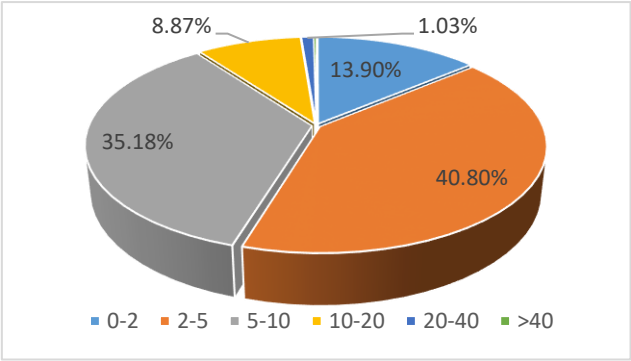

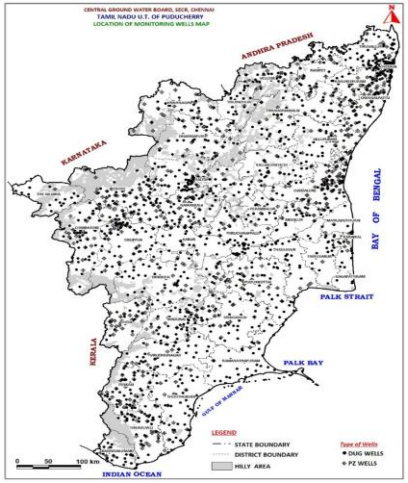

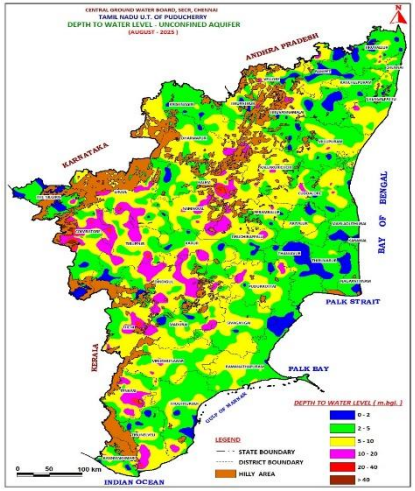

GROUND WATER LEVEL BULLETIN
August 2025
TAMILNADU & UT OF PUDUCHERY

ABSTRACT

Ground water level Scenario during August – 2025 highlighting the findings, status of ground water level in different aquifers and its annual and decadal comparison

CGWB, SOUTH EASTERN COASTAL REGION, CHENNAI

1.0 INTRODUCTION

Groundwater bulletin is prepared by CGWB depicting changes in groundwater regime of the country through different seasons. It is an effort to obtain information on groundwater levels through representative monitoring wells. The important attributes of groundwater regime monitoring are groundwater level.

The natural conditions affecting the groundwater regime involve climatic parameters like rainfall, evapotranspiration etc, whereas anthropogenic influences include pumping from the aquifer, recharge due to irrigation systems and other practices like waste disposal etc.

Groundwater levels are being measured by Central Ground Water Board four times a year during January, May, August and November. The regime monitoring started in the year 1969 by Central Groundwater Board.

2.0 STUDY AREA

The state of Tamil Nadu has a geographical area of 1,30,058 sq. km. and is situated between N. Latitudes 08°00" and 13°30' and E. Longitudes 76°15' and 80°18'. The state is bounded by the Bay of Bengal in the east, the Indian Ocean in the south, the state of Kerala in the west and the states of Karnataka and Andhra Pradesh in the north. For administrative purposes, the state is divided into 38 districts, 317 Taluks, 1202 Firkas and 16744 Revenue Villages. A major part of the Union Territory of Puducherry comprising Puducherry and Karaikal regions occurs as small enclaves in Tamil Nadu. Figure.1 Shows the major aquifer units of the State.

