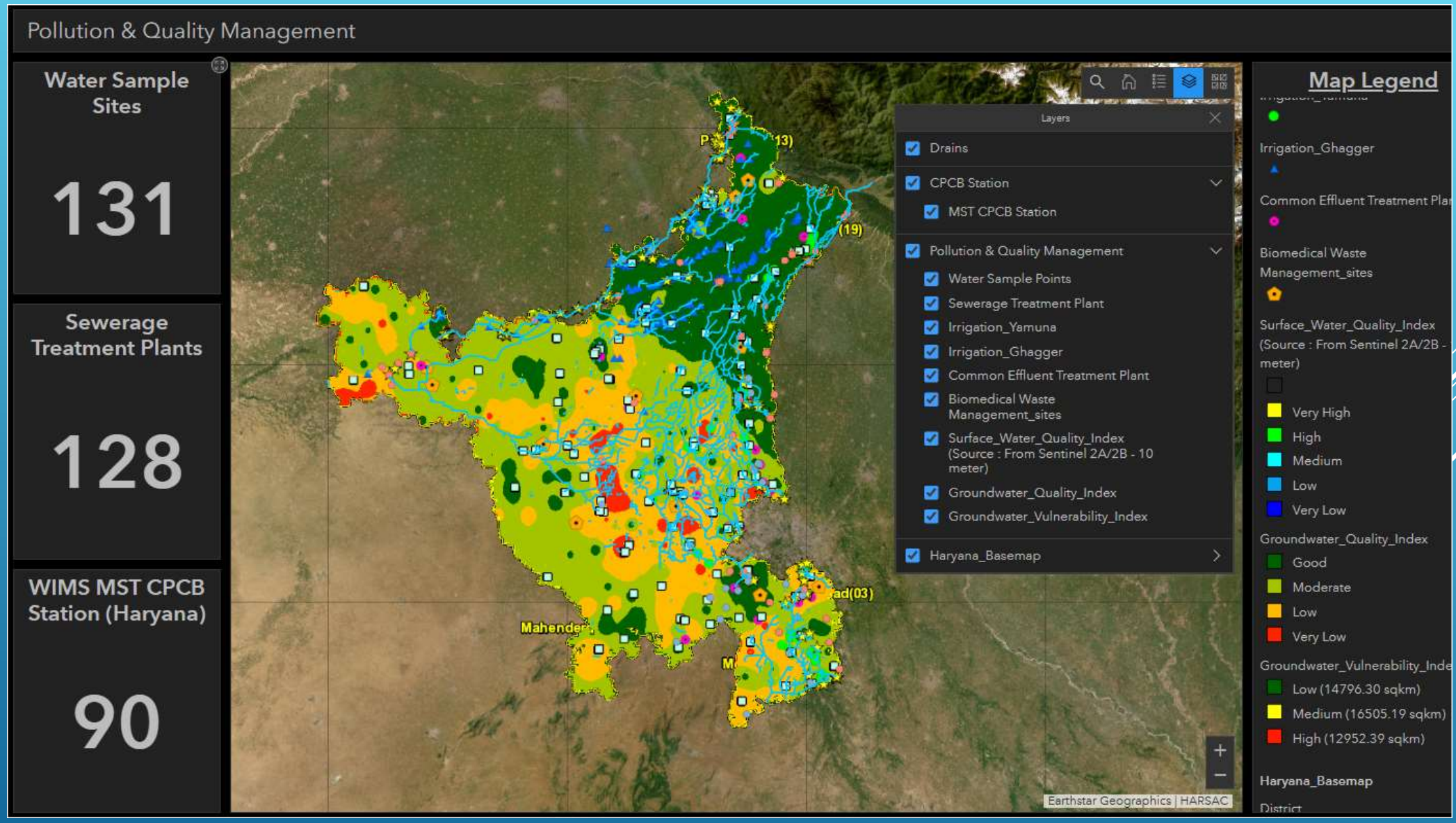


Pollution & Quality Management

- Shows the overall water pollution and quality status across Haryana.
- **131** water sampling sites, **128** sewerage treatment plants, and **90** **CPCB** monitoring stations across the state.
- Includes multiple spatial layers such as Drains, CPCB Station and Pollution and Quality Management.

Importance:

- Provides a real-time overview of water pollution and quality across Haryana
- Supports data-driven decision-making for water management and planning.



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Village Level Water Budget

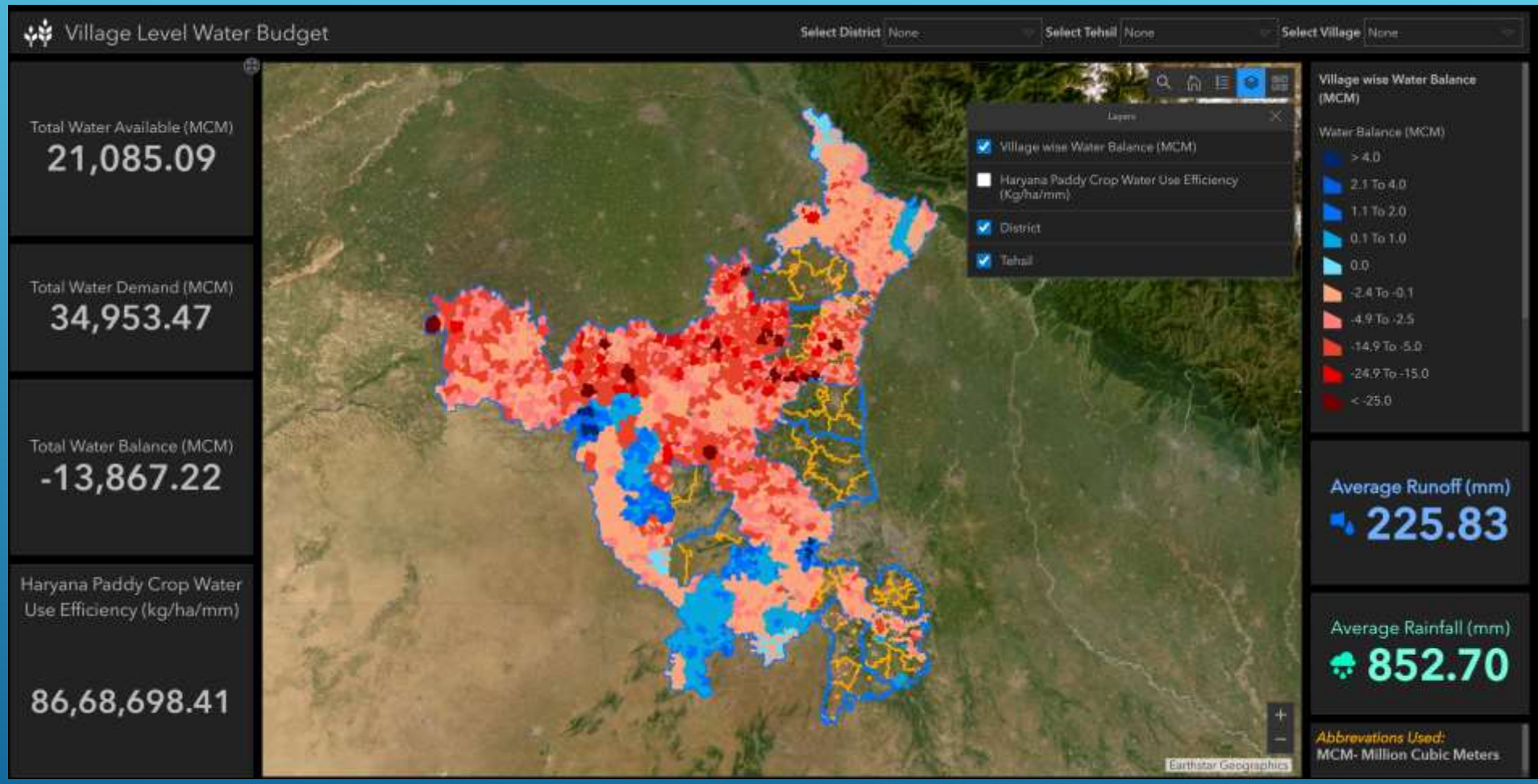
Objective: To assess village-level water availability, demand, and balance using rainfall–runoff analysis and crop water use efficiency for sustainable water resource planning.

