



# *Artificial Recharge Structure Module*

**NATIONAL WATER INFORMATICS CENTRE**

Department of Water Resources, RD & GR

Ministry of Water Resources

Government of India

## Conceptualisation

- Increase demand → Over exploitation of Groundwater
  - Construction of recharge structures
- CGWB prepared a “ Master Plan for Artificial Recharge to Ground Water in India” in 2013.
- Consequently, Inter-Ministerial committee submitted new report in 2020.
  - Observation – consolidated database is not readily available at one place.
- Decision /Objectives
  - To coordinate, collect and collate data on water conservation
  - Update database on regular interval along with functional status





## Artificial Recharge Structure Module

*A module for uploading all artificial recharge structures data into the India-WRIS platform.*

*Provides not only a bird's eye view and status of the water conservation/augmentation work carried out by the State but will also help greatly in planning and implementation of the water conservation and recharge schemes in more coherent and scientific manner.*



## Functionality

### 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
3. Data Viewer Dashboard
  1. Information will be disseminated through India WRIS portal for public
  2. Generate reports on multiple themes
4. Mobile App

## Development Phases

- Bulk Data Entry through file transfer by NWIC
- Data Visualization
- Report Downloads

### Phase I

- Data Entry through Authorized login
- Editing Facility
- Beta-Version of Mobile App

### Phase II

- Mobile App (available at Google Play store)
- User Management for Data Entry & Validation

### Phase III





India Water Resources Information System

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Map Sat Hyb Ter

**Data Download**  
India WRIS offers a download facility v  
existing data on WRIS layers using the

- Surface Water +
- Ground Water -**
  - GW Exploration +
  - Water Level Behaviour +
  - Ground Water Resource Estimation
  - Ground Water Prospects Study (2011)
  - Artificial Recharge Structure Viewer**
  - Ground Water Quality
- Land Resources +
- Hydro-meteorological +
- Allied Themes +
- Projects +

Customized maps and overlay

View More

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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

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## Agencies

- ☐ Central govt.
- ☐ State govt.
- ☐ NGOs
- ☐ Water User Associations
- ☐ Others

