Tableau Project

ASSESSING GROUNDWATER EXTRACTION AND RECHARGE PATTERNS IN INDIA

A COMPREHENSIVE ANALYSIS BY CITY AND STATE

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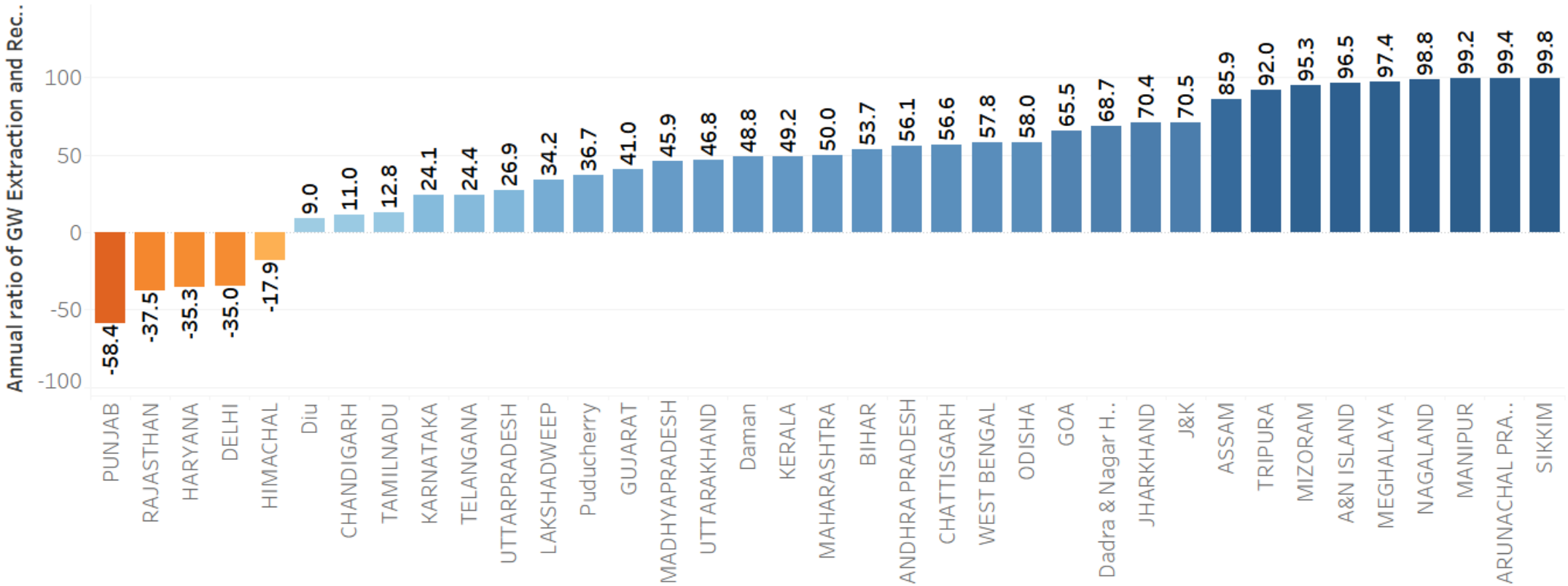
Ground Water Extraction & Recharge Analysis

Top GW usage (L-H)
37

Annual Stage Ground Water Extraction and Recharge

Stage of Ground Water ..
-58.4 99.8

Sheet 4



Punjab,Rajasthan,Haryana,Delhi,Himachal are Using More Ground Water Than Annual Ground Water Recharge .so They Need To Focus on increases an Ground Water Level

Ground Water Extraction & Recharge Analysis

Top States
37

Total Ground Water Usage(%)

