



# *Artificial Recharge Structure Module*

**NATIONAL WATER INFORMATICS CENTRE**

Department of Water Resources, RD & GR

Ministry of Water Resources

Government of India

## Conceptualisation

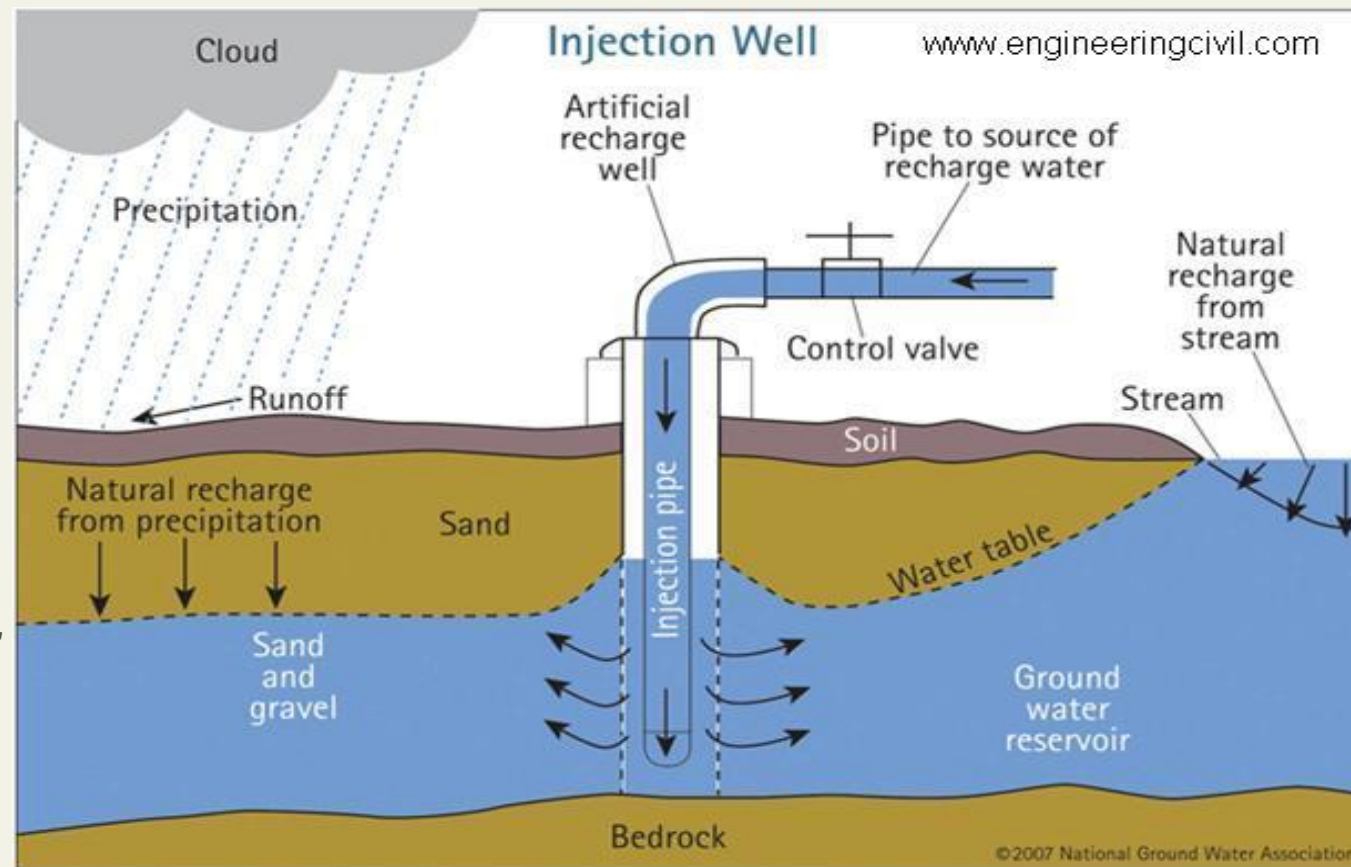
- Increase demand → Over exploitation of Groundwater
  - Construction of recharge structures
- CGWB prepared a “ Master Plan for Artificial Recharge to Ground Water in India” in 2013.
- Consequently, Inter-Ministerial committee submitted new report in 2020.
  - Observation – consolidated database is 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 also help greatly in planning and implementation of the water conservation and recharge schemes in more coherent and scientific manner.*