Information:

- Total Water Availability
- Total Water Demand
- Total Water Balance
- Paddy Crop Water Efficiency
- Average Rainfall
- Average Runoff

Importance:

- Identify water balance
- Assess rainfall–runoff
- Identify surplus and deficit areas
- Sustainable agricultural and resource planning



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Block level crop planning

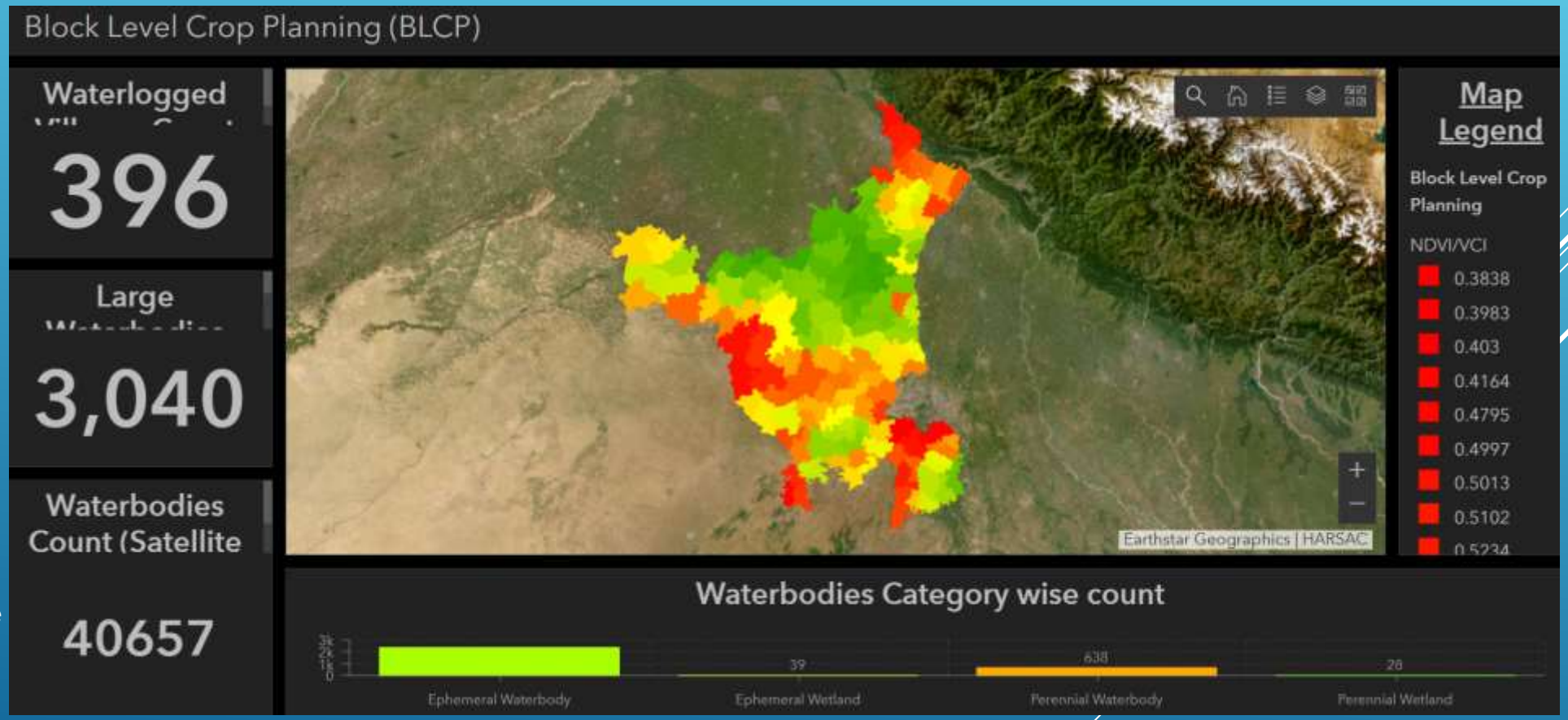
Objective: To assess Block level Crop.

Information:

- Crop Health
- Drought Pattern
- Water Availability
- Water Logging

Importance:

- Water Conservation
- Soil Conservation
- Crop Productivity
- Farmers Income increase



Portal Link : Block Level Crop Planning

Drought Management

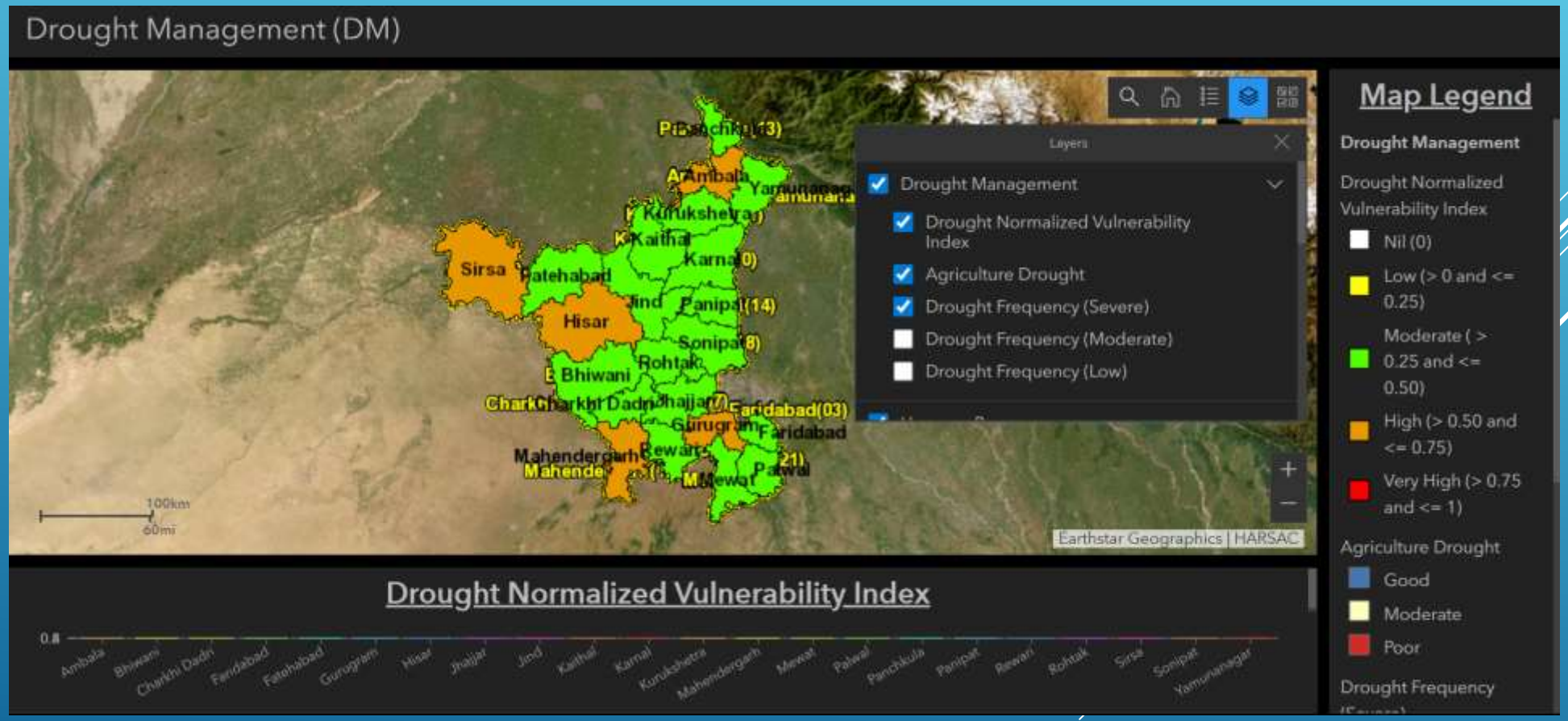
Objective: To assess Drought and make decisions on its management.