Measure
-61.9 144.4

Name of State	Agriculture(%)	Domestic & Industrial(%)	Natural Discharge(%)	Remaining(%)
PUNJAB	144.4	5.1	9.8	-59.3
RAJASTHAN	112.4	14.6	9.2	-36.2
HARYANA	113.7	9.6	10.0	-33.2
DELHI	28.2	83.9	6.3	-18.4
Diu	69.4	12.5	10.0	8.1
CHANDIGARH	1.4	78.7	10.0	9.9
LAKSHADWEEP	0.0	22.2	66.4	11.4
HIMACHAL	40.0	37.7	10.0	12.3
TAMILNADU	64.6	8.3	10.0	17.2
KARNATAKA	55.7	5.6	12.1	26.5
SIKKIM	0.0	0.0	73.0	27.0
UTTARPRADESH	58.5	7.1	6.6	27.9
TELANGANA	52.1	7.3	9.2	31.4
GUJARAT	57.4	3.3	5.0	34.3
GOA	7.7	12.4	40.0	39.9
UTTARAKHAND	42.8	11.2	5.0	41.0
MADHYAPRADE..	47.8	4.0	5.3	42.8
MAHARASHTRA	47.7	3.9	5.5	42.9
KERALA	21.2	25.2	9.7	44.0
Daman	30.8	17.9	5.0	46.3
BIHAR	34.3	7.9	7.7	50.1
WEST BENGAL	37.0	3.4	9.5	50.2
CHATTISGARH	34.4	6.2	8.7	50.7
ANDHRA PRADE..	37.0	4.9	5.0	53.0
ODISHA	31.6	7.7	7.0	53.8
J&K	6.8	19.4	10.0	63.8
Dadra & Nagar H..	10.9	18.8	5.0	65.2
JHARKHAND	12.8	12.6	8.4	66.2
TRIPURA	1.3	5.1	18.8	74.8
ASSAM	6.9	2.6	15.4	75.1
MIZORAM	0.0	3.4	10.0	86.6
MEGHALAYA	1.5	0.5	10.6	87.4
A&N ISLAND	0.0	2.4	10.0	87.5
ARUNACHAL PR..	0.0	0.2	11.8	87.9
MANIPUR	0.8	0.5	10.0	88.7
NAGALAND	0.1	0.8	10.0	89.1

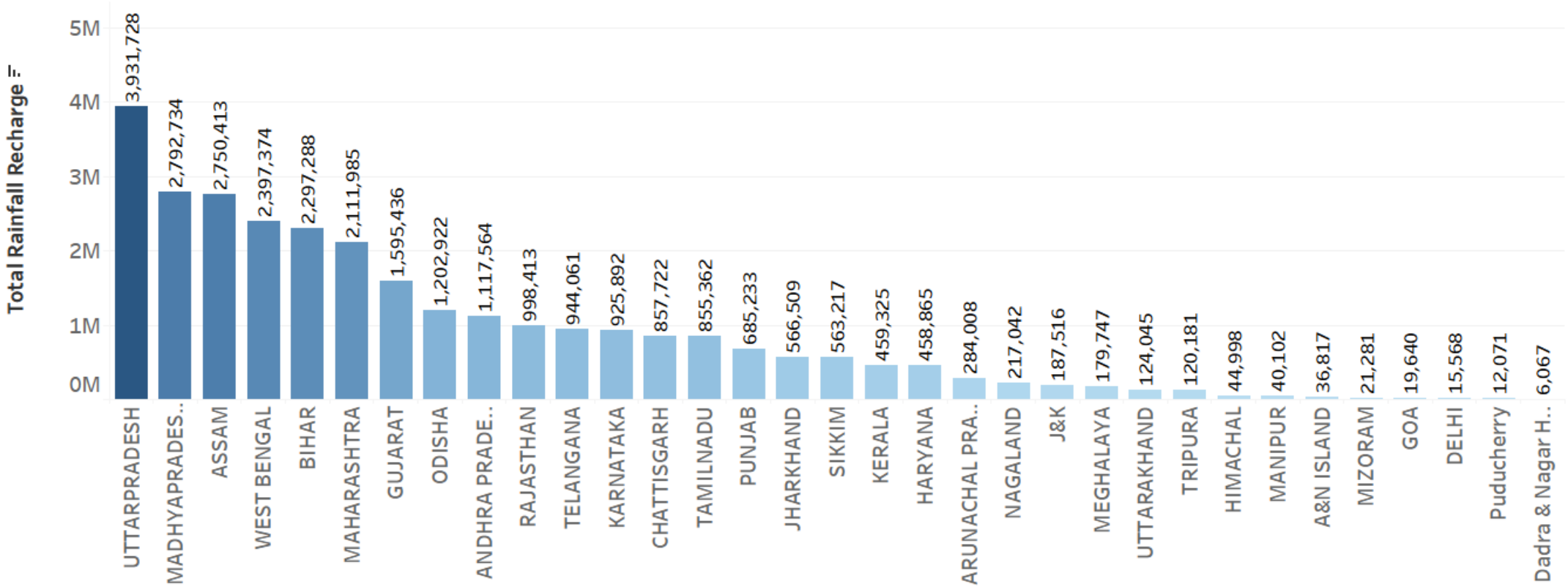
Punjab,Rajasthan ,Haryana has Use More Ground Water For Agriculture.Delhi has More GW For Domestic and Industrial Use.So They Need to focus on Irrigation Method like Dip Irrigation,Spring Irrigation etc., to Save GW Usage and Delhi Focus To Provide Subsidy on Building RainWater Harvesting or Recharge on Each Home

