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BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL, PRINCIPAL  
BENCH, NEW DELHI

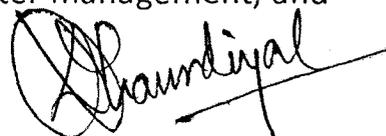
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O.A.NO.694/2023

**SUOMOTO CASE TITLED "UN PREDICTS GROUNDWATER LEVEL IN  
INDIA WILL REDUCE TO LOW BY 2025**

**REPORT ON BEHALF OF CENTRAL GROUND WATER AUTHORITY**

1. That this Hon'ble Tribunal vide order dt.24.11.23 took Suo Moto cognizance of the article "UN predicts Groundwater level in India will reduce to low by 2025" and issued notice to Central Ground Water Authority. The Central Ground Water Authority filed a report and this Hon'ble Tribunal after going through the said report directed the Central Ground Water Authority to file a detailed report.
2. That this fresh report is filed on behalf of Ministry of Jal Shakti and Central Ground Water Authority.
3. That pursuant to the order dt.24.11.23 Central Ground Water Authority is hereby filing the fresh report containing the following initiatives as a part of the ground water management and regulation plan scheme with the objectives to delineate and characterize the aquifers and develop plans for ground water management:
  - A. State/UT wise availability of the groundwater resources, stage of extraction and distribution of OCS assessment units in 26 States/UTs as per Ground Water Resource assessment 2023,
  - B. Artificial Recharge and Water Conservation Projects constructed for the purpose of sustainable groundwater management, and

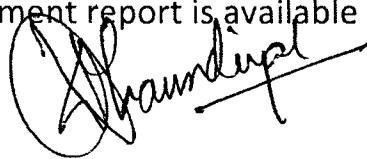


C. National Aquifer Mapping and Management Programme (NAQUIM) for sustainability of aquifers.

A brief about each of above is presented below:

**A. State/UT wise availability of the groundwater resources, stage of extraction and distribution of OCS assessment units in 26 States/UTs as per Ground Water Resource assessment 2023:** A summary of Ground Water Resource Assessment is presented below and State/UT wise availability of the groundwater resources, stage of extraction and distribution of OCS assessment units in 26 States/UTs is enclosed as **Annexure-I**.

- (i) The Hon'ble NGT Order dated 24/11/2023 in the above O.A. mentions about the status of groundwater scenario in 17 States/UTs of the country as per the Dynamic Ground Water Resource assessment report for the year 2022. It is confirmed that the status mentioned in the said order are as per the Ground Water Resource Assessment report for the year 2022. Assessment of Dynamic Ground Water Resources of each State/UT is being carried out jointly by Central Ground Water Board and State Nodal/Ground Water Department periodically as per the Ground Water Estimation Committee-2015 (GEC-2015) methodology under the guidance of the respective State/UT Level Committees (SLCs) and overall supervision of Central Level Expert Group (CLEG). As part of the assessment, 'Annual Extractable Ground Water Resource' as well as 'Annual Ground Water Extraction are assessed for each assessment unit (block/taluka/Mandal/tehsils/firka etc.). The 'Stage of Ground Water Extraction' is then computed as the ratio of 'Annual Ground Water Extraction' with respect to 'Annual Extractable Ground Water Resource' and is usually expressed in percentage. Based on the stage of extraction, the assessment units are categorized as Safe ( $\leq 70\%$ ), Semi-Critical ( $>70\%$  and  $\leq 90\%$ ), Critical ( $>90\%$  and  $\leq 100\%$ ) and Over-Exploited ( $>100\%$ ).
- (ii) From the year 2022 onwards, the Ground Water Resource assessment for all the States/UTs are now being carried out every year. The latest Ground Water Resource Assessment report is available for the year 2023.



(iii) As per Ground Water Resource assessment for the year 2023, out of the total 6553 assessment units in the country, 736 assessment units have been categorized under Over-exploited Category, 199 units under Critical category, 698 units under Semi-critical category, 127 under Saline category and the remaining 4793 units under Safe category. The Over-exploited, Critical and Semi-critical assessment units are also referred to as OCS units. There are, thus, in all 1633 assessment units in the country which fall under OCS category and these are distributed across 26 States/UTs of the country.

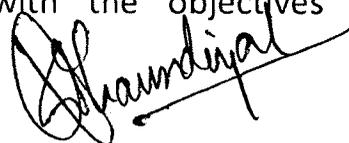
(iv) The States/UTs where the average stage of groundwater extraction is high (> 70%) are Punjab (163.76%), Rajasthan (148.77%), Dadra & Nagar haveli and Daman & Diu (142.91%), Haryana (135.74%), Delhi (99.13%), Chandigarh (75.41%), Tamil Nadu (73.91%), Uttar Pradesh (70.76%) and Puducherry (70.27%). The assessment units categorized under Over-exploited, Critical and Semi-critical category are distributed in 26 States/UTs of the country.