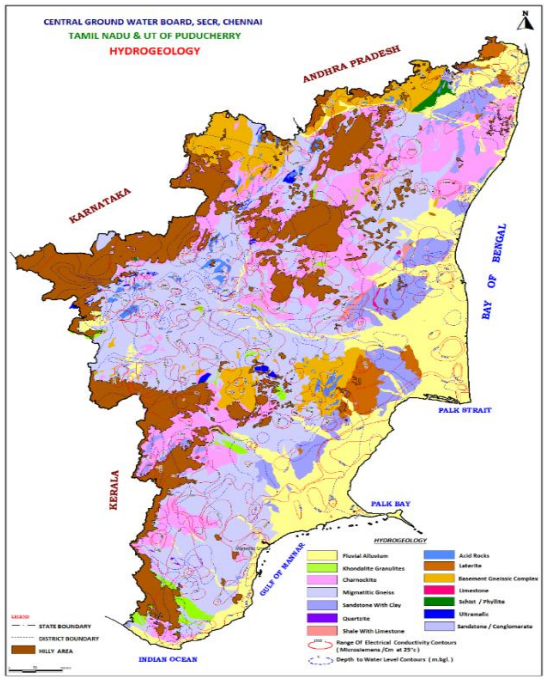

Figure1:Map showing major aquifers and administrative divisions of Tamil Nadu and UT of Puducherry

The state of Tamil Nadu is divided into four physiographic units viz. (i) Coastal Plains, (ii) Eastern Ghats, (iii) Central Plateau and (iv) Western Ghats. The coastal plains stretch over a distance of about 998 km. from Pulicat Lake to Cape Comorin, ranging in elevation between 2 and 30 m above mean sea level. The coastal plains are further sub-divided into (a) the Coromandel Coast comprising parts of the districts of Tiruvallur, Kancheepuram and Cuddalore, (b) the alluvial plain of Cauvery delta extending over Nagappattinam, Thanjavur Thiruvarur districts and (c) the dry southern plains comprising parts of

Pudukkottai, Ramanathapuram, Tuticorin, Tirunelveli and Kanyakumari districts.

The chain of flat-topped hills of Javadis, the Shevroy, the Kalrayan and the Pachamalai hills, which are joining Cardamom hills in the south, form the Eastern Ghats. These hills rise steeply above plateau level to 1160 m above mean sea level in the Javadi hills and to 1645 m above mean sea level in the Shevroy hills.

Between the Eastern and Western Ghats lies the plateau area known as the "Central Plateau" comprising the districts of Erode and Coimbatore with elevations between 150 and 610 m above mean sea level thereby giving rise to an undulating topography. West of the region lies the broad Palghat gap between the Nilgiri and Anaimalai Hills. Between Cauvery River and the Palghat gap lies an extensive low plateau rising gradually from 120 to 180 m above mean sea level, along the tributaries of the Cauvery River, to 365 to 455 m above mean sea level in the west.

The plateau is fringed on the west by a group of high hills known as the Western Ghats, comprising the western part of the Nilgiri, Madurai and Kanyakumari districts. On the other side of the Palghat gap, the high mountains of the Peninsula dominate. These are the Nilgiri in the north, Anaimalai Hills, Palani and Cardamom hills in the south, with a summit level of 1830 to 2440 m above mean sea level rising sharply from the plateau.

3.0 GROUND WATER LEVEL MONITORING

Central Ground Water Board, South Eastern Coastal Region, is monitoring changes in ground water regime Tamil Nadu State and UT of Puducherry on quarterly basis continuously. This is facilitated by a network of monitoring stations in the State located in diverse hydrogeological and geomorphic units. The number of operational wells after completion of August 2025 monitoring stands at 2091 which include 1353 dug wells and 739 Piezometers. The district-wise breakup of the water level monitoring stations is given in **Table-1**