Artificial Recharge Structure

# 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**

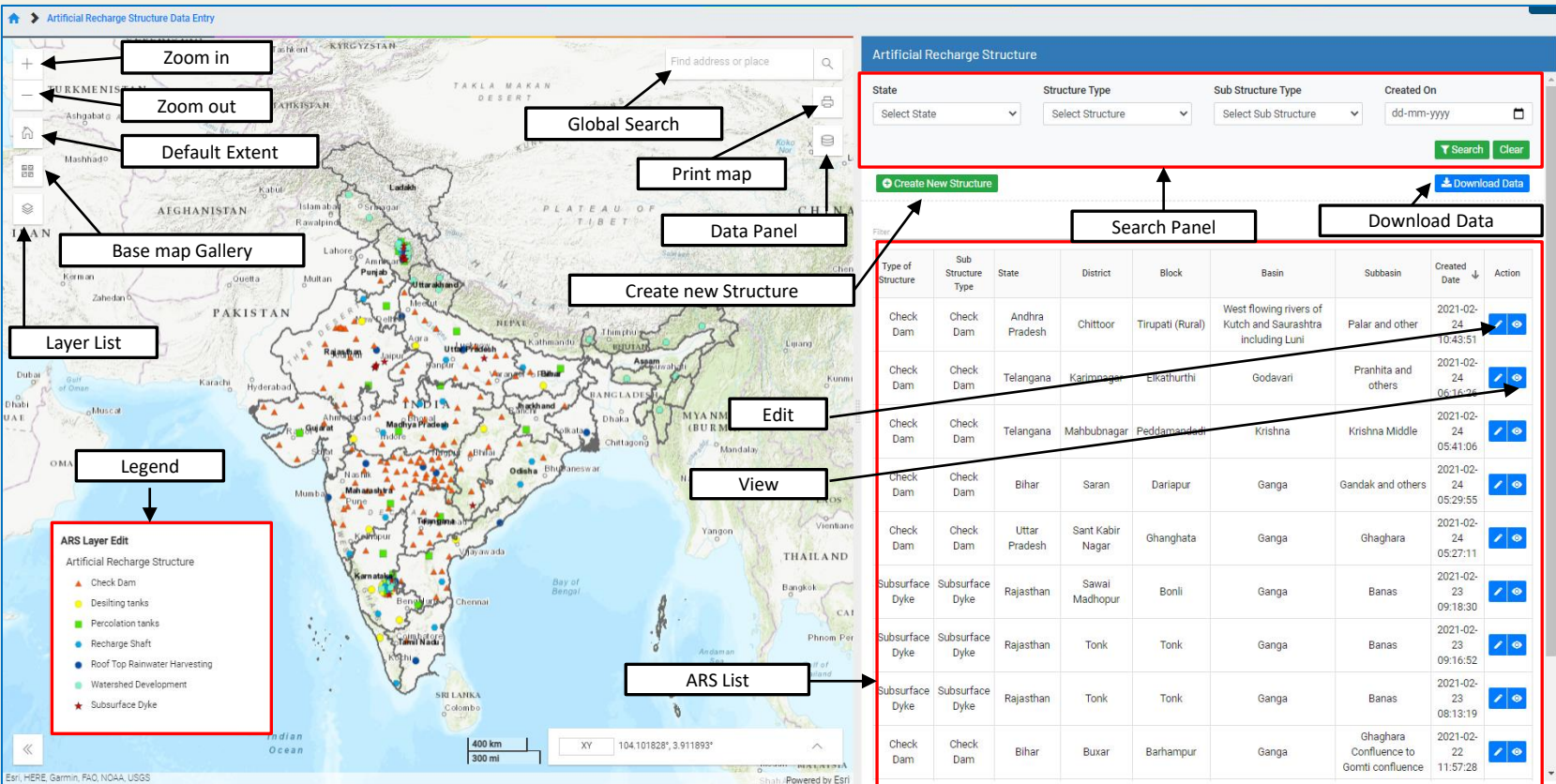
Sign in

Please sign in to access the item on <https://gis.indiawris.gov.in/portal> (Item)

Username:  
\*\*\*\*\*

Password:  
\*\*\*\*\*

OK Cancel





# 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’

Artificial Recharge Structure

Primary Data

Type of Structure

Check Dam

Sub Type of Structure

Check Dam

Latitude (Degree Decimal)

Latitude..

Longitude (Degree Decimal)

Longitude

Plot Point

Please click on map to get accurate lat/long for your point

Upload

File:

Choose File

No file chosen

State\*

State

District\*

District

Tehsil/block\*

Location Type (Urban/Rural)

URBAN

City Name \*

City name..

Address

Address..

Pin\*

Pin Code

Basin Name\*

Name of Basin..

Sub Basin Name\*

Name of Sub Basin..

Watershed Code\*

Watershed Code

Structure Code\*

Structure code

Next ➔
Close

### ---Part B

Secondary field are for ‘structure details’ such as like width, height, storage capacity etc. [D:\data collection sheet.xlsx](#)

Artificial Recharge Structure

Secondary Data

Type of Agency\*

CENTRAL

Name of Agency/Owner\*

Name of Agency..

Source of Funding (Name of the scheme)\*

Drought Prone Areas Programme (DPAP)

Height of Structure (Meter)

Height of structure..

Length of Structure (Meter)

Length of structure..

Storage Capacity (Cub.Meter) \*

Storage capacity..

Functional Status (Existing/Closed)

EXISTING

Expenditure (Rupees)\*

Expenditure..

Year of Completion (YYYY)\*

Year of completion..

Month\*

-Select Month-

Prev
Save
Close





# ARS – Data Entry

## Edit existing feature–

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

Artificial Recharge Structure

Primary Data

Type of Structure

Check Dam

Sub Type of Structure

Check Dam

Latitude (Degree Decimal)

13.576

Longitude (Degree Decimal)

79.377

Upload

File: Choose File No file chosen  
Image Not Available

State\*

Andhra Pradesh

District\*

Chittoor

Tehsil/block\*

Tirupati (Rural)

Location Type (Urban/Rural)

URBAN

City Name \*

Chittor

Address

Pahadganj

Pin\*

2232323

Basin Name\*

West flowing rivers of Kutch and Saurashtra including Luni

Sub Basin Name\*

Palar and other

Watershed Code\*

C18PAL39

Structure Code\*

APC18PAL39A10001

Next →

✕ Close

Artificial Recharge Structure

Secondary Data

Type of Agency\*

CENTRAL

Name of Agency/Owner\*

INSTITUTION 3

Source of Funding (Name of the scheme)\*

Drought Prone Areas Programme (DPAP)