Ground Water Extraction & Recharge Analysis

Top Rainfall Recharge
33

Ground Water Recharge By Rainfall

Total Rainfall Recharge
6,067 — 3,931,728



UP,MP,Assam Has More Gw Recharge By Rainfall. And TN had been at 14th place so Tn, Needs to Increase an Recharge Well ,Perculation Pit,and Storage Reserviors Like pond,lake to improve GW Recharge

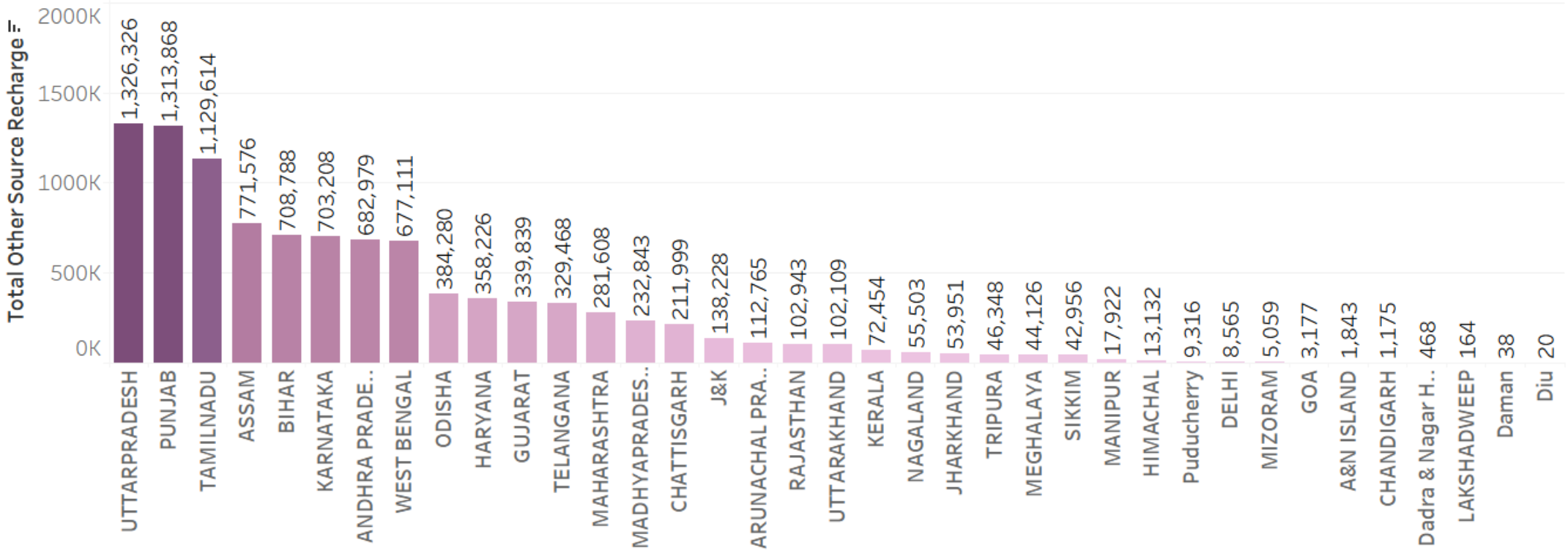
Ground Water Extraction & Recharge Analysis