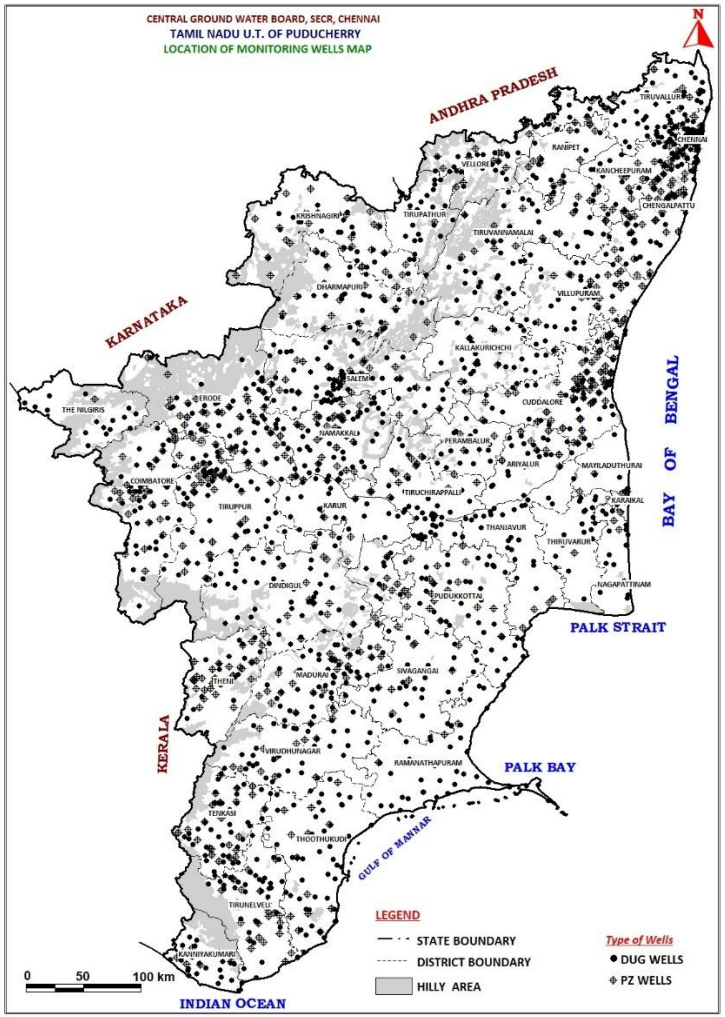

Figure-2: Maps showing locations of monitoring wells (NHNS) in Tamil Nadu and UT of Puducherry

Table-1:District-wise distribution of water level monitoring stations

SR. No.	District	DW	PZ	Total
1	Ariyalur	20	15	35
2	Chengalpattu	20	22	42
3	Chennai	40	8	48
4	Kancheepuram	53	24	77
5	Coimbatore	49	62	111
6	Cuddalore	46	81	127
7	Dharmapuri	32	19	51
8	Dindigul	47	15	62
9	Erode	71	53	124
10	Kallakurichi	10	8	18
11	Villupuram	54	20	74
12	Kanyakumari	24	9	33
13	Karur	23	14	37
14	Krishnagiri	30	33	63
15	Madurai	52	34	86
16	Mayiladuthurai	5	3	8
17	Nagapattinam	17	9	26
18	Namakkal	54	30	84
19	Nilgiris	14	2	16
20	Perambalur	20	5	25
21	Pudukkottai	42	21	63
22	Ramanathapuram	37	5	42
23	Ranipet	3	7	10
24	Tirupattur	3	1	04
25	Vellore	45	21	66
26	Salem	73	14	87
27	Sivaganga	30	6	36
28	Thanjavur	33	4	37
29	Theni	17	35	52
30	Tirunelveli	55	37	92
31	Tenkasi	27	9	36
32	Tiruppur	28	0	28
33	Tiruvallur	61	14	75
34	Tiruvannamalai	57	26	83
35	Tiruvarur	17	3	20
36	Toothukudi	44	15	59
37	Trichy	51	21	72
38	Virudhunagar	38	17	55
	Puducherry (UT)			
1	Karaikal	7	5	12
2	Puducherry	4	12	16
	Total	1353	739	2092

4.0 RAINFALL

The rainfall data collected and compiled from weekly and monthly weather reports from India Meteorological Department were used to analyse the rainfall for the period 01.04.2025 to 30.04.2025. Figure.3 shows the district-wise rainfall distribution for the period 1st July 2025 to 31st July 2025. District-wise distribution of Rainfall from 1st July 2025 to 31st July 2025 is given in Table-2.