**B. Artificial Recharge and Water Conservation Projects constructed for the purpose of sustainable groundwater management:** For the purpose of sustainable groundwater management, Central Ground Water Board has implemented Artificial Recharge and Water Conservation projects in the country. Summary of projects completed/ongoing is tabulated below and details of projects constructed are enclosed **Annexure-II**:

Sl.	Plan	No. of Structures constructed	Cost in Rs. Lakh
1	VIII Plan (1992-97)	230	178.20
2	IX Plan (1997-2002)	1521	2333.25
3	X Plan (2002-2007)	189	445.95
4	XI Plan (2007-2012)	2203	4607.90
5	Other Artificial Recharge Projects	342	25544.00

**C. National Aquifer Mapping and Management Programme (NAQUIM) for sustainability of aquifers:**

(i) National Aquifer Mapping and Management Programme (NAQUIM) was initiated in 2012 as a part of the ground water management and regulation plan scheme with the objectives to delineate and



characterize the aquifers and develop plans for ground water management. Aquifer maps have been prepared and management plans have been developed for the entire mappable area of about 25 lakh km<sup>2</sup>.

- (ii) A multi-tiered approach is adopted for sharing of outputs of NAQUIM studies. The findings are shared with the state government through State Ground Water Coordination Committees (SGWCC). Reports have also been shared with the District Authorities (DM/DC). Further, Public Interaction Programs (PIP) are being organized at grassroots level for disseminating the outputs of NAQUIM Studies. The outputs are also shared through websites and regional workshops.
- (iii) The findings of NAQUIM include information about extent of aquifers (depth of occurrence and horizontal extent) and their properties. Actions envisaged include artificial recharge interventions and demand management interventions. Findings of NAQUIM studies and the actions envisaged thereon are compiled mostly in form of district wise reports, which are placed on a searchable database in CGWB website [https://cgwb.gov.in/cgwbpm/search?type=2&cat\\_id=7&state\\_id=&district\\_id=&year\\_of\\_issue=&name\\_of\\_author=&keywords=&search=search](https://cgwb.gov.in/cgwbpm/search?type=2&cat_id=7&state_id=&district_id=&year_of_issue=&name_of_author=&keywords=&search=search).
- (iv) Finding and recommendations of NAQUIM studies are being used by various agencies for planning interventions for artificial recharge, regulation of ground water extraction, construction of contaminant free wells etc.



For Central Ground Water Authority  
VINOD KUMAR DHAUNDIYAL  
Administrator  
Central Ground Water Authority  
Government of India  
Ministry of Jal Shakti  
Department of Water Resources, RD & GR  
New Delhi

Through

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**THE STATE/UT WISE AVAILABILITY OF THE GROUNDWATER RESOURCE, STAGE OF EXTRACTION AND DISTRIBUTION OF THE OCS ASSESSMENT UNITS IN THESE 26 STATES/UTS IS AS FOLLOWS :**

**1. RAJASTHAN**

Total Annual Ground water Recharge of the State has been assessed as 12.45 bcm and Annual Extractable Ground Water Resource as 11.25 bcm. The Annual Ground Water Extraction is 16.74 bcm and the Stage of ground water extraction in the state is 148.77 %.

Out of the 302 assessment units (blocks and urban areas), 216 units (71.52 %) have been categorized as 'Over Exploited', 23 units (7.62 %) as 'Critical', 22 units (7.28 %) as 'Semi-Critical', 38 units (12.58 %) blocks as 'Safe' and 3 units (0.99 %) as 'Saline'.

**2. PUNJAB**

Total Annual Ground Water Recharge of the State has been assessed as 18.84 bcm and Annual Extractable Ground Water Resource as 16.98 bcm. The Annual Ground Water Extraction is 27.8 bcm and Stage of Ground Water Extraction is 163.76 %.

Out of total 150 assessed blocks and 03 Urban area taken for study, 114 blocks and 03 Urban Areas (total 76.47 %) have been categorized as 'Over-exploited', 03 blocks (1.96%) as 'Critical', 13 blocks (8.5%) as 'Semi Critical' and 20 blocks (13.07%) as 'Safe'



### 3. TAMIL NADU

Total Annual Ground Water Recharge of the State has been assessed as 21.59 bcm and Annual Extractable Ground Water resources as 19.51 bcm. The Annual Ground Water Extraction is 14.42 bcm and Stage of Ground Water Extraction as 73.91 %.

Out of 313 assessment units (taluka), 100 units (31.95 %) have been categorized as 'Over Exploited', 27 units (8.63 %) as 'Critical', 56 units (17.89 %) as 'Semi-Critical', 125 units (39.94 %) as 'Safe' and 5 units (1.60 %) have been categorized as 'Saline'.