Top GW Other Source
37

Recharge Ground Water From Other Source

Total Other Source Rec..
20 1,326,326

Recharge GW from Other Source



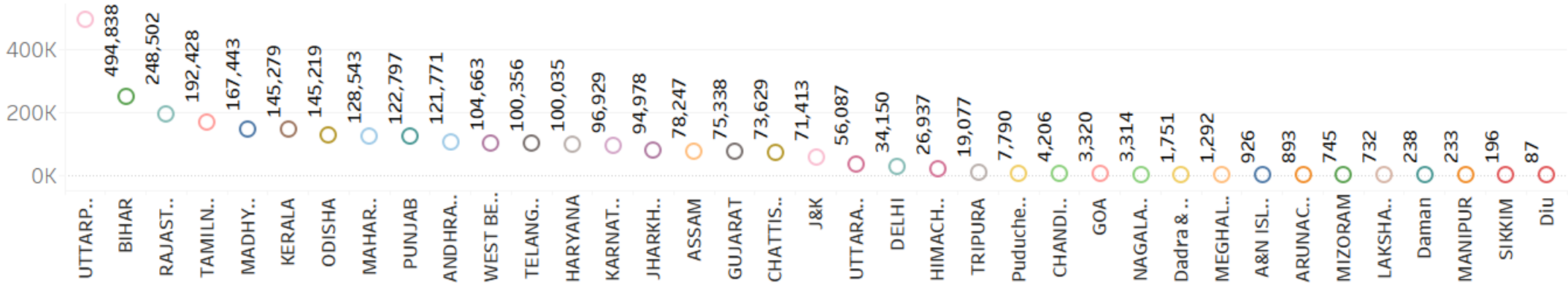
UP,Punjab,TN are the Top most Recharge GW other Than rainfall by **Rivers & lakes**,**WetLands**(which loose soil allowswater infiltrates into the groundwate) **Depression focused recharge** & then **ArtificialRecharge Structures** like borewell recharge Dam and open Well