Height of Structure (Meter)

3

Length of Structure (Meter)

22

Storage Capacity (Cub.Meter) \*

22

Functional Status (Existing/Closed)

EXISTING

Expenditure (Rupees)\*

120000

Year of Completion (YYYY)\*

2021

Month\*

JAN

← Prev

Save

✕ Close

# ARS Types and Sub Types



**CHECK DAMS**

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



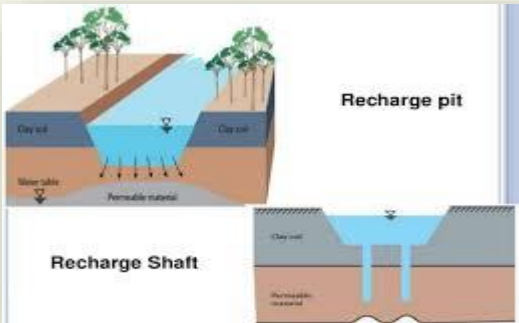
**ROOF TOP RAINWATER HARVESTING**

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



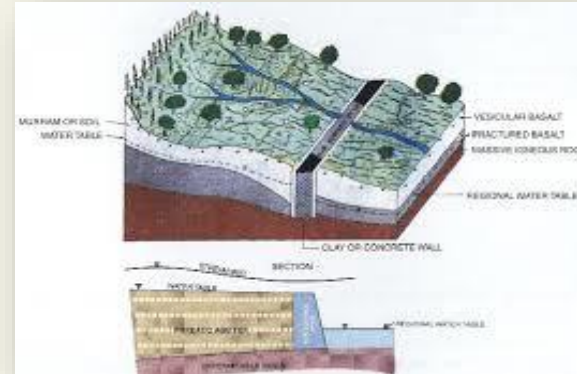
**RECHARGE SHAFT**

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**

**Springshed Development/Watershed Development**

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

# 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																						

Check Dam

Recharge Shaft

Roof top Rainwater harvesting

Percolation

Desilting tanks

Subsurface Dyke

Watershed Development

+

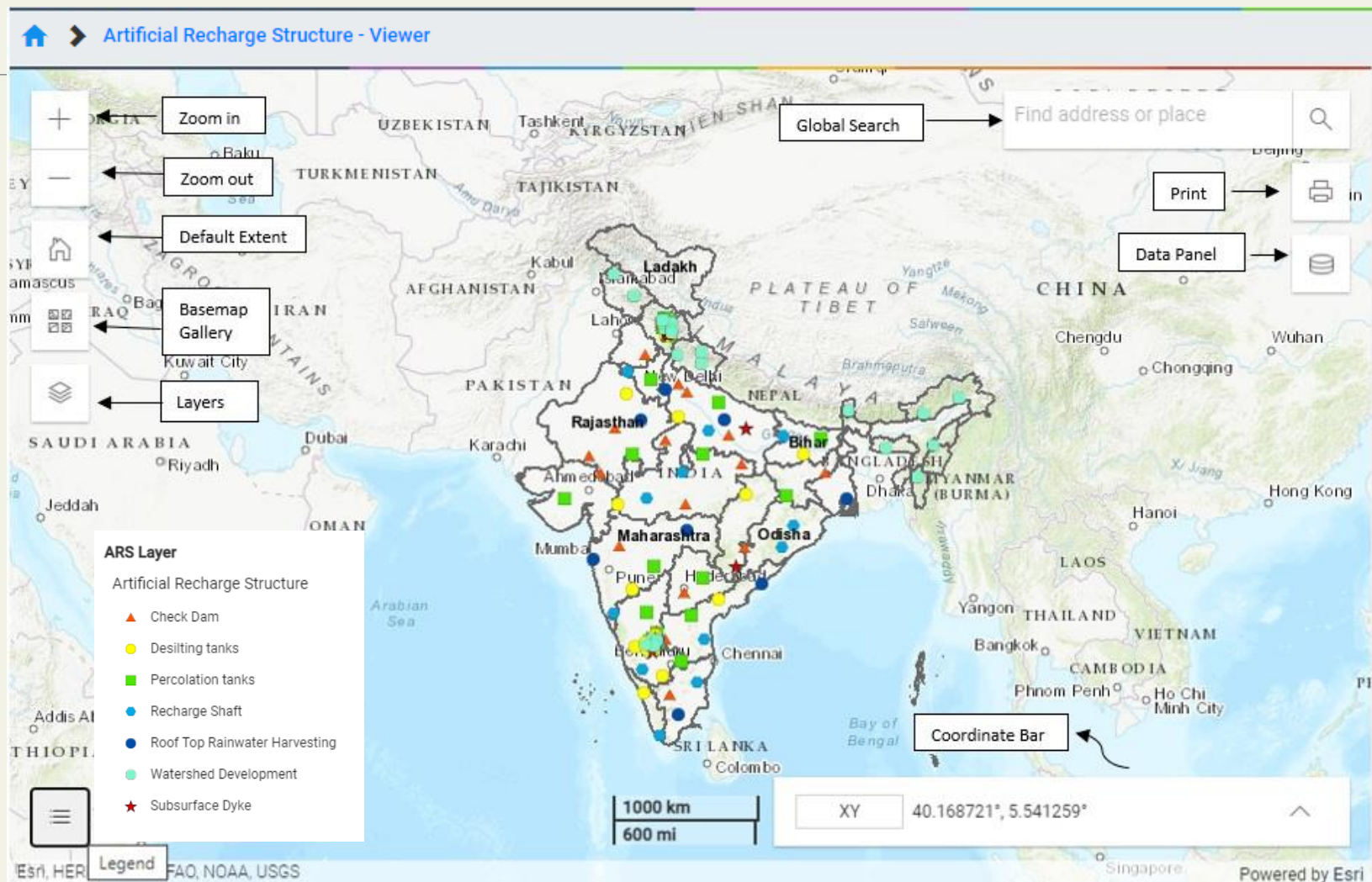


# ARS – Viewer

## Introduction

### VIEWER module

- Provides holistic picture of the existing artificial recharge structures in a structured manner.
- User can view/download the data through map or in the form of tables.