Information:

- Drought Distribution
- Drought Frequency
- Drought categories

Importance:

- Drought management
- Target beneficiaries
- Crop Insurance
- Crop Pattern Change



Portal Link : Block Level Crop Planning

Smart Grid Water Transfer

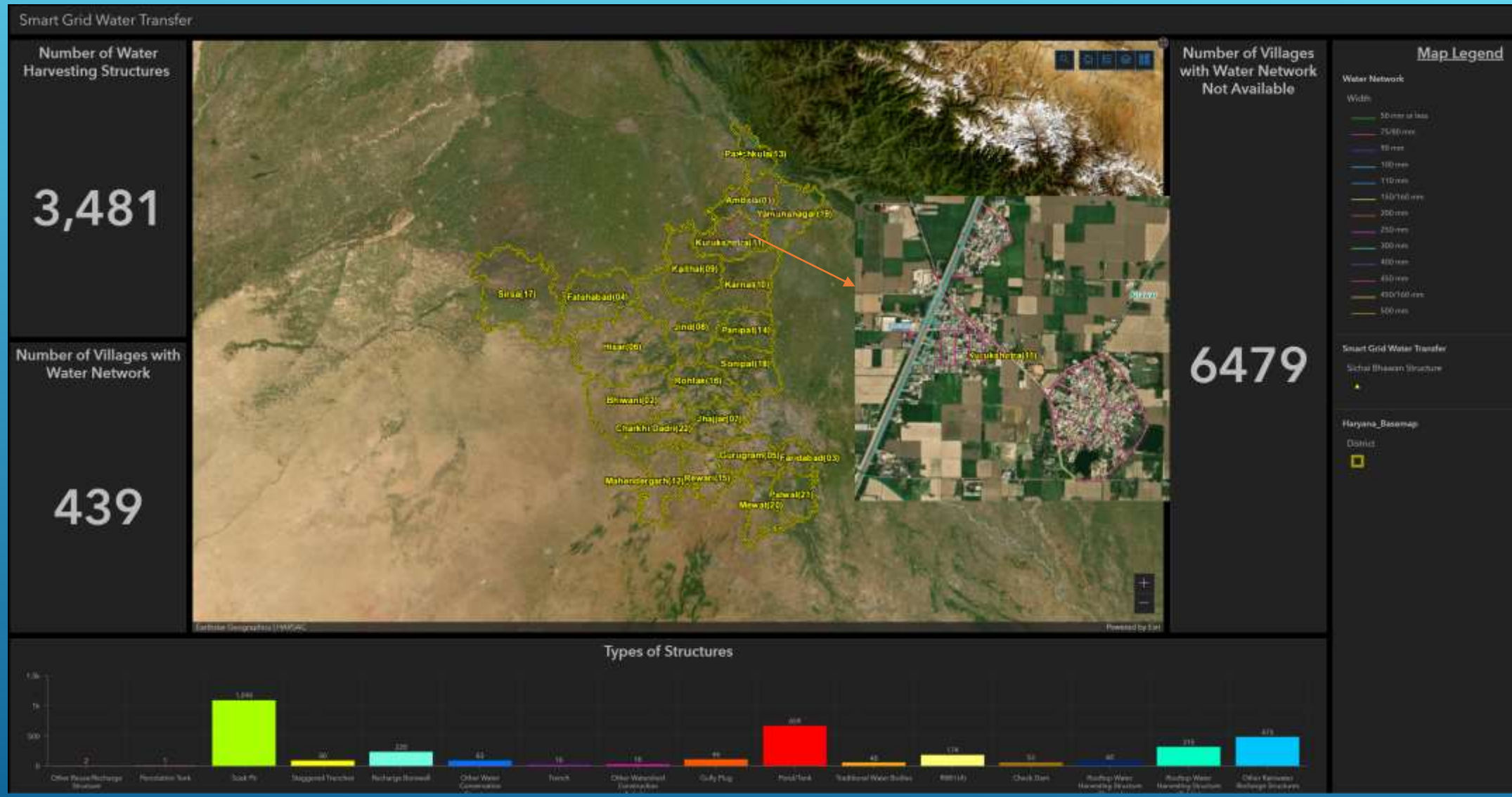
Objective: To develop a grid-based water network for the efficient transfer and distribution of water at the local level.

Information consists:

- Water availability
- Water networks
- Water sources

Importance:

- Smart grid-based network
- Efficient distributions
- Water demand management
- Enhanced water conservation



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Water Security Plan

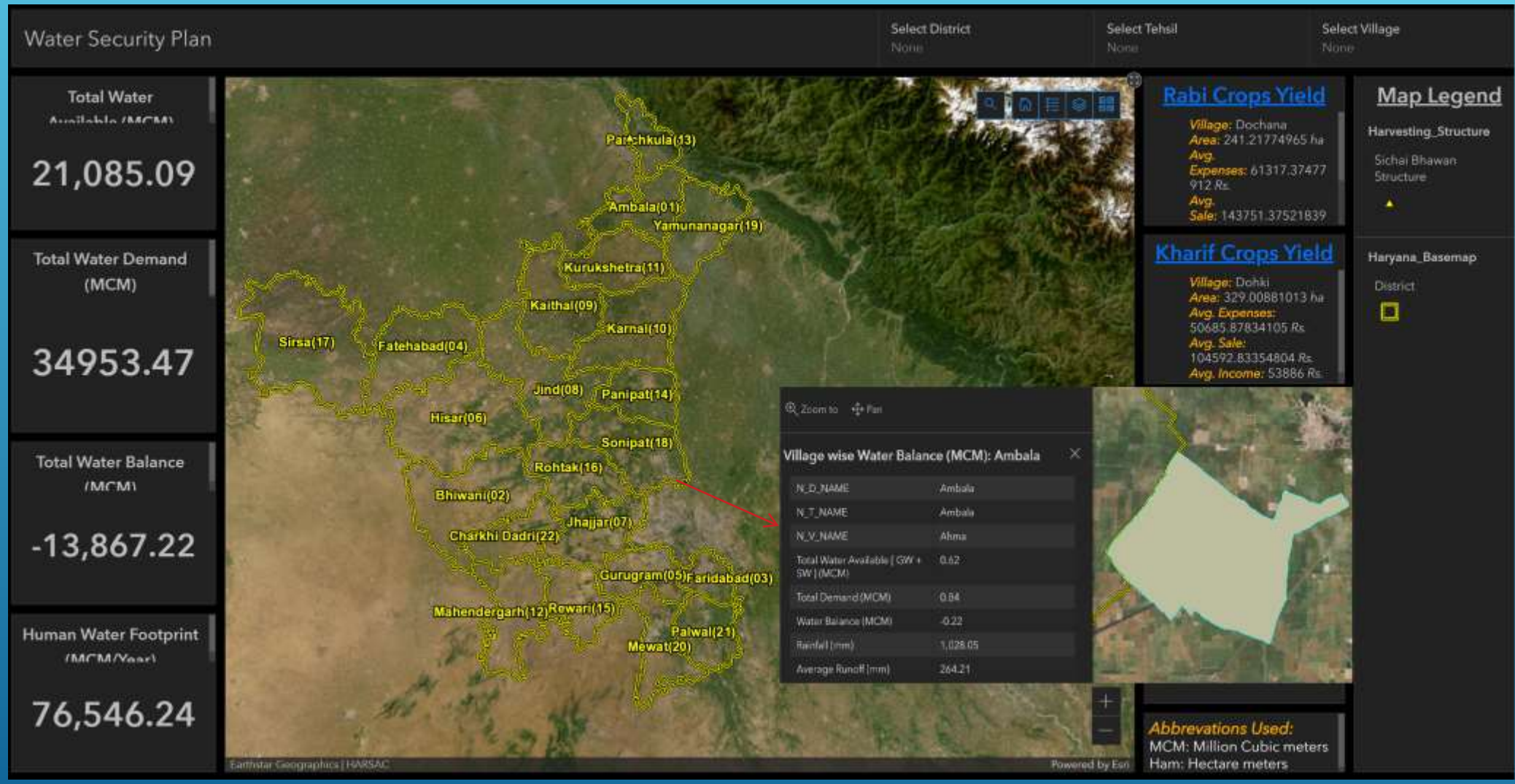
Objective: To secure water for the present and future at the local level through effective assessment and reliable information

Information consists:

- Water availability
- Water demand
- Water budget
- Irrigation expenses

Importance:

- Micro to macro level assessment
- Village to state level information
- Present to future water demand
- Efficient use of water
- Decision-making for development.



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Ground Water Information System (GWIS)

Haryana's **GWIS** delivers map-based groundwater insights and multi-source data integration for precise monitoring at district, tehsil, and village levels. It empowers all stakeholders with actionable information to track water stress and manage groundwater sustainably.