Ground Water Extraction & Recharge Analysis

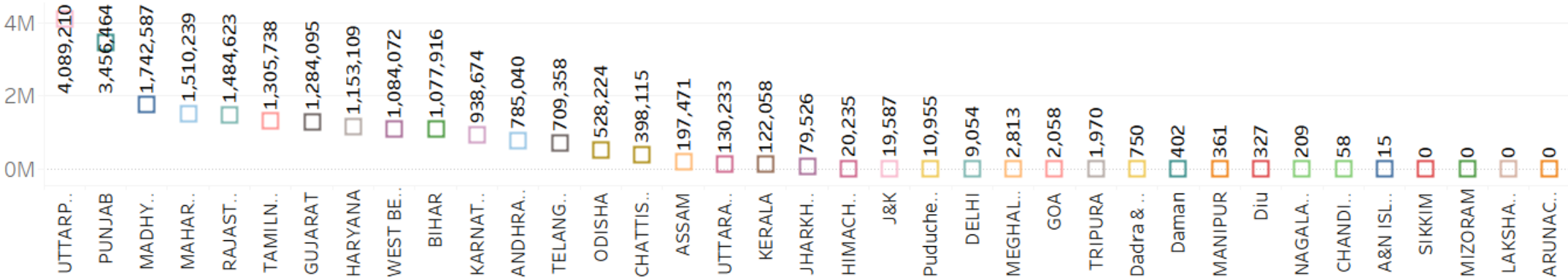
Annual Ground Water Extraction

Top Extraction
37

GW Extraction For Domestic & industry



GW Extract For Agriculture



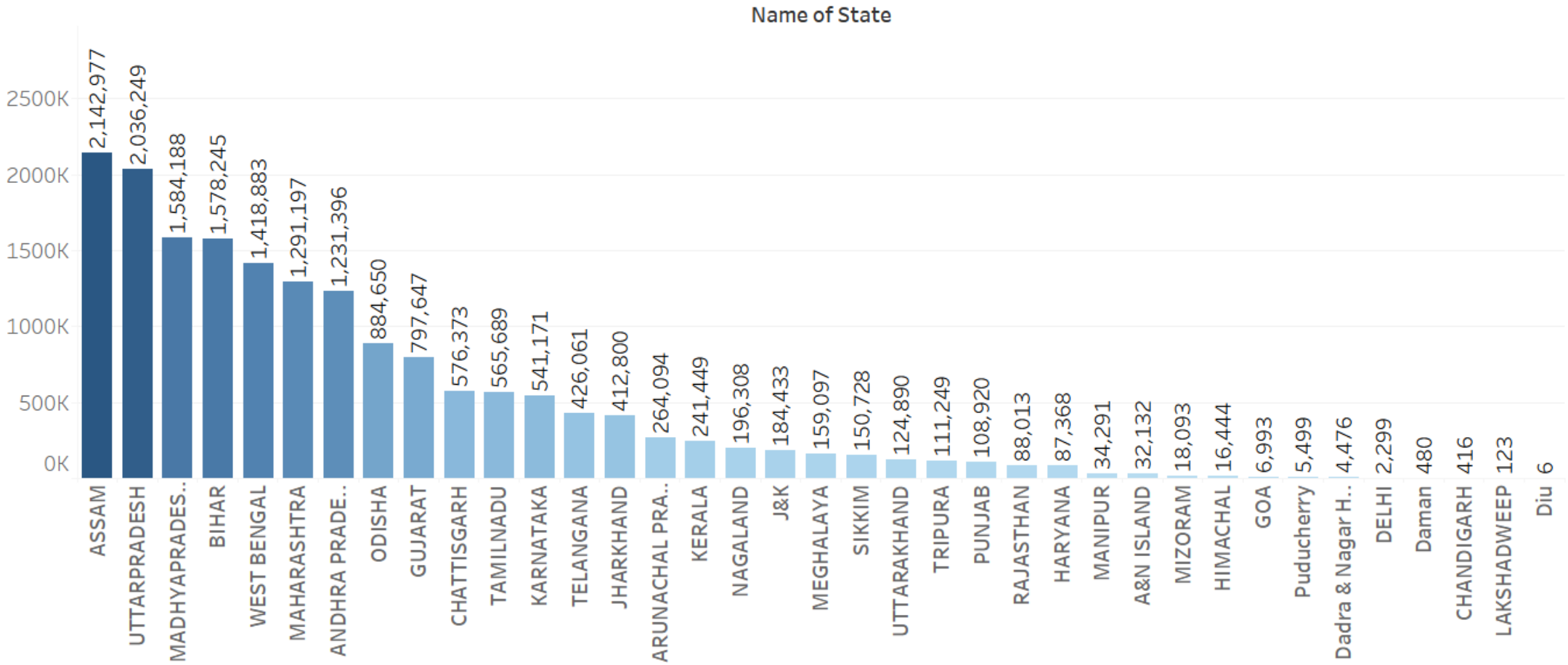
UP is Higher Extraction of GW,and TN is 6th Place GW usage For irrigation & 4th at Domestic and Indutial uses,Most of the States are Using High Amount of GW for Agriculture. Cities like Chennai,Delhi,Mumbai are Using High GW for Domesic and Industrial(Rapidly Growing Urban Cities)

Ground Water Extraction & Recharge Analysis

Top Ground Water Avaliablity
37

Availablity of Ground Water

Availablity Ground water
6 — 2,142,977



Assam,UP,MP had More Availablity of GW and TN and Karnataka at 11th and 12th place ,its an Good But We need to improve our Waste Water Treatment ,low indrustial water consumption Technique and Machines to Maitain or increase our GW