### 4. HARYANA

Total Annual Ground Water Recharge of the State has been assessed as 9.55 bcm and Annual Extractable Ground Water Resource is 8.69bcm. The Total Current Annual Ground Water extraction is 11.80bcm and Stage of Ground Water extraction is 135.74 %.

Out of total 143 assessment units (blocks/Urban), 88 units (61.54 %) have been categorized as 'Over-exploited', 11 units (7.69 %) as 'Critical', 9 units (6.29 %) as 'Semi Critical' and 35 units (24.48 %) as 'Safe' categories of assessment units.

### 5. UTTAR PRADESH

Total Annual Ground Water Recharge of the state has been assessed as 71.83 bcm and Annual Extractable Ground Water Resource as 65.57 bcm. The Annual Ground Water Extraction is 46.40 bcm and average Stage of Ground Water Extraction of the State is 70.76%.



Out of the 836 assessment units consisting 826 blocks and 10 cities, 62 units (7.42 %) have been categorized as 'Over- exploited', 43 units (5.14 %) as 'Critical', 172 units (20.57 %) as 'Semi-critical' and 559 units (66.87 %) as 'Safe'.

## 6. KARNATAKA

The Annual Ground Water Recharge has been assessed as 18.93 bcm and the Annual Extractable Ground Water resource is 17.08 bcm. The present Annual Ground Water Extraction is 11.32 bcm and the Stage of Ground Water Extraction is 66.26%.

Out of the 234 assessment units (taluks), 44 units (18.8 %) have been categorized as 'Over exploited', 12 units (5.13 %) as 'Critical', and 32 units (13.68 %) as 'Semi critical' and 146 units (62.39 %) have been categorized as 'Safe'.

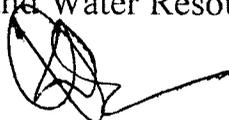
## 7. MADHYA PRADESH

Total Annual Ground Water Recharge of the State has been assessed as 35.47 bcm and Annual Extractable Ground Water Resources is 32.85 bcm. The Annual Ground Water Extraction is 19.30 bcm and Stage of Ground Water Extraction is 58.75 %.

Out of 317 assessment units (313 blocks and 4 urban areas), 26 units (8.2 %) has been categorized as 'Over Exploited', 5 units (1.58 %) as 'Critical', 60 units (18.93 %) as 'Semi-Critical' and 226 units (71.29 %) as 'Safe' categories of assessment units and there are no saline assessment unit.

## 8. GUJARAT

Total Annual Ground Water Recharge of the State has been assessed as 27.35 bcm and Annual Extractable Ground Water Resources as 25.41 bcm. The



Annual Ground Water Extraction has been assessed as 13.13 bcm and Stage of Ground Water Extraction as 51.68 %.

Out of 252 assessment units (talukas), 23 units (9.13 %) have been categorized as 'Over- exploited', 8 units (3.17 %) as 'Critical', 20 units (7.94 %) as 'Semi-critical', 189 units (75.00 %) as 'Safe' and there are 12 units (4.76 %) as 'Saline' categories of assessment units.

## 9. DELHI

The Total Annual Ground Water Recharge of the State has been assessed as 0.38 bcm and Annual Extractable Ground Water Resources is 0.34 bcm. The Total Current Annual Ground Water Extraction is 0.34 bcm and Stage of Ground Water Extraction is 99.13 %.

Out of 34 assessment units (tehsils), 13 units (38.24 %) have been categorized as 'Over-exploited', 12 units (35.29 %) as 'Critical', 4 units (11.76 %) as 'Semi-critical', and 5 units (14.71 %) as 'Safe' categories of assessment units.

## 10. TELENGANA

Total Annual Groundwater recharge of the State has been assessed as 23.14 bcm and Annual extractable Ground Water resource as 20.92 bcm. The Annual Ground Water Extraction is 8.09 bcm and Stage of Ground Water Extraction is 38.65 %.

Out of 612 assessment units (Mandals), 11 units (1.8 %) have been categorized as 'Over Exploited', 10 units (1.63 %) as 'Critical', 61 units (9.97 %) as 'Semi-Critical' and 530 units (86.6 %) as 'Safe'. There is no 'Saline' category of assessment unit in the state.



**11.ANDHRA PRADESH**

The Total Annual Ground Water Recharge of the State has been estimated as 27.83 bcm and Annual Extractable Resource is 26.45 bcm. The current Annual Ground Water Extraction for all uses is 7.48 bcm and Stage of Ground Water Extraction is 28.3 %.

Out of 667 assessment units (mandals), 10 (1.5%) units have been categorized, as 'Over-exploited', 03 units (0.45%) as 'Critical', 18 units (2.7%) as 'Semi-Critical', 597 units (89.5 %) as 'Safe' and 39 units categorized as 'Saline' (5.85%).