Figure-3: Rain fall distribution (01.07.2025 to 31.07.2025) from normal rainfall

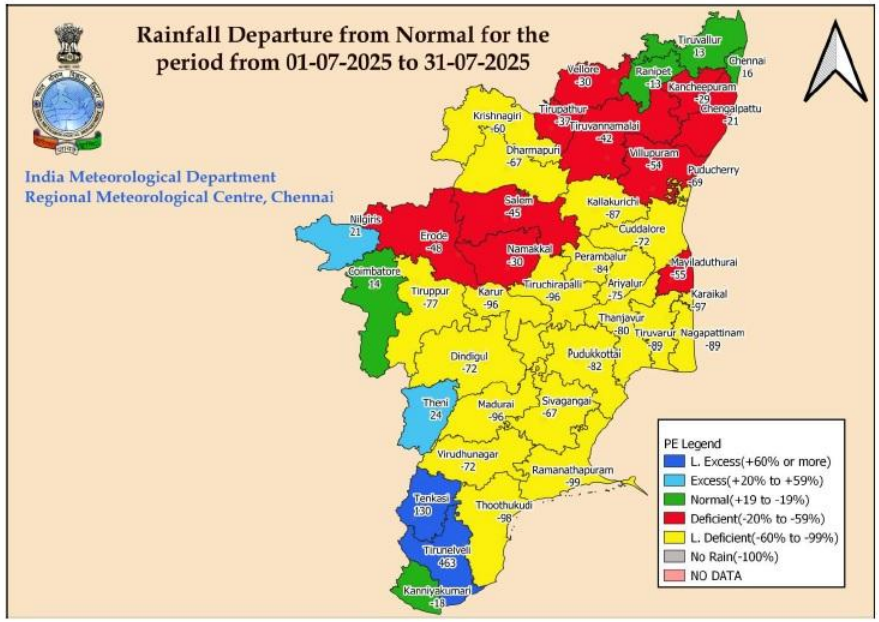

Table-2:District-wise distribution of Rainfall from 01.07.2025 to 31.07.2025

RAINFALL STATEMENT			
	Seasonal rainfall for the period from 01-07-2025 to 31-07-2025		
Districts	Actual (mm)	Normal *(mm)*	Departure (%)
Ariyalur	13.7	54.2	-75
Chengalpattu	72.3	91.2	-21
Chennai	125	107.3	+16
Coimbatore	252.6	220.8	+14
Cuddalore	19.3	70	-72
Dharmapuri	22.5	67.3	-67
Dindigul	14.3	50.5	-72
Erode	24	46.2	-48
Kallakurichi	10.6	78.3	-87
Kanchipuram	77.8	109.1	-29
Kanyakumari	88.4	108	-18
Karaikal	1.6	51.9	-97
Karur	1.3	29.6	-96
Krishnagiri	25.1	62.6	-60
Madurai	2.5	56	-96
Mayiladuthurai	23.9	52.6	-55
Nagapattinam	5.3	47.1	-89
Namakkal	42.8	61.1	-30
Nilgiris	297.1	245.6	+21
Perambalur	6.3	39.6	-84
Puducherry	23.8	77	-69
Pudukottai	10.2	57.7	-82
Ramanathapuram	0.3	25.2	-99
Ranipet	94.1	108.7	-13
Salem	43.9	80.3	-45
Sivagangai	24.8	74.2	-67
Thenkasi	94.7	41.2	+130
Thanjavur	11.9	58.3	-80
Theni	62.5	50.3	+24

RAINFALL STATEMENT			
	Seasonal rainfall for the period from 01-07-2025 to 31-07-2025		
Tirunelveli	92.9	16.5	+463
Tirupathur	54.6	86.4	-37
Tiruppur	5.1	21.8	-77
Tiruvallur	120.9	106.7	+13
Tiruvannamalai	54.2	94.1	-42
Tiruvarur	6.3	58.9	-89
Toothukudi	0.2	10.7	-98
Tiruchirapalli	1.8	46.1	-96
Vellore	68	97.4	-30
Villupuram	38.6	84.1	-54
Virudhunagar	10.1	35.6	-72
Tamilnadu Subdivision	45.4	69	-34
Puducherry&Karaikal	16	68.1	-77
Tamilnadu State	45.5	69	-34