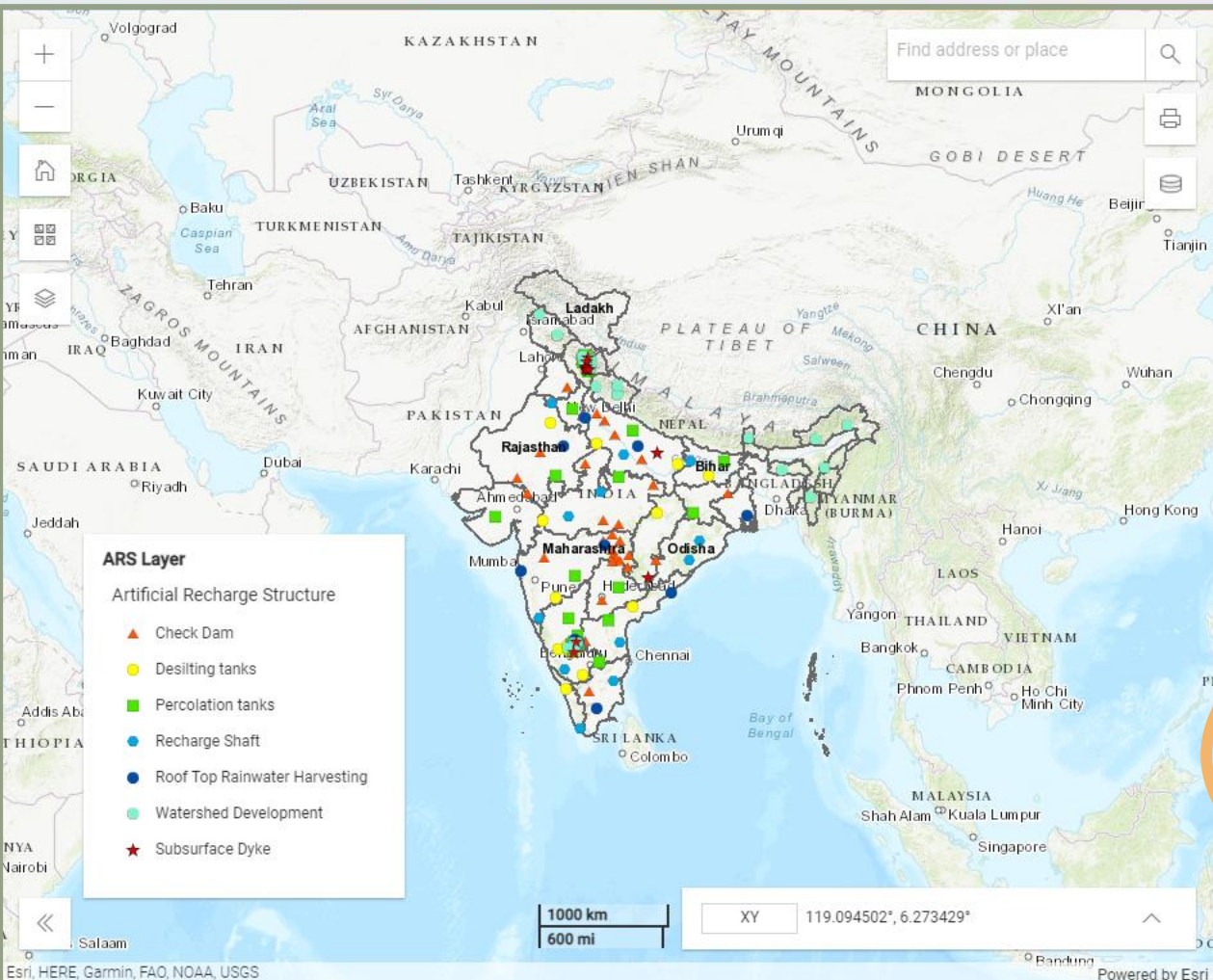


## Map Panel



## Data Panel

Artificial Recharge Structure - Viewer



### Artificial Recharge Structure

☒ Summary View

☐ Report Download

Boundary Wise Selection

Administrative Boundary

Type of Structure

All Structure Types

Sub Type of Structure

- Select Sub Type of Structure -

State

All States

District

- Select District -

Block

- Select Block -