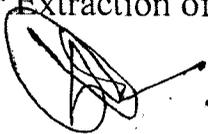
**12.MAHARASTRA**

Total Annual Ground Water Recharge of the State has been estimated as 32.76 bcm and Annual Extractable Ground Water Resources is 30.95 bcm. The Annual Ground Water Extraction is 16.66 bcm and Stage of Ground Water Extraction is 53.83 %.

Out of 353 assessment units (taluks), 9 units (2.55%) have been categorized as 'Over-exploited', 9 units (2.55 %) as 'Critical', 57 units (16.15 %) as 'Semi-critical' and remaining 277 units (78.47 %) as 'Safe' and 1 unit (0.28 %) as 'Saline' categories of assessment units.

**13.BIHAR**

The Total Annual Ground Water Recharge has been worked out as 33.96 bcm with the Annual Extractable Ground Water Resources as 30.72 bcm. The Current Annual Ground Water Extraction for all uses has been estimated as 13.75 bcm and the Stage of Ground Water Extraction of the State is 44.76 %..



Out of the total 535 assessment units (blocks + Patna Urban), 8 units (1.50 %) are 'Over-exploited', 7 units (1.31 %) are 'Critical', 53 units (9.91 %) are 'Semi-Critical', 467 units (87.29 %) units are 'Safe' category.

#### **14. JHARKHAND**

The Total Annual Ground Water Recharge of the State has been assessed as 6.25 bcm and Annual Extractable Ground Water Resources is 5.73 bcm. The Annual Ground Water Extraction is 1.8 bcm and Stage of Extraction is 31.38 %.

Out of 263 assessment units (blocks-259, Urban area-04), 5 units (1.90 %) have been categorized as 'Over-exploited', 6 units (2.28 %) as 'Critical', 11 units (4.18 %) as 'Semi-critical' and rest 241 units (91.63 %) are under 'Safe' category .

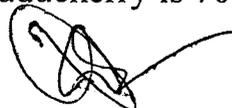
#### **15. DADRA & NAGAR HAVELI and DAMAN & DIU**

The total Annual Ground Water Recharge has been assessed as 0.12bcm and Annual Extractable Ground water Resources as 0.12bcm. The total current Annual Ground Water Extraction has been assessed as 0.16bcm and Stage of Ground Water Extraction as 142.91 %.

All the three assessment units in the UT have been categorized as 'Over Exploited'.

#### **16. PUDUCHERRY**

The Annual Ground Water Recharge of the UT of Puducherry has been assessed as 0.198 bcm, Annual Extractable Ground Water Resources is 0.181 bcm and the Annual Ground Water Extraction is 0.127 bcm. The overall Stage of Ground Water Extraction of Union Territory of Puducherry is 70.27 %.



Out of 8 taluks assessed, 3 taluks (37.5%) (Mahe, Karaikal&Thirunallar) falls under 'Safe' category, 3 taluks (37.50%) (Ozhukarai, Villianur&Bahour) has been categorized as 'Semi-Critical', 1 taluk (12.50%) (Puducherry) as 'Over-exploited' and 1 taluk (12.50%) (Yanam) as 'Saline'.

### 17. ASSAM

The Total Annual Groundwater Recharge of the State has been estimated as 27.26 bcm and Annual Extractable Groundwater Resources is 20.93 bcm. The Current Annual Ground Water Extraction for all uses is 2.63 bcm and Stage of Ground Water Extraction is 12.54 %.

Out of 245 assessment units, 244 have been categorized as 'Safe' and one assessment unit of Kamrup (Metro) Urban is in 'Semi Critical' condition.

### 18. CHHATTISGARH

The Total Annual Ground Water Recharge of the State has been assessed as 13.34 bcm and Annual Extractable Ground Water Resource is 12.18 bcm. The Total Current Annual Ground Water Extraction is 5.75 bcm and Stage of Ground Water Extraction is 47.17 %.

Out of 146 assessment units (blocks), 5 units (3.42 %) as 'Critical', 22 units (15.07 %) have been categorized as 'Semi-critical' and 119 units (81.51 %) as 'Safe' categories of assessment units.

### 19. KERALA

Total Annual Ground Water Recharge has been estimated as 5.53 bcm and Annual Extractable Ground Water Resource is 5.01 bcm. The Annual Ground Water Extraction is 2.73 bcm and Stage of Ground Water Extraction is 54.55 %.

Out of total 152 assessment units (blocks), 3 units (1.97 %) have been categorized as 'Critical', 30 units (19.74 %) as 'Semi-Critical' and 119 units (78.29 %) as 'Safe' categories of assessment units.