Largely deficient	Deficient	Normal	Excess	Large Excess	No rain
-60% to -99%	-20% to -59%	-19% to +19%	+20% to +59%	≥ 60%	-100%

5.0 GROUND WATER LEVEL SCENARIO (AUGUST 2025)

5.1 Shallow Aquifer (Unconfined)

5.1.1 Depth to Water Level

The depth to water level of 1353 wells is used for the analysis. Analysis of depth to water level data of 1353 wells shows water levels ranged from 0.04m bgl Thiruvannamalai district) to 64.9 m bgl (Coimbatore District) in Tamil Nadu and UT of Puducherry. Water level of less than 2 m bgl is recorded in 13.90 % of wells, between 2 to 5 m bgl in 40.80% of wells, between 5 to 10 m bgl in 35.18 % of wells, between 10 to 20 m bgl in 8.87 % of wells, between 20-40 m bgl in 1.03 % of wells and more than 40 m bgl are less than 1% of wells.

Overall, 90 % of the wells monitored in the state and UT are in <10 m bgl range and spreaded over entire Tamil nadu. 8.87 % of wells show depth to water level between 10 to 20 m bgl noted mainly in Coimbatore, Erode, Dindigul and Theni districts. Less than 1 % of wells show depth to water level more than 40 m bgl in Coimbatore and Namakkal districts. Depth to water level of less than 2 m bgl has been recorded in 13.90 % of wells analysed and noted in all over the State except Theni, Tenkasi and UT of Puducherry. Depth to water level in the range of 2 to 5 m bgl has been recorded in 40.80 % of wells analysed and noted in all the districts. Depth to water level in the range of 5 to 10 m bgl has been recorded in 35.18 % of wells analysed and noted in all over the State except Karaikal region of UT of Puducherry and Nilgiris& Nagapattinam districts.

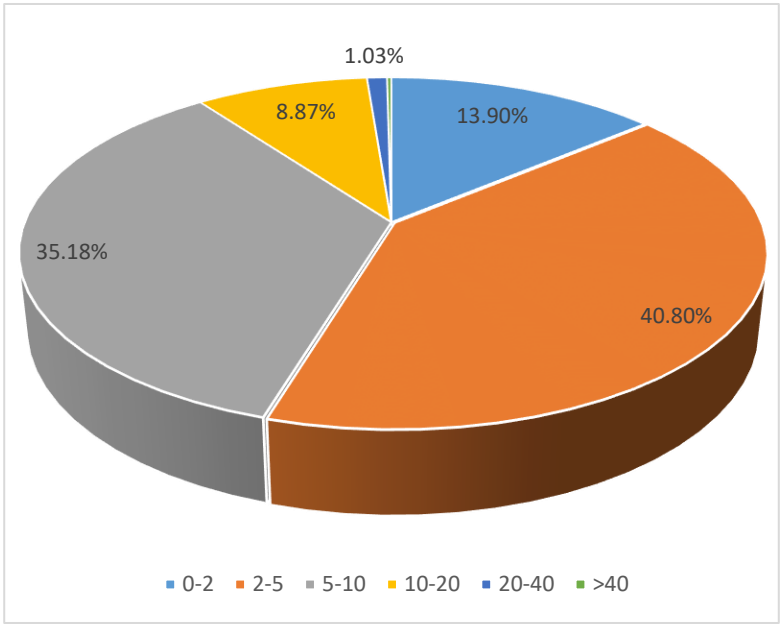

Figure-4: Percentage of wells in different water level ranges in unconfined aquifer.