Download Data

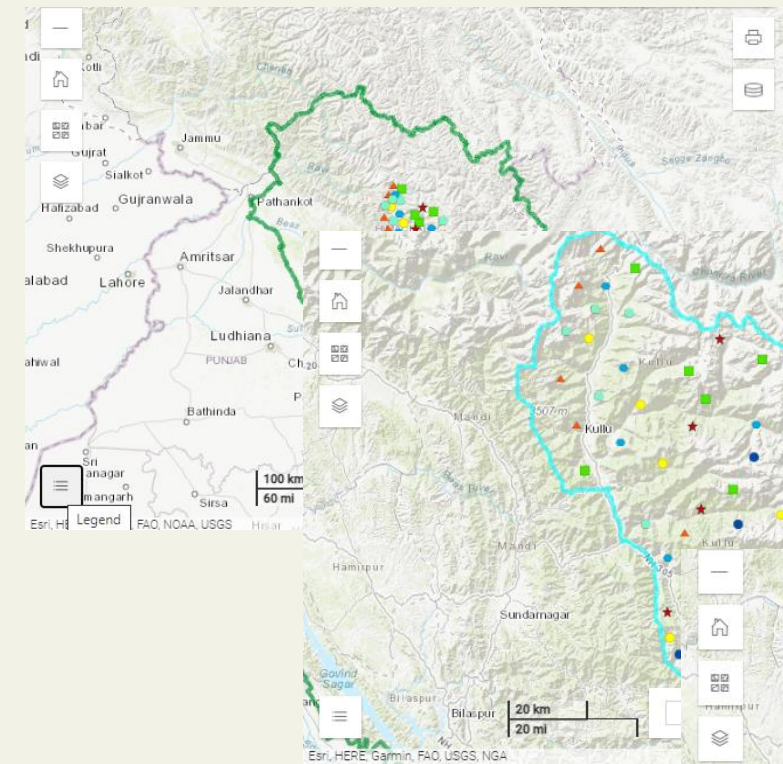
Clear

### Summary

Sr No	State Name	Count	Storage Capacity (Cub. Meter)	Total Expenditure (Rupees)
1	Andhra Pradesh	5	18,360	12,60,000
2	Arunachal Pradesh	2	3,700	4,70,000
3	Bihar	3	12,670	8,50,000
4	Chhattisgarh	2	2,383	5,80,000
5	Delhi	1	1,088	2,10,000
6	Gujarat	2	3,748	5,20,000
7	Haryana	2	14,600	5,60,000
8	Himachal Pradesh	52	1,46,512	81,20,000