## 20. ODISHA

Total Annual Ground Water Recharge of the State has been assessed as 17.35 bcm and Annual Extractable Ground Water Resource as 15.94 bcm. The Annual Ground Water Extraction is 7.39 bcm and Stage of Ground Water Extraction is 46.33 %.

Out of the total of 314 assessment units (blocks), 9 units (2.87 %) have been categorized as 'Semi-critical', 299 units (95.22 %) as 'Safe' and 6 units (1.91 %) as 'Saline' categories of assessment units.

## 21. UTTARAKHAND

Total Annual Ground Water Recharge in the State (2023) has been assessed as 2.02 bcm. The Total Annual Extractable Ground Water Resource of the State has been assessed as 1.85 bcm. The Annual Ground Water Extraction of the State (2023) is 0.95 bcm, the largest user being irrigation sector. The Stage of ground water extraction for the entire State, is 51.69 %.

Out of the 18 assessed blocks of Uttarakhand State, 14 blocks (77.78%) are 'Safe', whereas remaining 4 blocks (22.23%) are categorised as 'Semi Critical'.

## 22. WEST BENGAL

Total Annual Ground Water Recharge has been estimated at 26.29 bcm and Annual Extractable Ground Water Resource has been estimated at 23.9 bcm. Current Annual Ground Water Extraction for all uses has been estimated at 10.71 bcm, which translates into a Stage of Ground Water Extraction at 44.81 %.

Out of 345 assessed units, 241 AUs (69.86%) are 'Safe', 32 AUs (9.28%) are 'Semi-Critical', 12 AUs (3.48%) are 'Critical' and 60 AUs (17.39%) are of poor groundwater quality (Saline).



**23.CHANDIGARH**

Total Annual Ground Water Recharge has been assessed as 0.054 bcm and Annual Extractable Ground Water Resources as 0.048 bcm, with Total Extraction of 0.037 bcm and stage of ground water extraction at 75.41 %.

The UT of Chandigarh has been categorized as 'Semi Critical'.

**24.JAMMU & KASHMIR**

The total Annual Groundwater Recharge of the UT has been estimated as 4.94 bcm and Annual Extractable Ground Water Resources is 4.46 bcm. The Total Current Annual Ground Water Extraction is 1.08 bcm and the Stage of Ground Water Extraction is 24.20 %.

Out of 20 assessment units, 19 assessment units have been categorized as 'Safe' whereas 1 assessment unit i.e. Srinagar Urban Area comes under the 'Semi-critical' category.

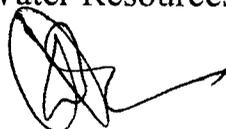
**25.LADAKH**

Total Annual Ground Water Recharge of the UT has been estimated as 0.0888 bcm and Annual Extractable Ground Water Resources is 0.0799 bcm. The Total Current Annual Ground Water Extraction is 0.0296 bcm. The Stage of Ground Water extraction in Ladakh is 37.05 %.

Out of total 18 Assessment Units, 6 AUs (33.33%) of Leh are categorized as 'Semi Critical' and 12 AUs (66.67%) are categorized as 'Safe'.

**26.LAKSHADWEEP**

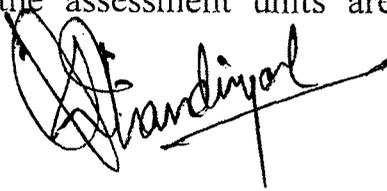
The total Annual Ground Water Recharge in the UT has been estimated as 0.013 bcm and Annual Extractable Ground Water Resources works out as 0.0051 bcm.



The total current Annual Ground Water Extraction has been assessed as 0.0033 bcm and the Stage of Ground Water Extraction as 61.72%.

Out of the 5 assessment units, 4 blocks (80%) are categorized as 'Safe' and 1 block (20%) Kavaratti, as 'Semi Critical'.

In all the other ten States/UTs namely Andaman & Nicobar islands, Arunachal Pradesh, Goa, Himachal Pradesh, Tripura, Manipur, Meghalaya, Mizoram, Nagaland and Sikkim, all the assessment units are categorized under Safe Category.

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## ARTIFICIAL RECHARGE STRUCTURES IN INDIA:

## VIII Plan (1992-97)

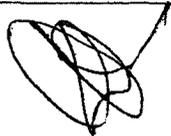
S.No.	State	District	Type of Structure Constructed	Total Structure Constructed	Cost (in Lakhs)
1	Jammu and Kashmir	Jammu	Deepening of Pond-1 Roof Top Rain Water Harvesting -2	4	
		Kathua	Sub Surface Dyke - cum - Check Dam -1		
1	Karnataka	Kolar	Check Dams - 21 Percolation Tank - 2 Earthen Bund - 1 Boulder Checks - 98 Rubble Checks - 35 PRS - 5 Gravity Recharge Wells - 2 Roof Top Rain Water Harvesting - 1	165	44.116
3	Kerala	Palghat	Sub-surface Dam-1	2	6.27
		Trivandrum	Sub-surface Dam-1		
4	Madhya Pradesh	Burhanpur	Sub Surface Dyke- 2	8	3.2
		Rajgarh	Sub Surface Dyke- 1		
		Dewas	Sub Surface Dyke-1 Boulder check Dam-1 Gabion Structure-1		
		Bhopal	Sub surface Dyke-1 Contour trench (460m) Sand bag nala bund-1		
		Khargone	Sub Surface Dyke-1		
5	Maharashtra	Amravati	Percolation Tank- 5 Cement Plugs 10 Underground Bandharas-5	29	71.81
		Jalgaon	Percolation Tank - 3 Conversion of Village Tank to Percolation Tank-2 Nallah Diversion-1 Injection Well-1 Recharge Shaft-1 Dugwell Recharge-1		29.79
6	Tamil Nadu	Dharmapuri	Sub Surface Dyke-1	3	4.5
		Namakkal	Sub Surface Dyke-1		4
		Dharmapuri	Sub Surface Dyke-1		6.5
7	Telangana	Ranga Reddy	Sub Surface Barrier-1	1	
8	West Bengal	Purulia	Sub Surface Dyke-5	18	0.38
		Bankura	Sub Surface Dyke-13		0.99
TOTAL				230	178.20

## IX Plan (1997-2002)

S.No.	State	District	Type of Structure Constructed	Total Structure Constructed	Cost (in Lakhs)
1	Arunachal Pradesh	East Siang	Roof Top Rain Water harvesting-5	5	
		West Siang East kameng	Demonstrative Project on Artificial Recharge to Groundwater Rainwater Harvesting	80	
2	Assam		Roof Top Rain Water harvesting-14	14	
3	Chandigarh	Chandigarh	Roof Top Rain Water harvesting Piezometers Recharge pit with Injection wells	56	64.44
		Chandigarh	56 recharge structures (Each Recharge pit with 2 Injection wells)		
4	Haryana	Kurukshetra	Recharge pit with Injection wells Recharge shafts		19.19
		Faridabad	Recharge pit with Injection wells		1.7
		Mahendergarh	Recharge pit with Injection wells		52.71
		Kurukshetra	Subsurface Dyke cum check dam		12.61
		Panipat	Injection Well		16.96
5	Himachal Pradesh	Kangara	Check dam cum groundwater dam-1	6	24.137
		Kangara	Check Dam-2		46.96
		Hamirpur	Check Dam-1		65
		Kangara	Roof Top Rain Water harvesting-1		2.053
		Kangara	Roof Top Rain Water harvesting-1		1.99
6	Jharkhand	Ranchi	Roof Top Rain Water harvesting-3	3	
7	Karnataka	Bangalore	Check Dams - 5 Vertical Shaft - 1 Roof Top Rain Water Harvesting - 1 Boulder Check - 3	10	43.3
8	Kerala	Ernakulam	Sub-surface Dam-1	15	
		Kasargod	Deepening of Pond -1 Deepening cum desiltation of tank-1		6.597
		Kannur	Roof Top Rainwater Harvesting-2 Check Dam-1 Recharge Pit-1		99.9
		Trivandrum	Sub-surface Dam-1		6.25
		Palghat	Sub-surface Dam-2		13.15
		Trivandrum	Tidal Regulator-1		15
		Kottayam	Sub-surface Dam-1 Percolation Tank-1 Recharge Well-1		13.82
		Kollam	Sub-surface Dam-1		7.364
9	Madhya Pradesh	Dewas	Roof Top Rain Water harvesting filters-1000 Recharge Shafts-5 Roof Top Rain Water Harvesting-1	1029	18.52