Purpose

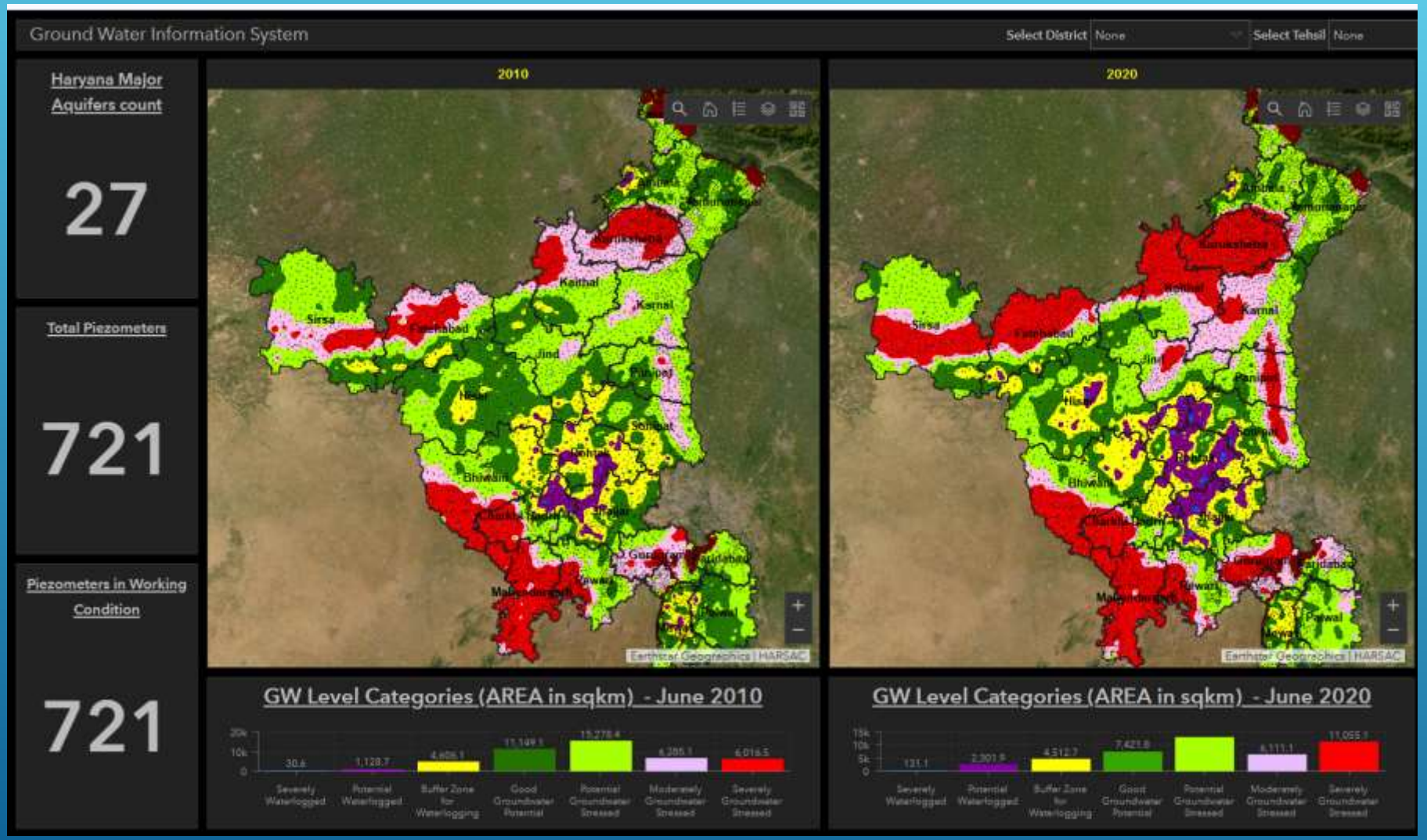
A comprehensive geospatial dashboard for monitoring and analysing ground water level

Data Sources

Integration of **IoT sensors** and ground-based **piezometer** measurements for comprehensive real-time analysis.

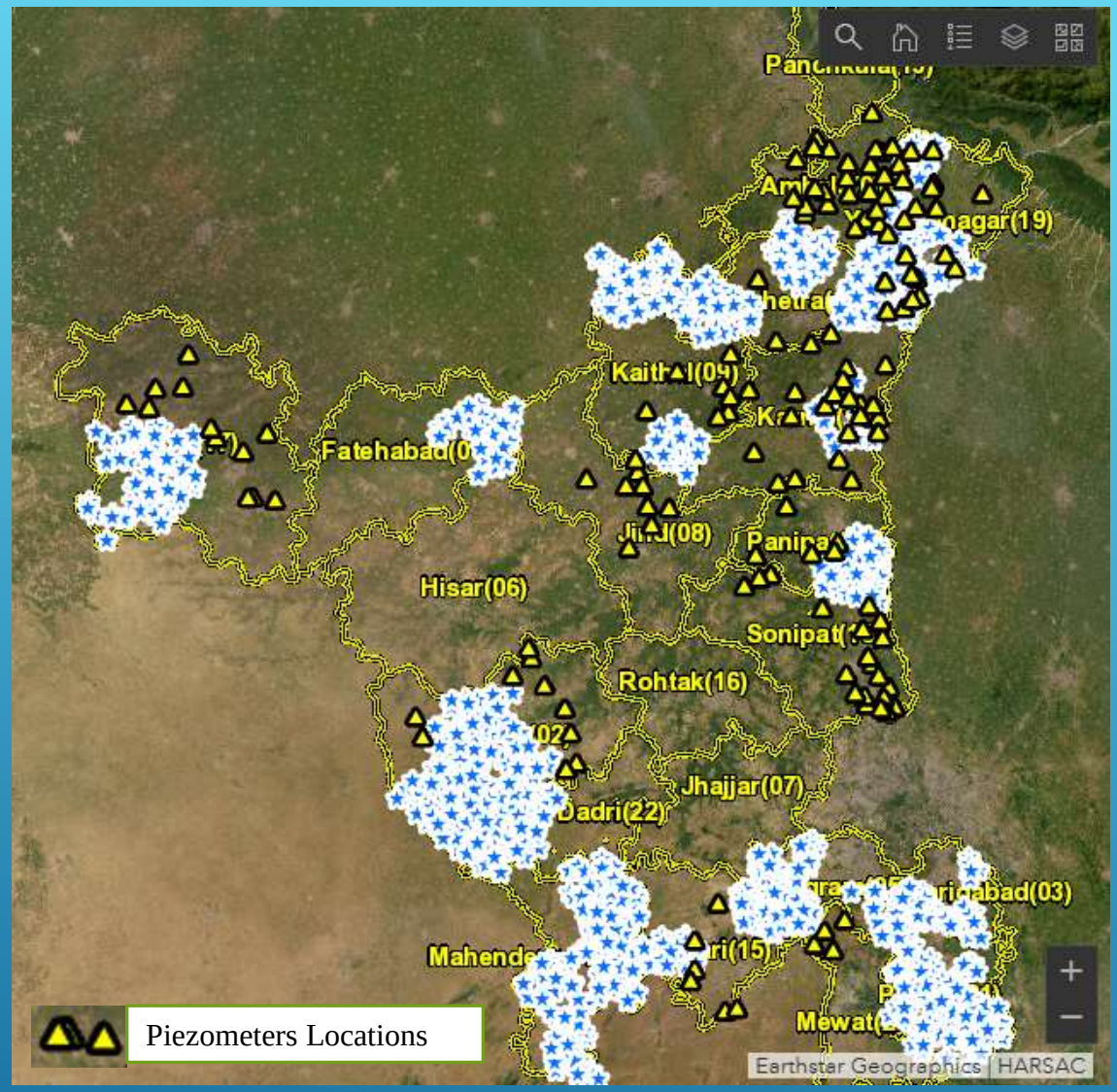
Coverage

A multi-level geographic filtering system that enables analysis at district, tehsil, and village of Haryana scales for precise monitoring.



Continue……

- Haryana has 721 active piezometers and 27 major aquifers mapped across the state.
- They provide continuous insights into groundwater levels, seasonal changes, and aquifer health.
- The system supports better planning, early warning of decline, and effective groundwater management at all administrative levels.