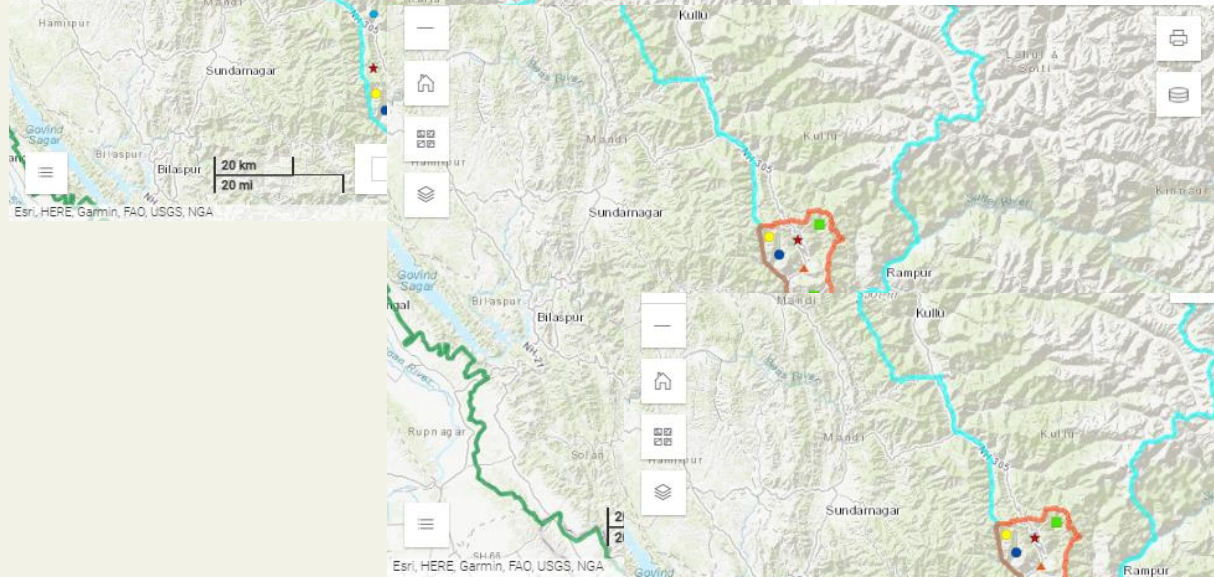
Artificial Recharge Structure





Summary				
Sr No	District Name	Count	Storage Capacity (Cub. Meter)	Total Expenditure (Rupees)
1	Kullu	52	1,46,512	81,20,000

Summary				
Sr No	Block Name	Count	Storage Capacity (Cub. Meter)	Total Expenditure (Rupees)
1	Ani	6	18,088	5,10,000
2	Banjar	10	25,548	13,90,000
3	Kullu	18	61,718	28,40,000
4	Manali	8	22,670	10,00,000
5	Nermand	7	14,338	16,00,000
6	Sainj	3	4,150	7,80,000



Summary					
Sr No	Structure Name	Structure Type	Count	Storage Capacity (Cub. Meter)	Total Expenditure (Rupees)
1	Check Dam	Gully Plug	1	1,830	70,000
2	Desilting tanks	Desilting Tanks	1	1,120	70,000
3	Percolation tanks	Percolation Tank	1	6,450	1,20,000

[Download Data](#) [Clear](#)