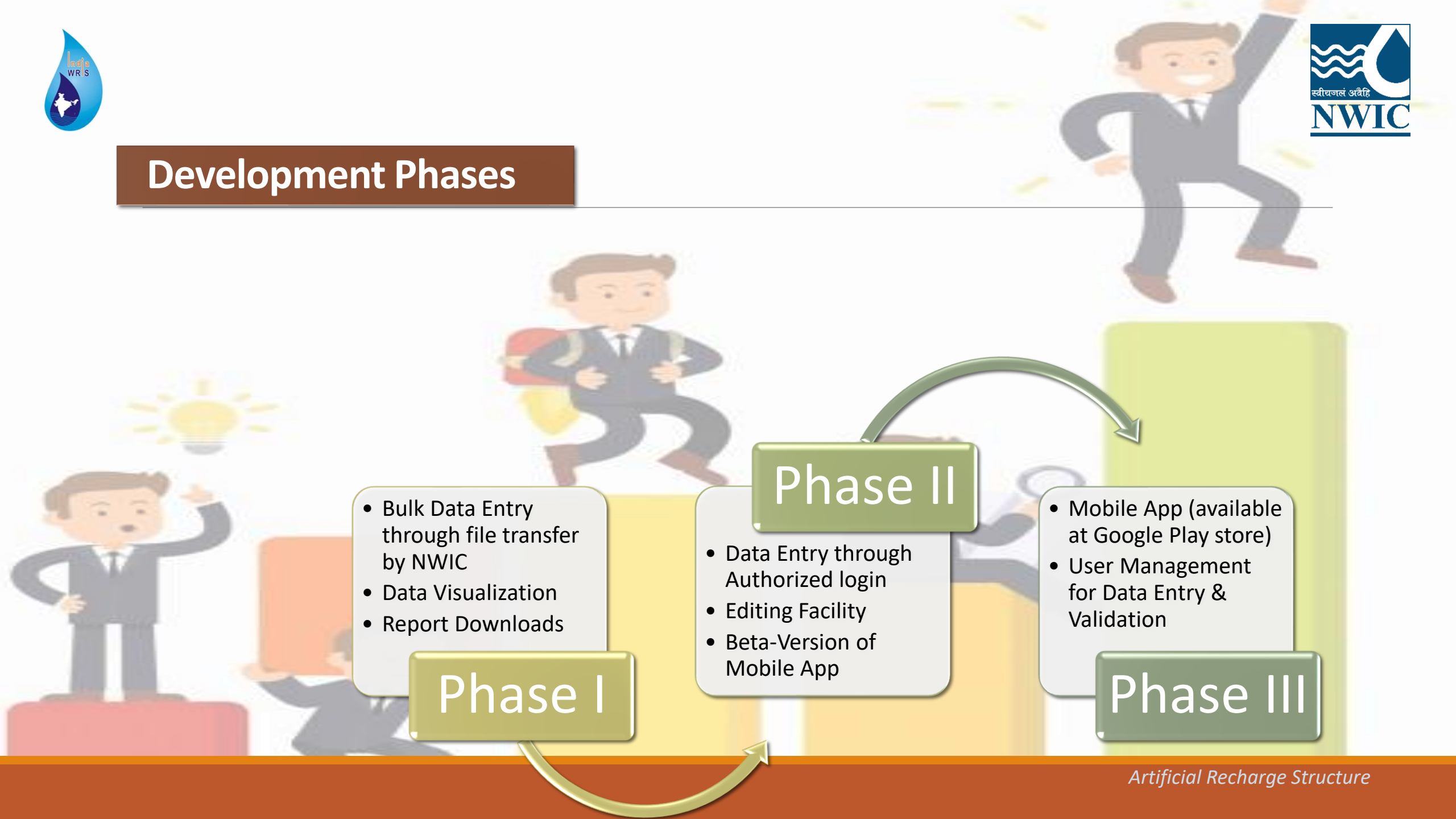


## Functionality

### 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