Application of GWIS:

- Water resource Management
- Agricultural Planning
- Early warning system
- Research and Analysis
- Public Awareness
- Policy Formulation

Portal Link: https://hsacggm.in/portal/apps/opsdashboard/index.html#/cf3b3c298c974ee6b5663f1d3c3c4d17

Haryana Pond Authority

POND CHARACTERIZATION & MONITORING

Select District: None | Select Tehsil: None | Select Village: None

Ponds/Waterbodies

40,657

Pond Types

- Natural :- 26427 (R - 25462 ; U - 965)
- Manmade :- 14230 (R - 13429 ; U - 801)

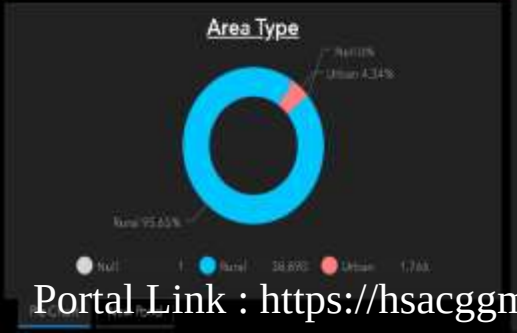
Canal Connected

Number of Ponds connected with canal :- 8352
(Govt. :- 6212 ; Private :- 2128 ; Others :- 12)

Ponds - Depth (meters) Categorization

- Where Pond Depth is <= 0.5 :- 4752 (Govt. :- 3290 ; Private :- 1441 ; Others :- 21)
- Where Pond Depth is > 0.5 & <= 2 :- 27117 (Govt. :- 21440 ; Private :- 5567 ; Others :- 110)
- Where Pond Depth is > 2 & <= 5 :- 6079 (Govt. :- 5228 ; Private :- 830 ; Others :- 21)
- Where Pond Depth is > 5 :- 2709 (Govt. :- 1799 ; Private :- 908 ; Others :- 2)

Area Type

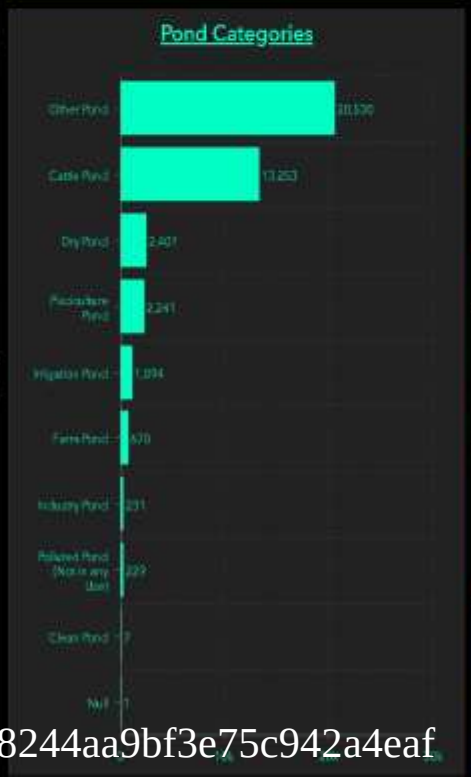


Graph of Actual & Max. Water Acreage in Ponds & Waterbodies (2022)

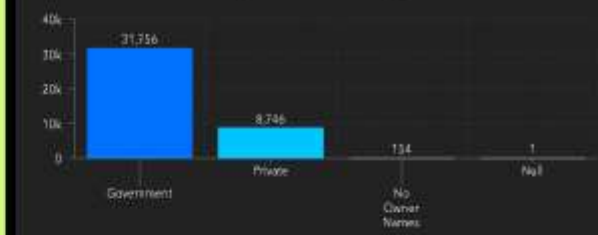
Ponds Along National Highways

- Ambala Delhi (NH-9) :- 68 (MM = 10 , Natural = 58)
- Ambala Hisar (NH-152) :- 66 (MM = 22 , Natural = 44)
- Delhi Sirsa (NH-9) :- 102 (MM = 58 , Natural = 44)
- Panipat Rohtak (NH-709) :- 58 (MM = 24 , Natural = 34)
- Kaithal Narnaul (NH-152D) :- 19 (MM = 4 , Natural = 15)
- Delhi Rewari (NH-8) :- 15 (MM = 3 , Natural = 12)
- Panchkula Yamunanagar (NH-344) :- 14 (MM = 2 , Natural = 12)

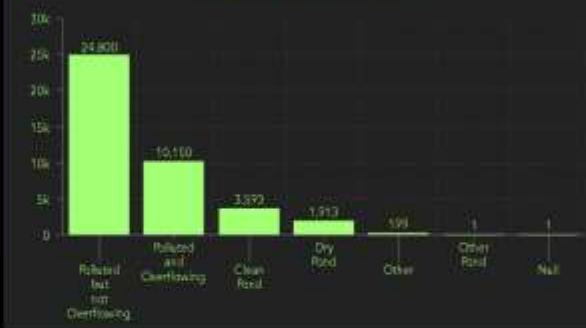
Pond Categories



Pond Ownership



Present Condition of Pond



Total Number of Villages :- 6918
Number of Villages having Ponds :- 6521
Number of Villages having no Ponds :- 397
Number of Ponds in Forest Area :- 856

Area based Pond Classification

Ponds having Area <= 0.5 Acre :- 14636
(Govt. :- 9996 ; Private :- 4588 ; Others :- 54)

Ponds having Area > 0.5 Acre <= 24 Acre :- 25899
(Govt. :- 21691 ; Private :- 4108 ; Others :- 100)

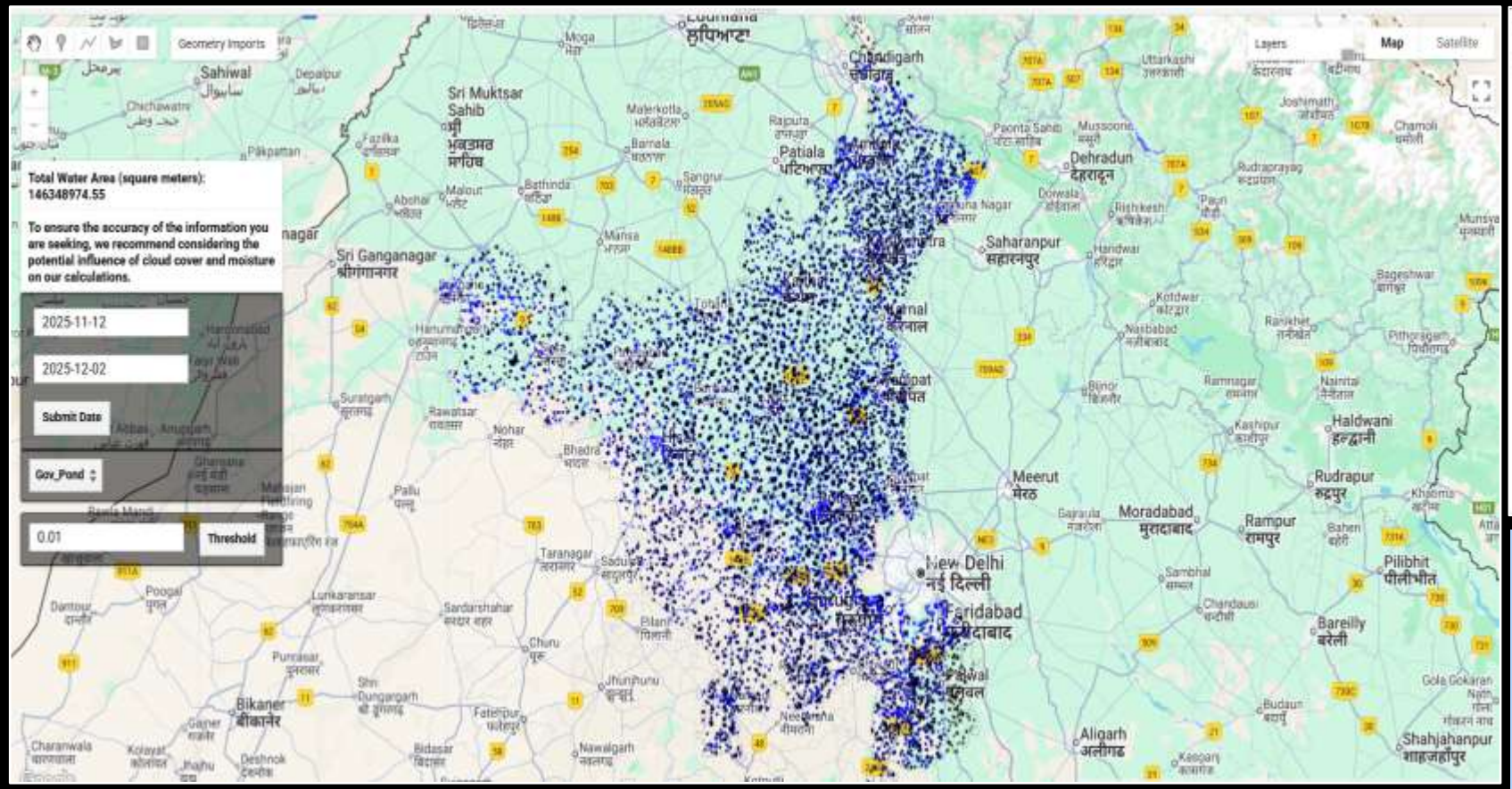
Ponds having Area > 24 Acres :- 122
(Govt. :- 70 ; Private :- 52 ; Others :- 0)