		Indore	Roof Top Rain Water harvesting in PHED Colony, Musakhedi-1		6.94
		Mandsaur	Percolation Tank-1 Check Dam-2 Cement plug-1 Gabion structure-19		23.48
10	Maharashtra	Jalgaon	Percolation Tank- 5 Recharge Shaft-5	12	74.33
		Nagpur	Roof Top Rain Water Harvesting through existing Dug Well-1		1.5
		Warud	Roof Top Rain Water Harvesting through recharge well-1		0.8
11	Meghalaya		Roof Top Rain Water harvesting-6	6	
12	Mizoram		Roof Top Rain Water harvesting -35	35	
13	Nagaland		Roof Top Rain Water harvesting-42 Demonstrative artificial recharge -80	122	
14	Punjab	Jalandhar	Artificial recharge Structure		9.893
		Kapurthala	Artificial recharge Structure		
		Amritsar	Recharge Wells-4 Roof Top Rain Water harvesting-1		10.75
		Sangrur	Artificial recharge Structure		73.3
		Patiala	Artificial recharge Structure		11.57
		Ludhiana	Artificial recharge Structure		1.55
		Jalandhar	Artificial recharge Structure		11.62
		Patiala	Artificial recharge Structure		30.45
			Artificial recharge Structure		29.35
		Ropar	Check dams-5		166.4
		Patiala	Artificial recharge Structure		29.8
			Artificial recharge Structure		17.01
		Ludhiana	Artificial recharge Structure		9.48
		Fatehgarh Sahib	Recharge pit with Injection wells-1		5.775
		Jalandhar	Recharge pit with Injection wells-1		4.795
		Patiala	Recharge pit with Injection wells-1		20.77
		Amritsar	Artificial recharge Structure		55.67
		Tarn Taran	Artificial recharge Structure		55.67
		Moga	Artificial recharge Structure		179.453
		Chandigarh	Artificial recharge Structure		543.22
15	Rajasthan	Jaipur	Roof Top Rain Water harvesting -15	16	3.96
		Udaipur	Roof Top Rain Water harvesting -1		
16	Tamil Nadu	Villupuram	Sub-surface dyke -1	8	8
		Coimbatore	Percolation pond-4		42.1
		Villupuram	Percolation pond, Desilting & strengthening of bunds etc		71.36
		Virudhunagar	Percolation pond-1		6.51
		Chennai	Percolation pond-1		8.97
		Tiruchchirappalli	Sub surface Dyke-1		13
		Ramanathapuram	Rain Water Harvesting Structures		14.2

17	West Bengal	Purulia	Farm Pond-13 Sub Surface Dyke-8 Nala Bund-16 Re excavation of pond-15 Percolation tank-15 Contour bund(1.2 km) Monitoring well-5	104	50.44
		Medinipur	Percolation tank – 17 Contour bund – 2 Km. Sub-Surface Dyke – 8 Monitoring well – 9		33.32
		Parganas	Excavation of silt (69000 m3)		12.02
		Hooghly	Re-excavation of pond supported by recharge shafts – 2		8.79
		Birbhum	Recharge shaft – 4 Piezometers - 3		7.65
		Kolkata	Recharge tube well – 2 Piezometers - 1		10.65
18	Uttar Pradesh	Baghpat	Roof Top Rain Water harvesting		5
		Lucknow	Roof Top Rain Water harvesting		3.25
		Lucknow	Roof Top Rain Water harvesting		1.97
		Lucknow	Roof Top Rain Water harvesting		1.97
		Aligarh	Storm water Recharge		32.76
		Bhadohi	Roof Top Rain Water harvesting		11.82
		Allahabad	Roof Top Rain Water harvesting		4.6
		Allahabad	Roof Top Rain Water harvesting		5.83
		Lucknow	Roof Top Rain Water harvesting		69.85
<b>Total</b>				<b>1521</b>	<b>2333.247</b>

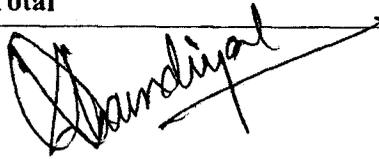


S.No.	State	District	Type of Structure Constructed	Total Structure Constructed	Cost (in Lakhs)
1	Andhra Pradesh	Kadapa	Check Dams-15 Percolation Tank-7	22	
2	Kerala	Palghat	Sub-surface Dam -1 Check Dams-1	6	16.421
		Kasargod	Check Dams-1 Rain water Harvesting, Artificial recharge-1		13.56
		Trivandrum	Sub-surface Dam -1 Rain water Harvesting, Artificial recharge-1		32.943
3	Madhya Pradesh	Dewas	Percolation Tank-1 stop Dam-11 Recharge shaft-1 Gabion structure-10 Roof Top Rain Water Harvesting-2 Sub surface Dyke-1 Piezometer-15 (for monitoring)	41	49.06
		Betul	Percolation Tank-1 Check Dam-23 Recharge shaft-3 Piezometer-40 (for monitoring)	67	99.81
4	Tamil Nadu	Salem	Percolation pond, Check Dam with recharge wells, Percolation Pond with recharge wells	41	223.15
5	Telangana	Mahabubnagar	Check Dams-3 Percolation Tank-6 Roof Top Rain Water Harvesting-30 Recharge Pits-5 Sumps-2 Desilting of Pond-1 Piezometers-6	52	
6	UT of Lakshadweep	Kavaratti	Rain water Harvesting, Artificial recharge-1	1	11.01
<b>Total</b>				<b>189</b>	<b>445.954</b>