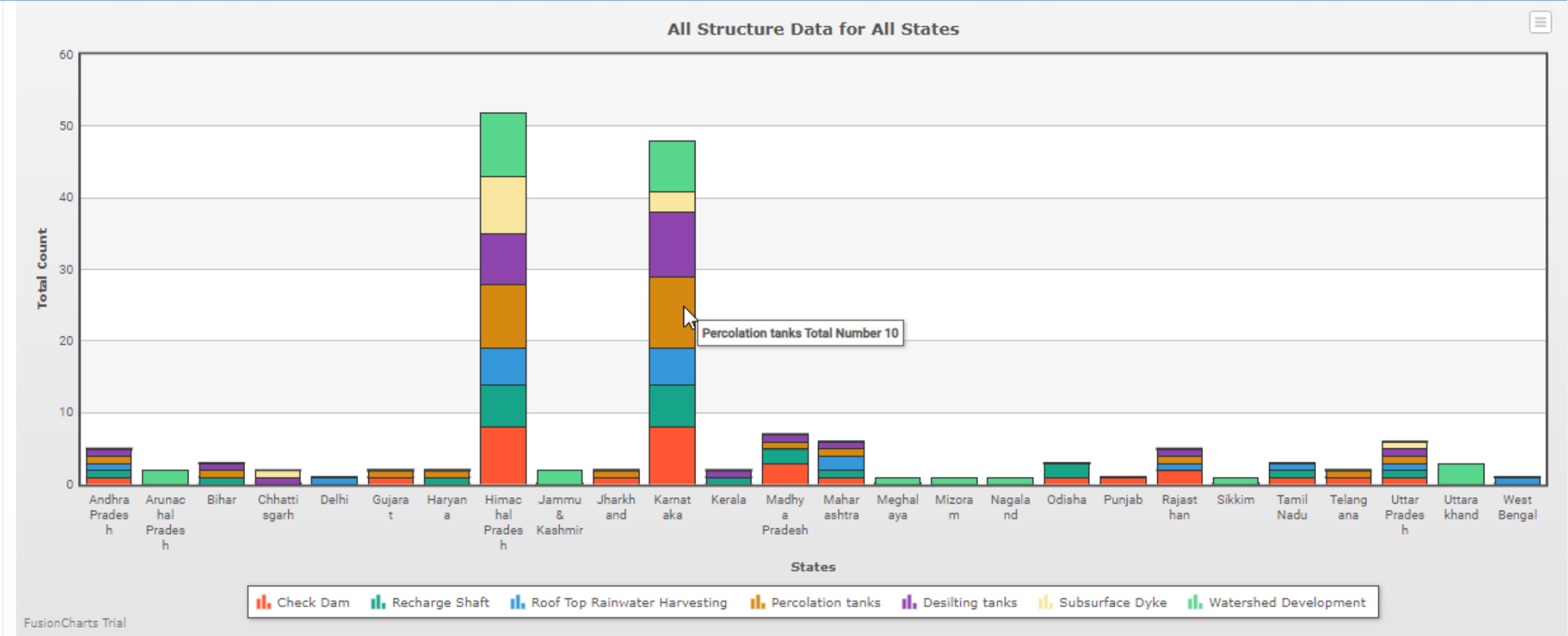
Summary					
Sr No	Structure Type	Sub Structure Type	Storage Capacity (Cub. Meter)	Total Expenditure (Rupees)	Structure Code
1	Roof Top Rainwater Harvesting	RTRWH area > 1000 sq. m.	1088	120000	HPA01SUU25C4

Chart View



# Chart View

## Artificial Recharge Structure



# Report Download

- Pre-generated Reports are available for easy and quick access of the information
- 9 types of reports

☐ Summary View
 ☒ Report Download

Select Report Type

-Select the Required Report-

-Select the Required Report-

Administrative Unit Wise

Hydrological Basin Wise

Year Of Completion

Agency Wise

Artificial Recharge Structure Type

SrNo	Agency Type	Name Of Agency/Owner	State	Type Of Structure	Subtype Of Structure	No Of Structures	Maximum Storage Capacity (Cub. Meter)	Expenditure (Rupees)
1	Central	CENTRAL 2	Rajasthan	Check Dam	Check Dam	5	7,113.1	1,580,000
2	Central	CENTRAL 5	Maharashtra	Check Dam	Cement Plug	18	44,876	3,140,000
3	Central	CENTRAL 3	Madhya Pradesh	Check Dam	Check Dam with associated structures	5	20,510	1,000,000
4	Central	CENTRAL 4	Maharashtra	Recharge Shaft	Recharge Shaft & Recharge Trench	18	69,068	3,840,000
5	Central	CENTRAL 1	Bihar	Recharge Shaft	Recharge well (Tube well)	2	7,480	450,000
6	Central	CENTRAL 6	Rajasthan	Roof Top Rainwater Harvesting	RTRWH area 300 to 1000 sq. m.	14	33,970	3,340,000

This is system generated excel sheet.

Artificial Recharge Structure

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### Live Telemetry

The stations established by the Central Water Commission, the Central Groundwater Board and the State agencies throughout the country measure important hydrological and meteorological parameters and provide data on a real time basis for immediate action and planning.

[View More](#)



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For data sharing and any other query.

# THANK YOU