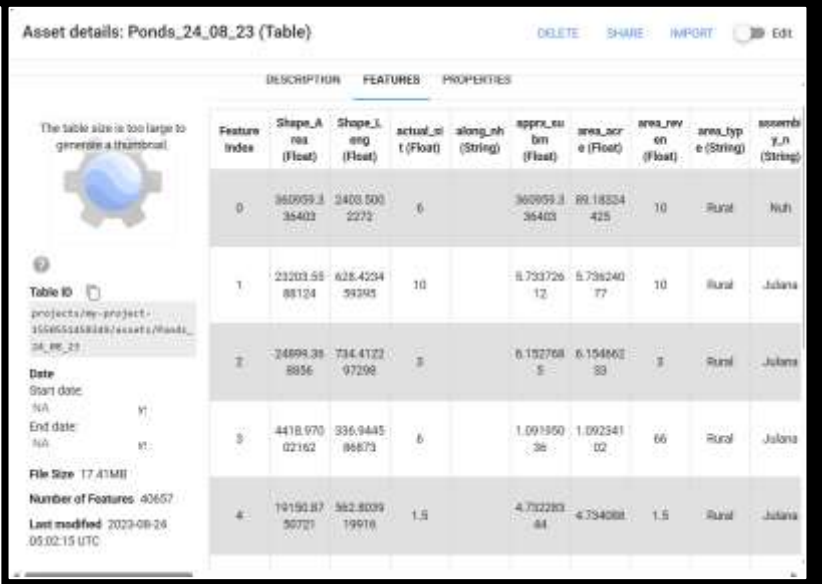
Affected from Garbage/Dung

Number of Ponds affected from Garbage/Dung :- 12815 (Govt :- 11474 ; Private :- 1273 ; Others :- 68)

Portal Link : https://hsacggm.in/portal/apps/opsdashboard/index.html#/8c6001b2b38244aa9bf3e75c942a4eaf

RTWA- Real Time Water Analysis





- **Major ponds** 40657 identified
- **Spatial resolution:** 10 meters
- **Date range:** Nov-Dec 2025

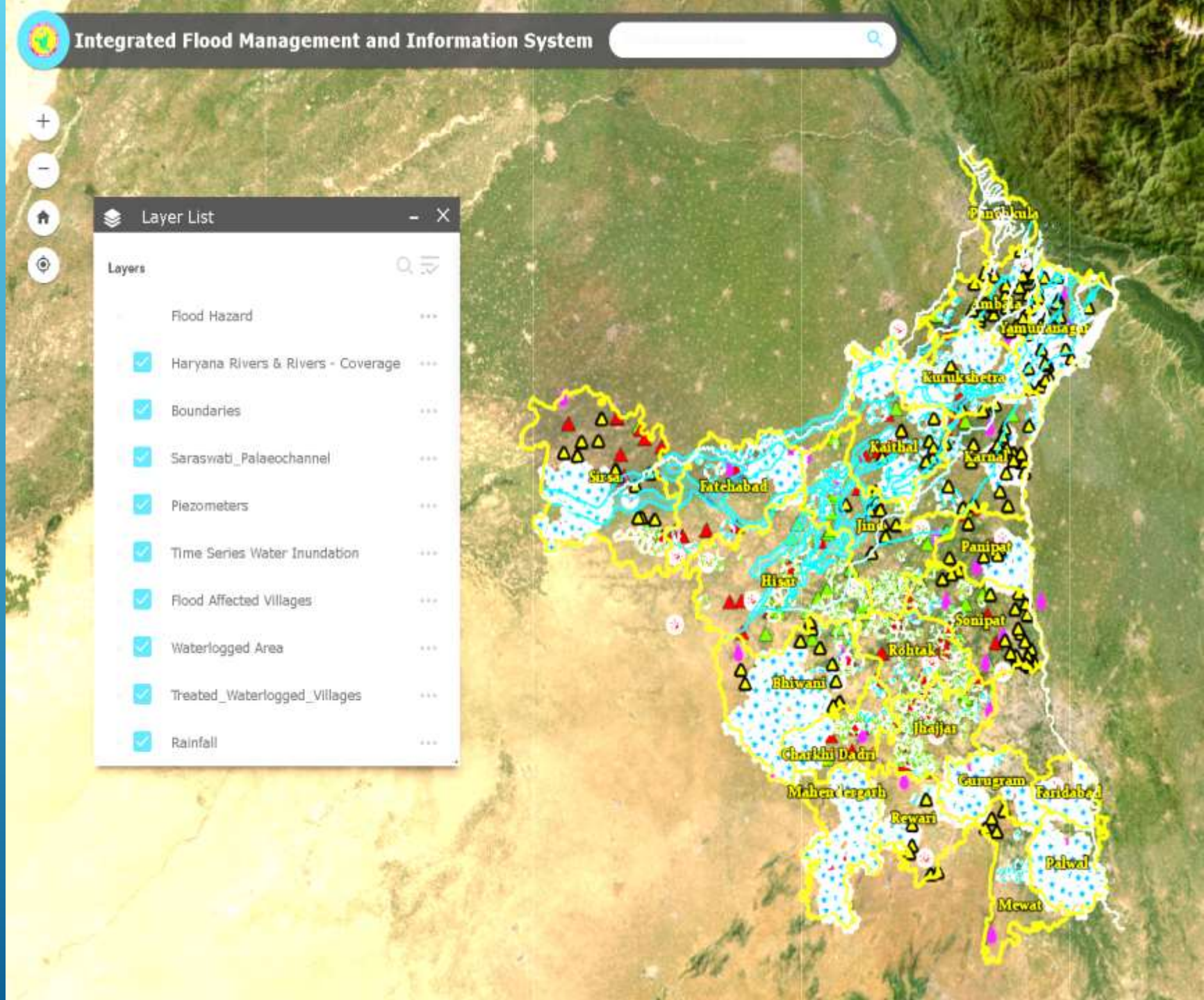
- Dynamic date range selection
- Custom Threshold updates
- Real-time map updates
- Multi-band compositing
- Geometry import capability

https://hsac.org.in/pond_acreage/

- Shows Haryana Rivers and Coverage
- Administrative Boundaries of Haryana
- Saraswati Paleochannel
- Piezometers (NHP- 145, Atal Bhujal - 994)
- Time series Water Inundation
- Flood Affected Villages includes flood depth(cm)
- Waterlogged and Low lying Area
- Treated Waterlogged Areas
- ARG & AWS Stations
- Microwatershed
- Topographic Layers (Slope, Aspect, Contour, DEM)
- Physiography (Soil Type, Texture)
- Assests (RTDAS, Canal, Ponds, Head, Aquifer, Drains)

Portal Link-

https://hsacggm.in/portal/apps/webappviewer/index.html?id=1f5aee1d341b4aff9bff5f4289f77a4d