XI Plan (2007-2012)					
S.No.	State	District	Type of Structure Constructed	Total Structure Constructed	Cost (in Lakhs)
1	Andhra Pradesh	Chittoor	Check Dam-28 Percolation Tank-1	29	
2	Bihar	Jamui	Check Dam-6	11	
		Munger	Checkdam-5		
3	Gujarat	Patan	Recharge Tubewells-20 Piezometers-6	26	146.33
4	Himachal Pradesh	Kangra	Check Dam-4	13	
		Sirmaur	Check Dam-1		
		Una	Bore Well Recharge-1		
		Hamirpur	SSD-1 Check Dam-4 Rain Water Harvesting-1		
		Solan	Rain Water Harvesting-1		
5	Jammu and Kashmir	Kathua	Check Dam-2	4	
		Jammu	Check Dam-1		
		Udhampur	Check Dam-1		
6	Jharkhand	Ranchi	Recharge Pit with Recharge Bore Well-54	54	
7	Kerala	Karargod	Artificial recharge Structure-5 Renovation of Existing Pond-1	6	25.77
		Palakkad	Rain Water Harvesting-1		4.32
8	Madhya Pradesh	Ratlam district	Stop dam-14 Recharge shaft-14 Piezometer-14 (for monitoring)	153	302.68
		Ujjain District	Percolation tank -1 Recharge trench -1 stop dam-3 Recharge shaft-19 Gabion-6 Subsurface dyke-4 Step recharge trench-2		138.07
		Dhar district	Percolation tank -1 Recharge shaft-47 Piezometer-27 (for monitoring)		162.95
9	Maharashtra	Nagpur	Loose Boulder Structure-32 Earthen Structure-2 Gabion Structure-8 Earthen Nala Bandh-3 Cement Nala Bandh-1 Pond-3	49	15.15
10	Tamil Nadu	Salem	Desilting of ponds, percolations ponds with recharge bore wells-66	338	111
		Namakkal	Check Dam-10 Recharge Shaft -20 Recharge Bore Wells - 20 De-silting of Ponds - 2		275.35
		Coimbatore	Recharge Bore Wells - 215		100

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		Chennai	Percolation Pond , Recharge bore well, Roof Top Rainwater Harvesting -5	(21)	40
11	Telangana	Medak	Check Dam-34 Percolation Tank-18 Peziometers-52	151	
		JNTU, Hyd	Recharge Shaft-6 Peziometers-3 Roof Top Rain Water harvesting -7 Peziometers ( for monitoring)-3		
		KU, Warangal	Check Dam-9 Percolation Tank-4 Gabion Structure-1 Roof Top Rainwater Harvesting-9 Peziometers (for monitoring)-3		
		CGWB, Hyd	Check Dams-2		
12	Uttar Pradesh	RaiBareli (Sataon)	Check dam-16 Recharge well -12 Recharge trench-180 Recharge pit -920 Piezometer-20 (for monitoring)	1369	720.06
		Lucknow	Artificial recharge Structure-116		1060.6
		Jhansi	Check Dams-32		990.88
		Rai Bareli (Sarein&Lalganj)	Check Dam - 13 Recharge Trench - 50 Piezometers-10		514.65
<b>Total</b>				<b>2203</b>	<b>4607.9</b>



Other Artificial Recharge Projects							
S.No.	Name of the Project	State	District	Type of Structure Constructed	Total Structure Constructed	Cost (in Crores)	Status
1	Aspirational Districts (2018-2020)	Andhra Pradesh	YSR Kadapa	Check dams- 16 Percolation tanks-4 Sub-surface barrier-1 Recharge shaft- 36 Piezometers (for monitoring)-12	69	54.38	Completed
		Maharashtra	Osmanabad	Check Dam-55 Piezometers- 20 Recharge wells-46	121		
		Telangana	Warangal	Check Dam-6 Sub-surface barrier-1 Piezometers- 9 Recharge shaft- 31	47		
2	Construction of Bridge Cum Bandhara(BCB) (2018-2020)	Maharashtra	Wardha	BCB-1	5	30.29	Completed
				BCB-1			
				BCB-1			
			Amravati	BCB-1			
3	AR Project Rajasthan Phase I (Ongoing since 2019)	Rajasthan	Jodhpur	Zoned Earth Fill Dam with Clay Core	1	15.21	Ongoing
			Jodhpur	Concrete Gravity Dam	1	19.42	Ongoing
	AR Project Rajasthan Phase II (Ongoing since 2019)	Rajasthan	Jodhpur	Check Dam-54 Anicut-24	80	74.32	Ongoing
			Jaisalmer	Recharge Shaft-2			
			Sikar				
	AR Project Rajasthan Phase III (Ongoing since 2019)	Rajasthan	Jodhpur	Check Dam-4	4	61.82	Ongoing
			Anicut-7	7			
Alwar			Anicut-1	1			
Barmer			Check Dam-2	2			
			Anicut-2	2			
	Jaisalmer	Check Dam-2	2				
<b>Total</b>					<b>342</b>	<b>255.44</b>	

*Handwritten Signature*