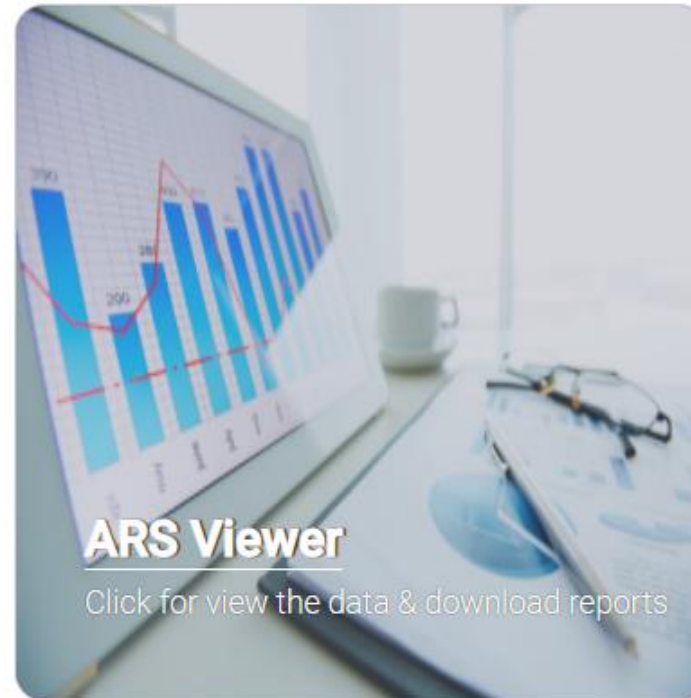
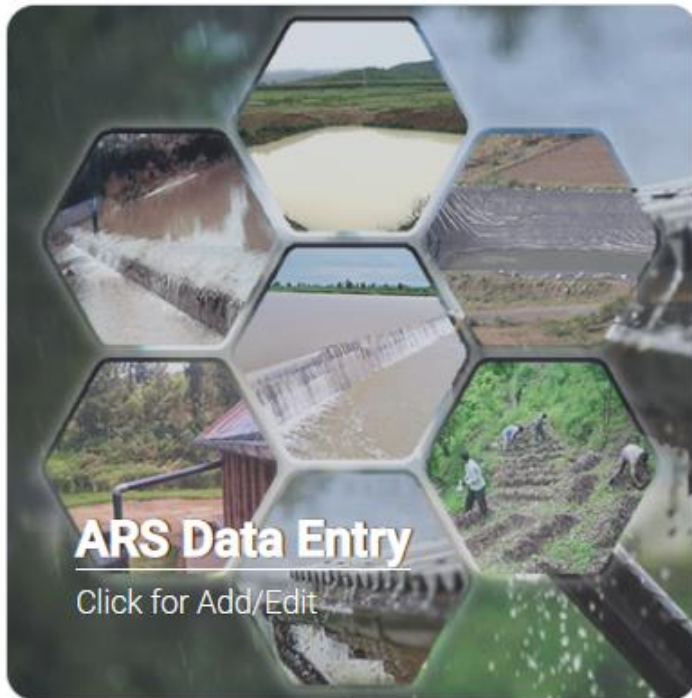
## Phase II