Water Level and Discharge Dashboard

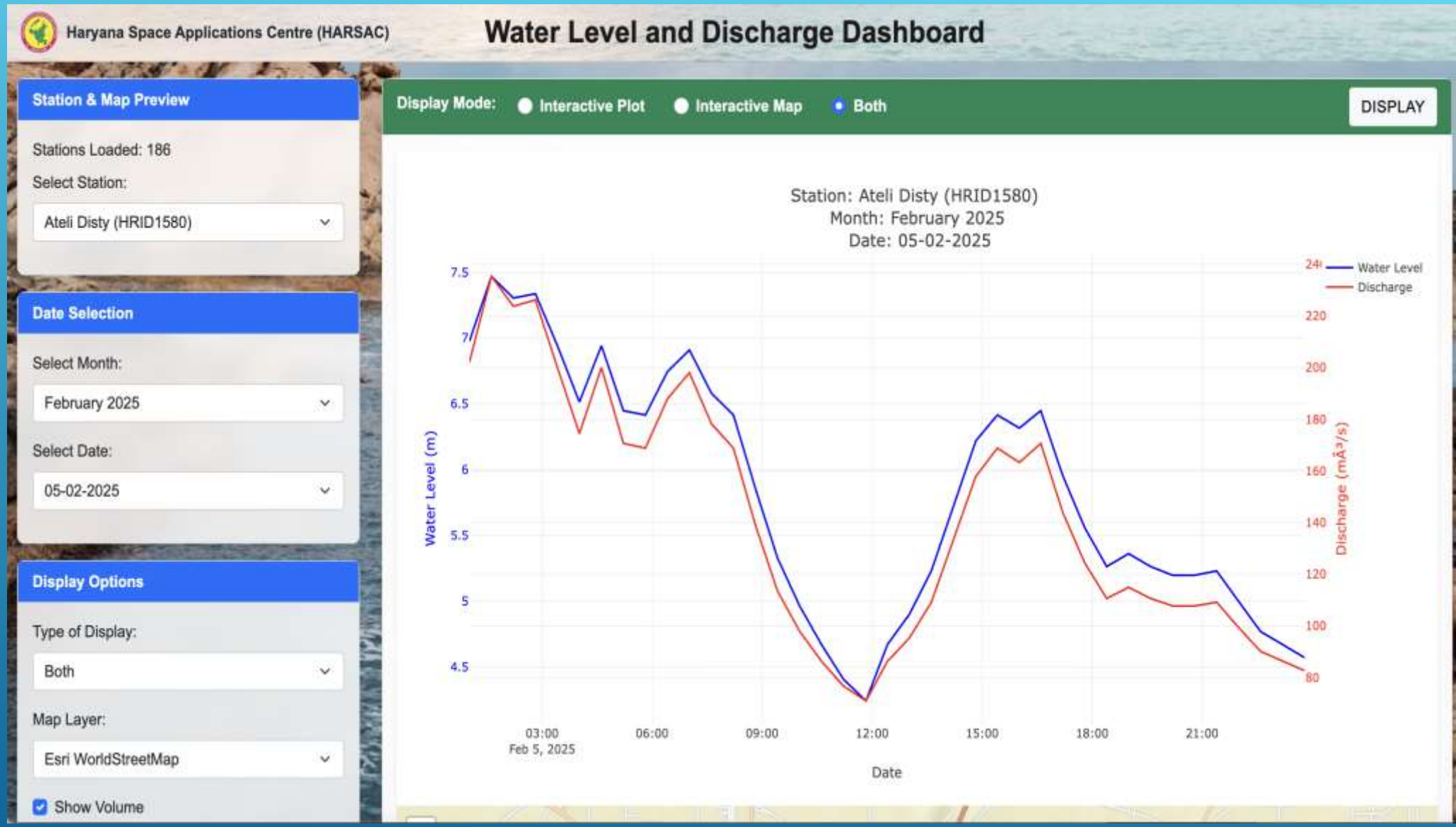
Objective: To assess and predict water level and discharge of Major Canals

Information consists:

- Discharge
- Water level (depth)

Purposes:

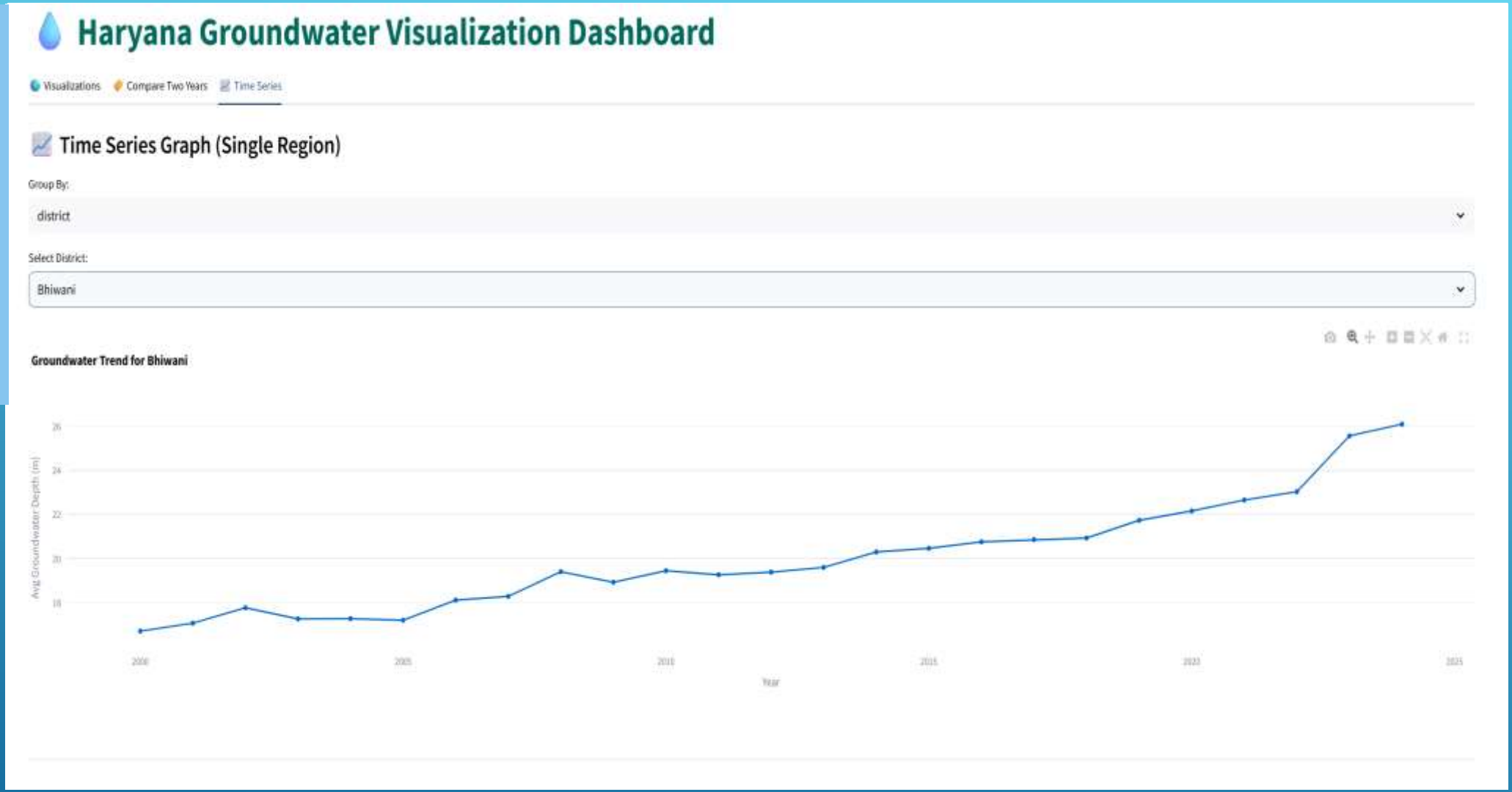
- Supports flood management
- Enhances drought preparedness
- Improves water allocation
- Guides irrigation planning
- Assists ecosystem protection



Portal Link : https://hsac.org.in/water_discharge_dashboard

URJA- Utility for Real-time Joint Analytics- A Groundwater visualization Dashboard