Ground Water Extraction & Recharge Analysis

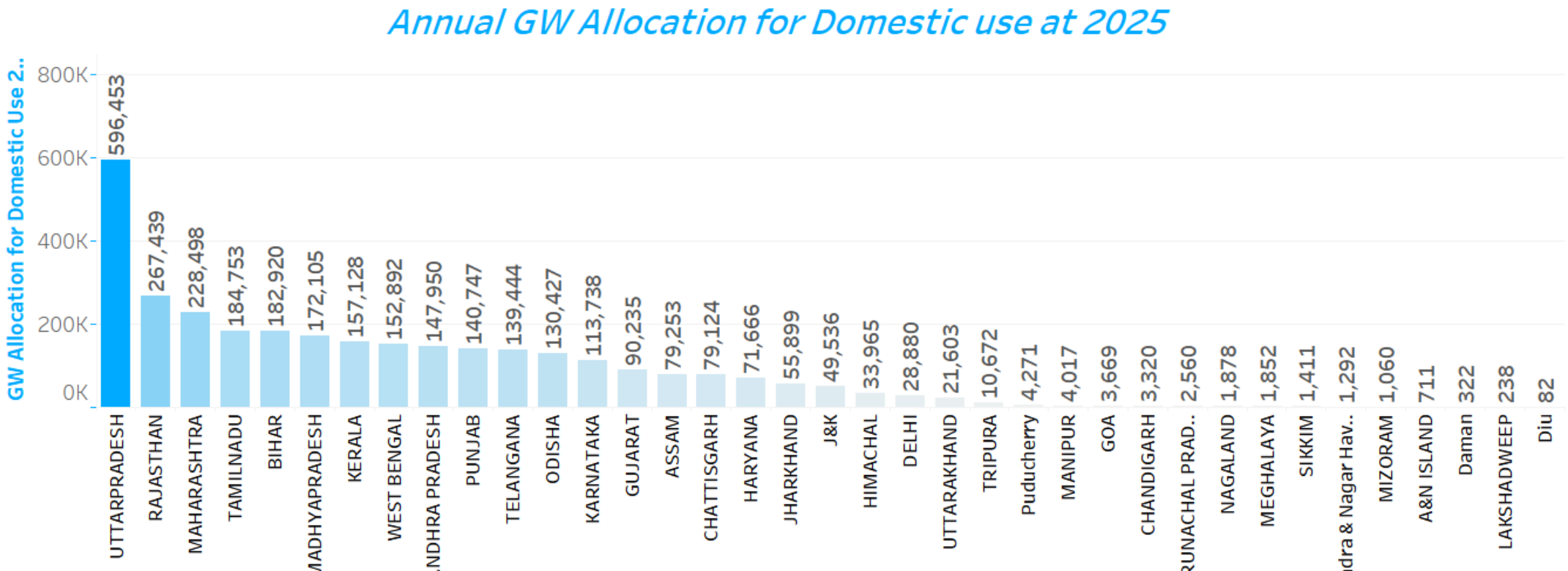
State & District Ground water Detials

Choose State: All

Name of State: All

Name of District: All

Agriculture(%)	Domestic & Industrial(%)	Natural Discharge(%)	Remaining(%)	Rainfall Recharge	Other Source Recharge
51.30%	6.31%	9.07%	33.32%	28,825,904	10,283,993



Ground Water Extraction & Recharge Analysis

GW Extraction & Recharge | Total GW Usage(%) | GW Recharge Rainfall | GW Recharge Other Source | GW Extraction | Availablity of GW Future | State &District GW Detials | INFERENCES

Inference GW Management Of TN:

1.Groundwater usage: 89% of agricultural land is irrigated using groundwater.

2.Surface water potential: 95% of the surface water potential has been put into use.

3.Groundwater potential: 80% of the groundwater potential has been put into use.

4.Groundwater recharge: 22,423 MCM is the utilisable groundwater recharge.

5.Surface water potential: 24,160 MCM is the total surface water potential of the river basins of Tamil Nadu.

6.So TN should Focus on Surface Water like Rivers Vaigai,The Kaveri and Palar rivers are used extensively for agriculture in Tamil Nadu

7.Other prominent rivers in Tamil Nadu include: Bhavani, Noyil, Cheyyar.

8. Major Sources of GW Recharge in Tn:

i)Rainfall

ii)Return flow from irrigation

iii)Canal seepage

iv)Recharge from water bodies

Water conservation structures

9.In 2020, 41% of groundwater replenishment in Tamil Nadu was due to rainfall, and the remaining 59% was due to other sources. Groundwater contributes around 34% of the total annual water supply.

10.Canals are the major source of irrigation in Tamil Nadu. The Mettur Dam provides irrigation and drinking water facilities for more than 12 districts of Tamil Nadu