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

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

## Phase III

## ARTIFICIAL RECHARGE STRUCTURE



## Agencies

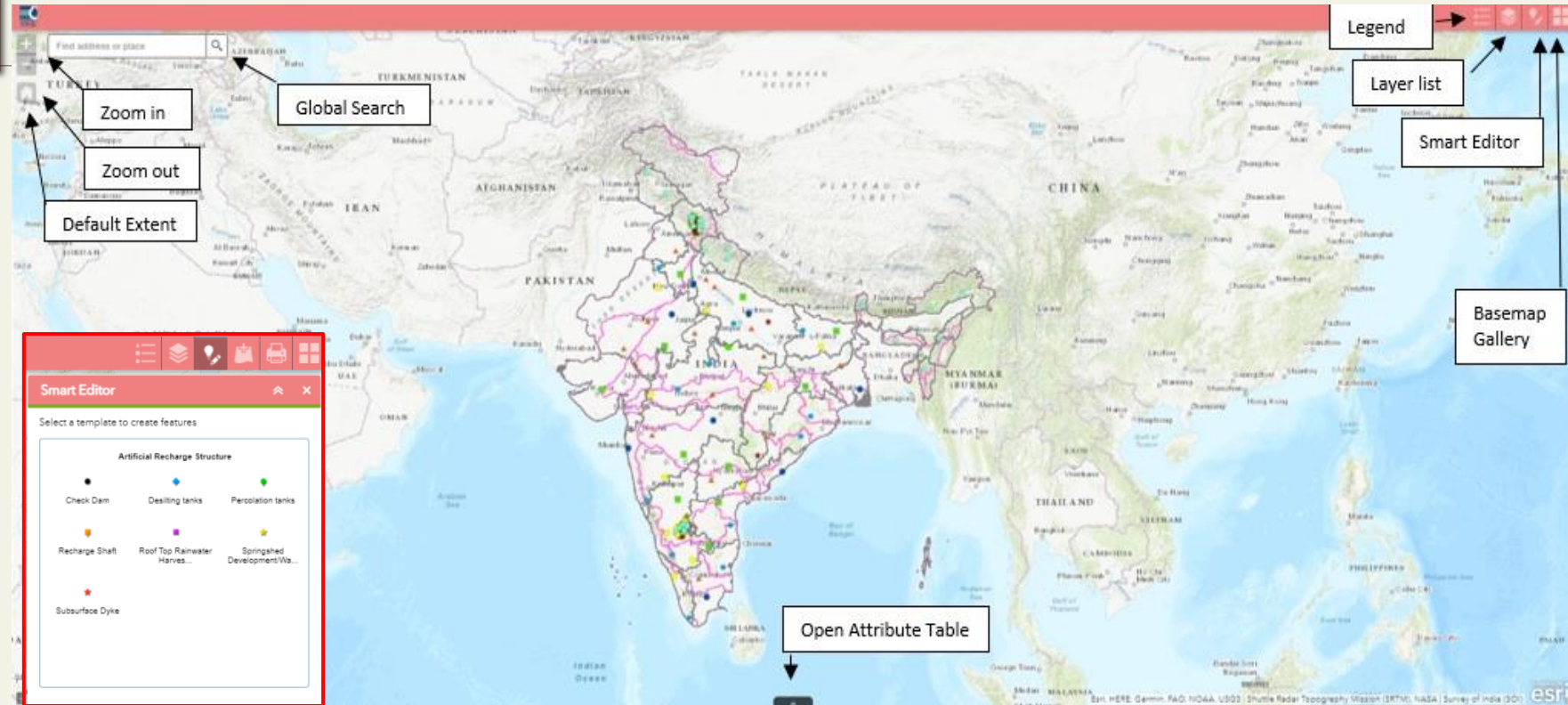
- Central govt.
- State govt.
- NGOs
- Water User Associations
- Others

## 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,
  - Spring water development/watershed development and
  - sub-surface dyke.



Smart Editor

# ARS Types and Sub Types



**CHECK DAMS**

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



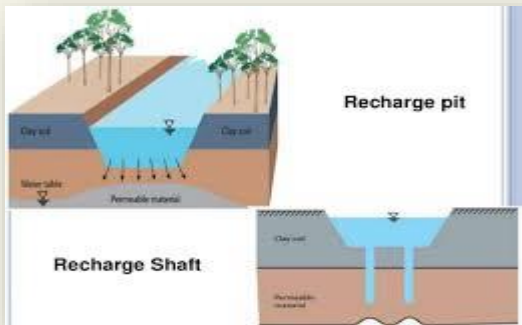
**ROOF TOP RAINWATER HARVESTING**

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



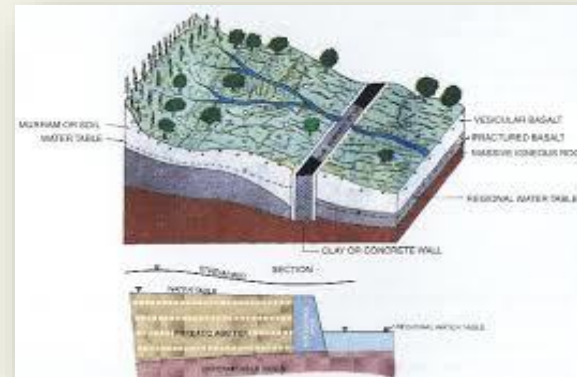
**RECHARGE SHAFT**

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

There are two sections in Data Entry Form:

---PART A

PRIMARY FIELD RELATED TO 'LOCATION DETAILS'

S.No.	Field Name	Entry Protocol
1	Latitude (Degree Decimal)*	Enter 6-digits Degree decimals only Ex. 11.286588
2	Longitude (Degree Decimal)*	Enter 6-digit Degree decimals only Ex. 72.212553
3	Sub Type of Structure*	Select from drop down list
4	State*	Select from drop down list.
5	District*	Select from drop down list. The list will be populated based on the State
6	Location Type (Urban/Rural)*	Select from drop down list.
<b>Urban</b>		
7	Pin*	6 digit local Postal Code
8	Address	Address of structure (Required in Urban Location)
9	City Name*	City Name (Required in Urban Location)
<b>Rural</b>		
10	Tehsil/Block*	The name of Tehsil/ Block. The list will be populated based on the District selected.
11	Village*	The name of Village where the Structure is located

---PART B

SECONDARY FIELD ARE FOR 'STRUCTURE DETAILS' SUCH AS LIKE WIDTH, HEIGHT, STORAGE CAPACITY ETC. <D:\DATA COLLECTION SHEET.XLSX>

S.No.	Field Name	Entry Protocol
1	Type of Agency*	Select from drop down list(Central, State, NGO, Institution, Individual, Others)
2	Name of Agency/owner*	To be entered
3	Source of Funding (Name of the scheme)	To be entered
4	Height of Structure (Meter)	To be entered
5	Length of the Structure (Meter)	To be entered
6	Width of the Structure (Meter)	To be entered
7	Depth of Structure (Meter)	To be entered
8	Diameter (Meter)	To be entered
9	Storage capacity (Cub. M)*	To be entered
10	Functional Status	Select from drop down list (Existing/ Closed)
11	Expenditure (Rupees)*	Cost of the structure
12	Month/Year of Completion*	Month and Year to be entered (MM/YY)
13	Photograph Attached (Yes/No)*	Yes or No only



# 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																						
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Structure No.13																						
Structure No.14																						
Structure No.15																						