- ✓ Time series from 2000 to 2025
- ✓ District wise trends



Portal Link : https://hsac.org.in/urja/groundwater

Haryana Irrigation Performance Assessment

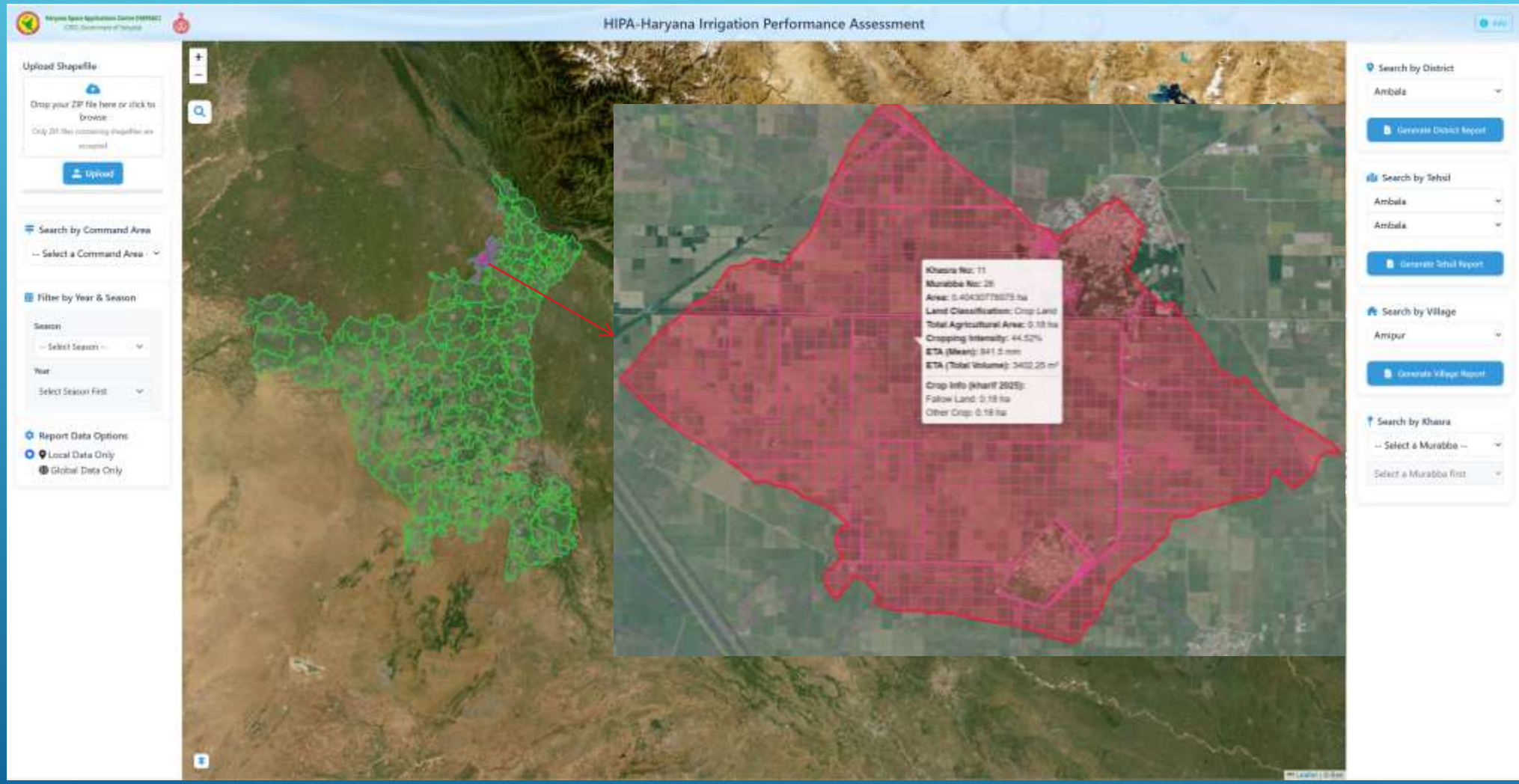
The Evapotranspiration-based Haryana Irrigation Performance Assessment at local level (Khasra level)

Information consists:

- LULC
- Crop distributions
- Water budget
- Climatic information
- Crop Biomass
- Water adequacy

Purposes:

- Crop distributions trends and patterns
- Water budget with crop requirement
- Yield prediction with climate



Portal Link : https://hsac.org.in/hipa

Digital Water Atlas, Haryana 2025

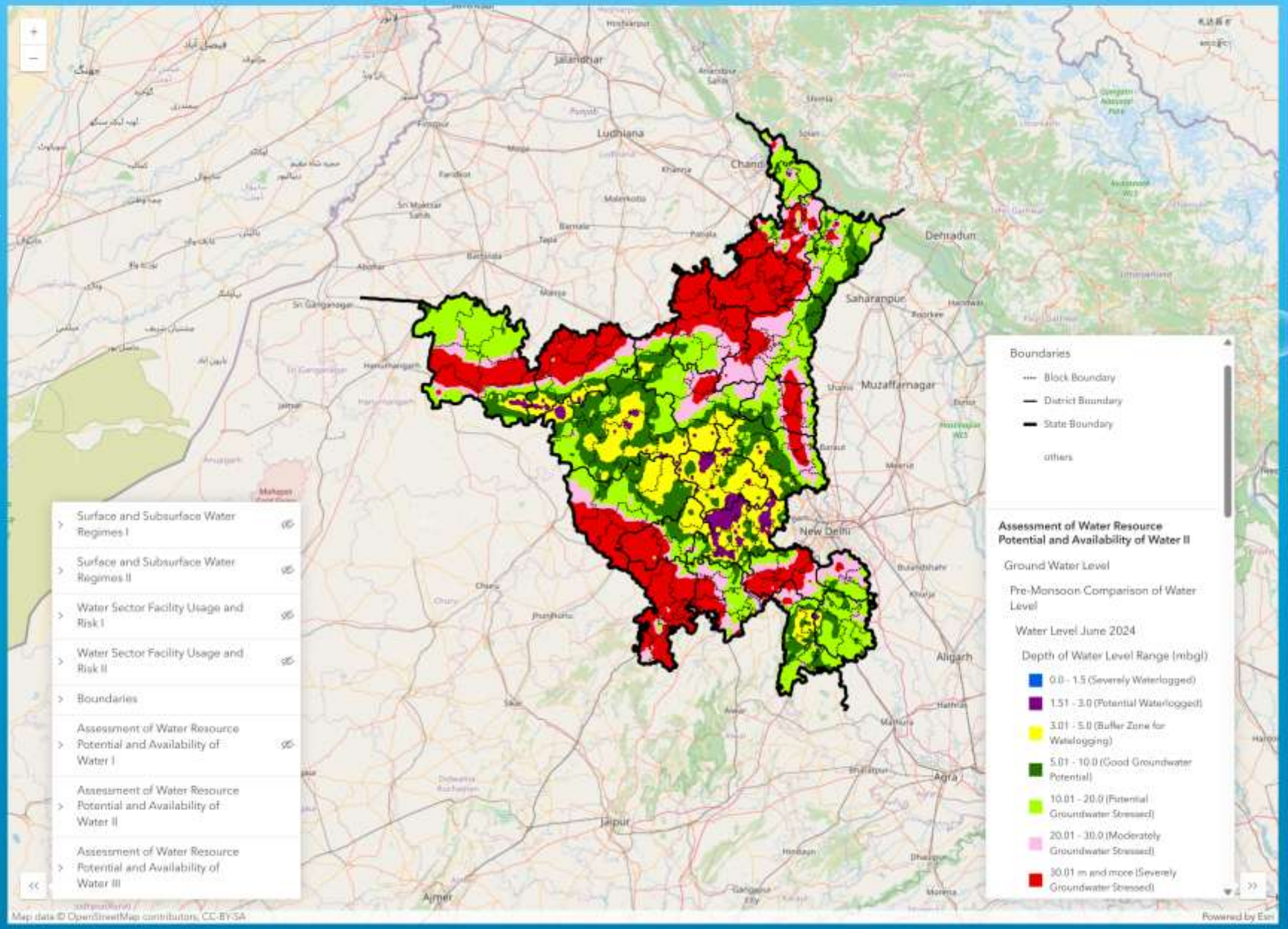
Information Consists of:

- ❑ Water regimes
- ❑ Groundwater levels
- ❑ Water usage and risk
- ❑ Water resource availability
- ❑ Water scarcity
- ❑ Hydrological features

Importance:

- ❑ Identify stress zones
- ❑ Support planning decisions
- ❑ Improve groundwater recharge
- ❑ Guide infrastructure development
- ❑ Enable sustainable management

Portal Link :
https://www.hsac.org.in/digital_water_atlas/



Thank You