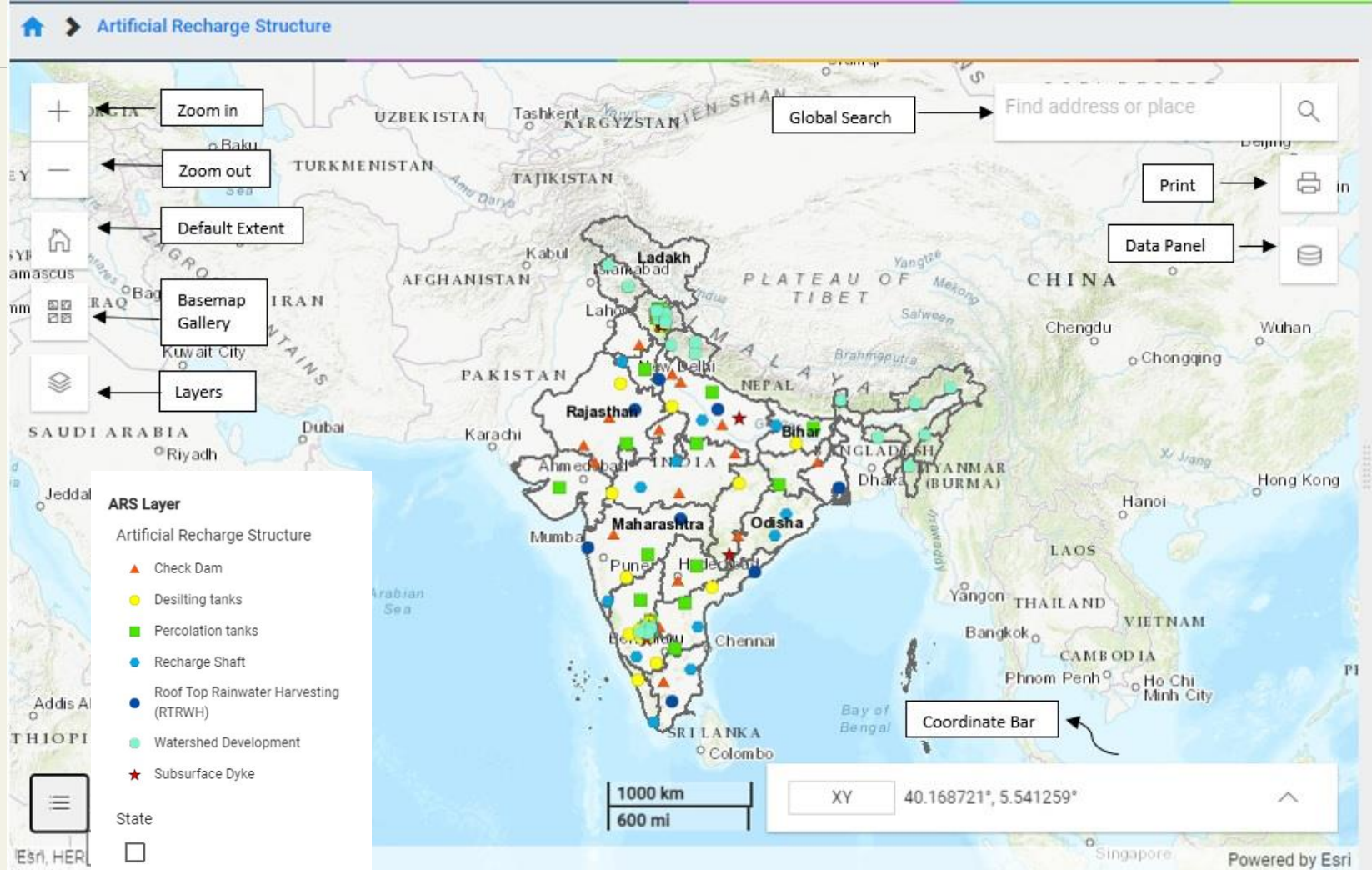
Page 1

# 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

Artificial Recharge Structure (Beta - Version)

Find address or place

**ARS Layer**

- Check Dam
- Desilting tanks
- Percolation tanks
- Recharge Shaft
- Roof Top Rainwater Harvesting
- Watershed Development
- Subsurface Dyke

State

1000 km  
600 mi

XY No position

Powered by Esri

## Data Panel

Artificial Recharge Structure

Summary View  Report Download

Boundary Wise Selection  
Administrative Boundary

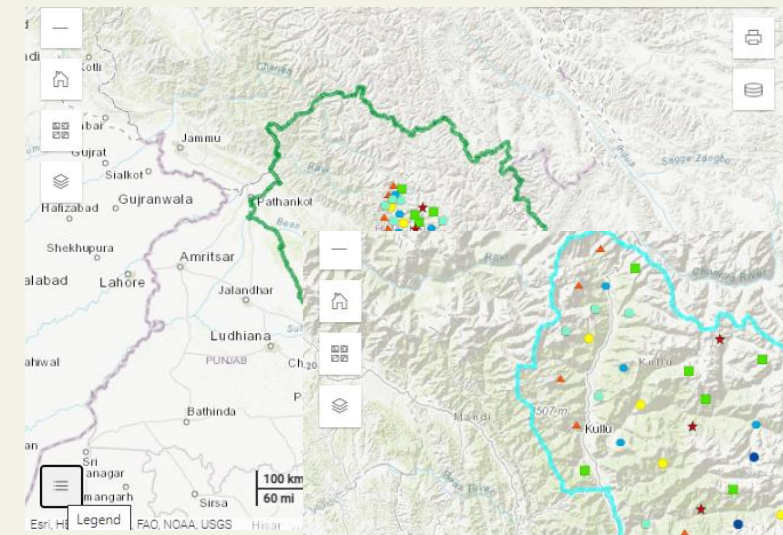
Type of Structure: All Structure Types  
Sub Type of Structure: - Select Sub Type of Structure -

State: All States  
District: - Select District -  
Block: - Select Block -

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

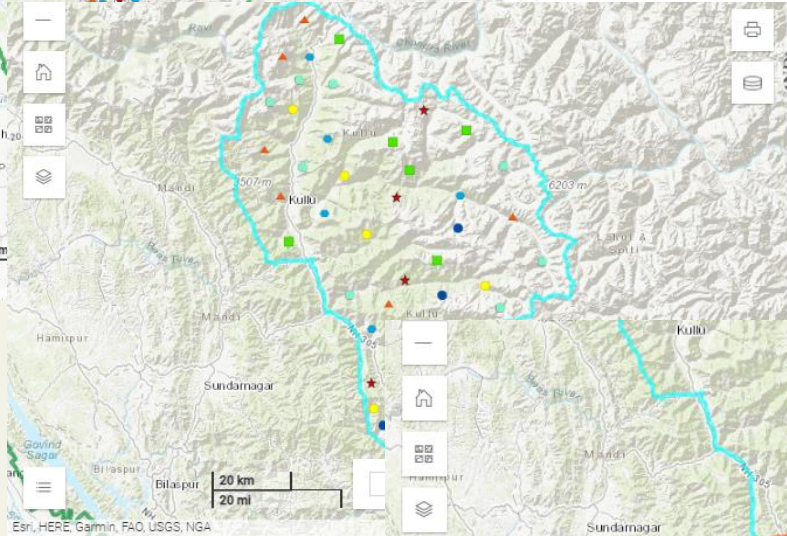
**Summary**

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



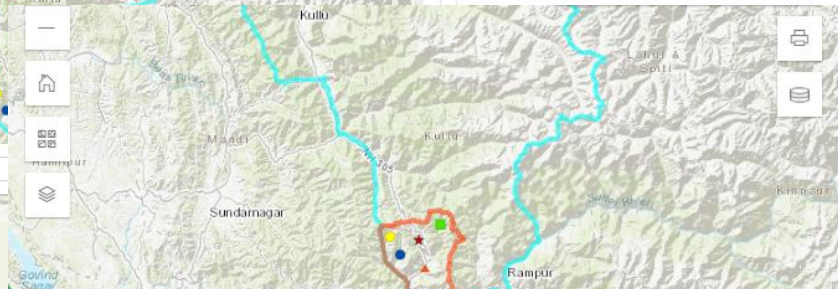
### Summary

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



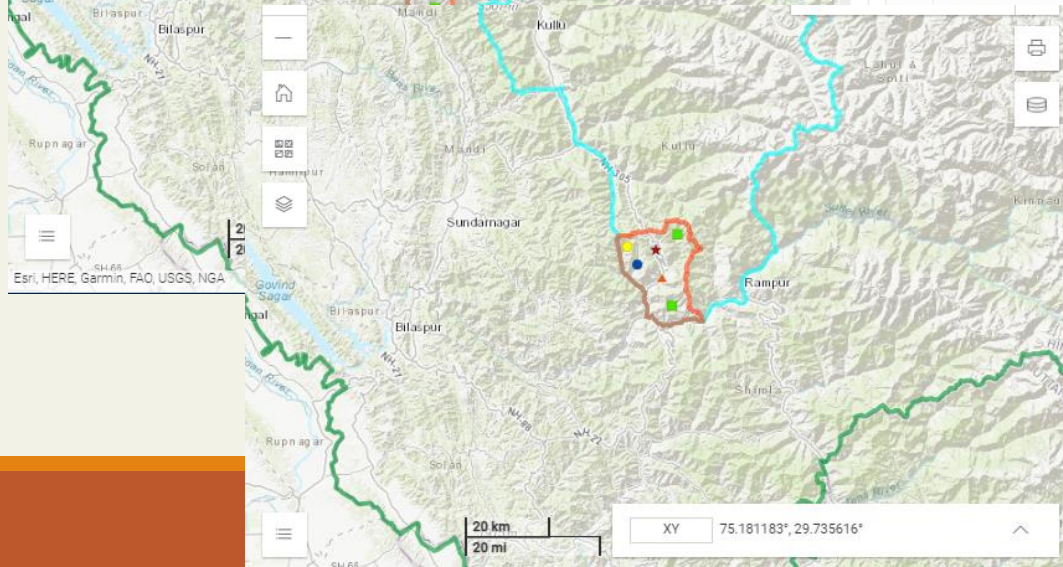
### Summary

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](#)

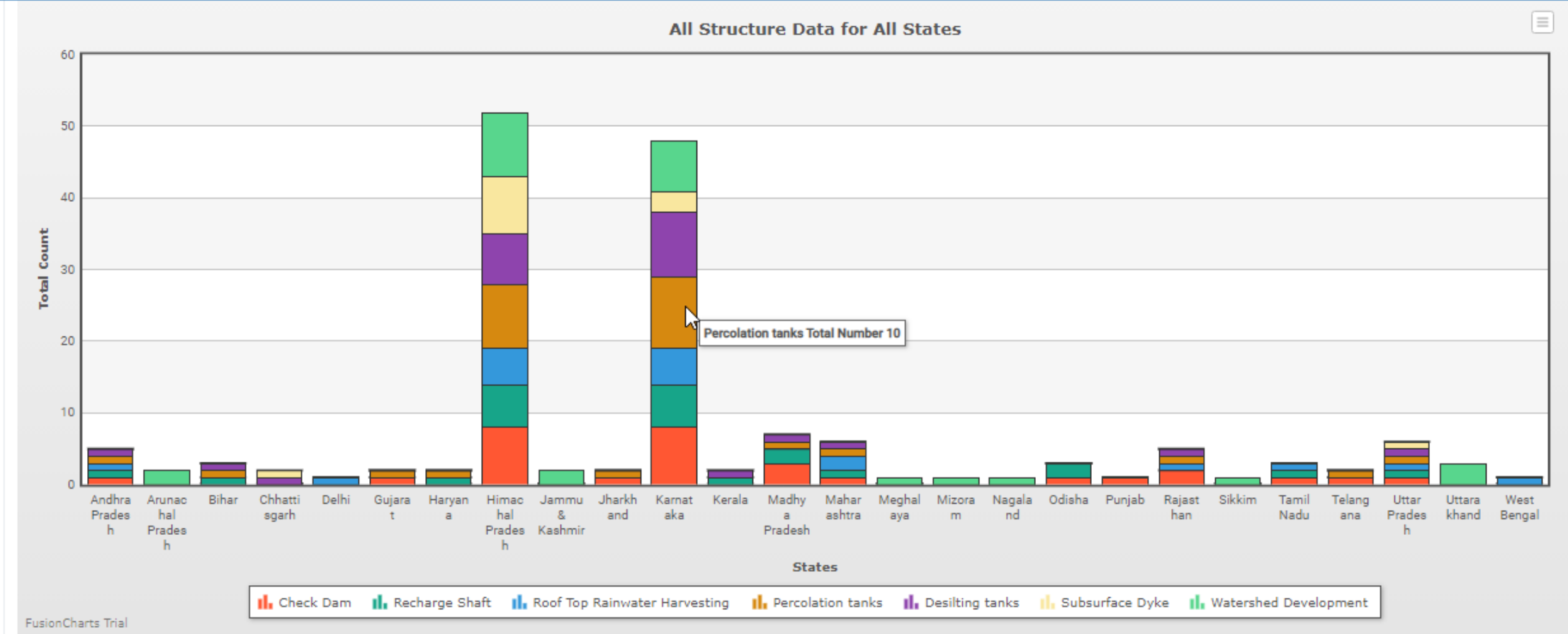
### Summary

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
- 8 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)
10	1 Central	CENTRAL 2	Rajasthan	Check Dam	Check Dam	5	7,113.1	1,580,000
11	2 Central	CENTRAL 5	Maharashtra	Check Dam	Cement Plug	18	44,876	3,140,000
12	3 Central	CENTRAL 3	Madhya Pradesh	Check Dam	Check Dam with associated structures	5	20,510	1,000,000
13	4 Central	CENTRAL 4	Maharashtra	Recharge Shaft	Recharge Shaft & Recharge Trench	18	69,068	3,840,000
14	5 Central	CENTRAL 1	Bihar	Recharge Shaft	Recharge well (Tube well)	2	7,480	450,000
15	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.



# THANK YOU



[www.indiawris.gov.in/wris](http://www.indiawris.gov.in/wris)

Contact Us at [helpdesk-nwic@gov.in](mailto:helpdesk-nwic@gov.in)

For data sharing and any other query.