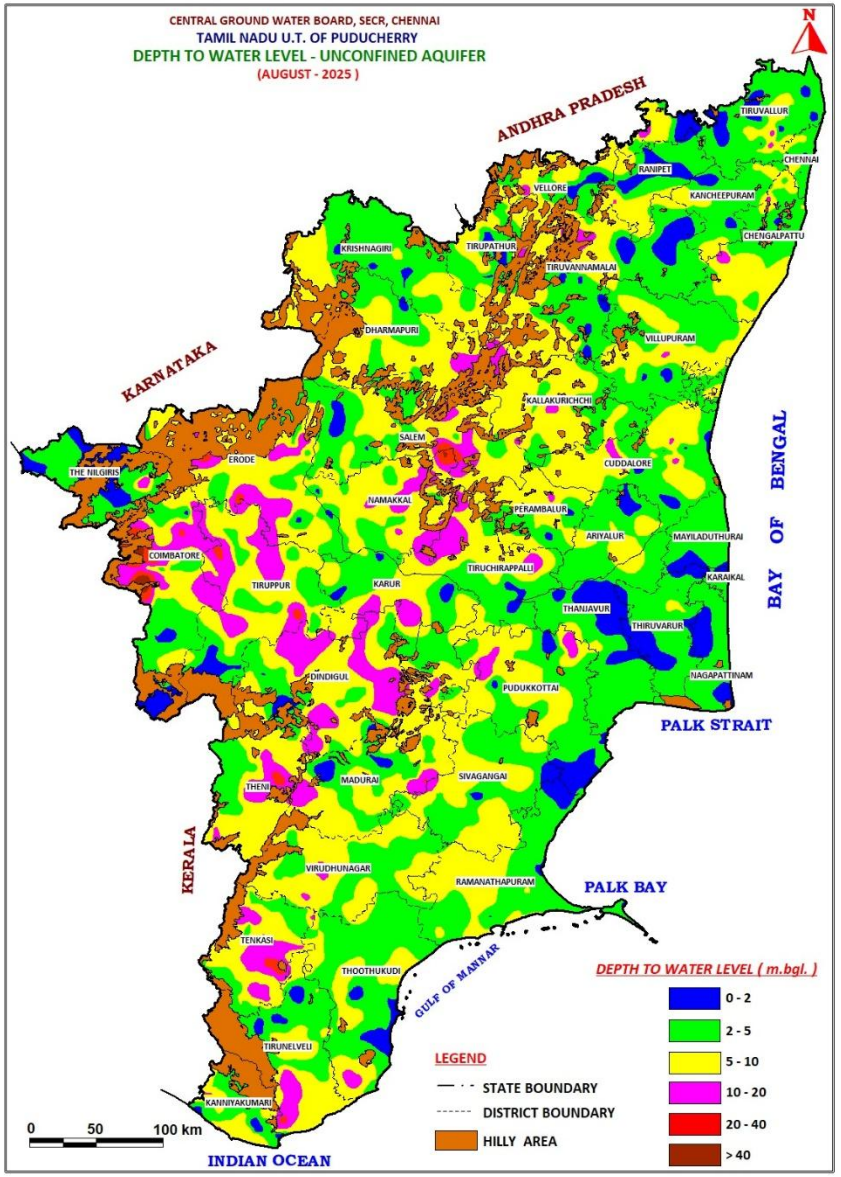

Figure-5: Depth to water level of unconfined aquifer during August 2025

5.1.2 ANNUAL FLUCTUATION IN WATER LEVEL

Annual Fluctuation of Water Level in Unconfined Aquifer (August 2024 to August 2025)

Rise in Water Levels:

Out of 737 wells, water level rise of less than 2 m is recorded in 35.01% wells, 2 to 4 m in 7.19 % wells and more than 4 m in 3.66 % of the wells. Water level rise of less than 2 m is seen in all the districts. Water level rise of 2 to 4 m is observed in all the districts except Kanyakumari, Chennai, Dindigul and UT of Puducherry. Rise of more than 4 m is significantly observed in Erode, Dharmapuri and Namakkal districts.

Fall in Water Levels:

Out of 737 wells, water level fall of less than 2 m is recorded in 39.62 % wells, 2 to 4 m in 9.91 % wells and more than 4 m in 4.61 % of the wells. Water level fall of less than 2 m is seen in all the districts except Karaikal region of UT of Puducherry. Water level fall of 2 to 4 m is observed mainly in districts such as Erode and Salem, Kancheepuram and Villupuram. Rise of more than 4 m is significantly observed in Kancheepuram, Salem and Erode districts.

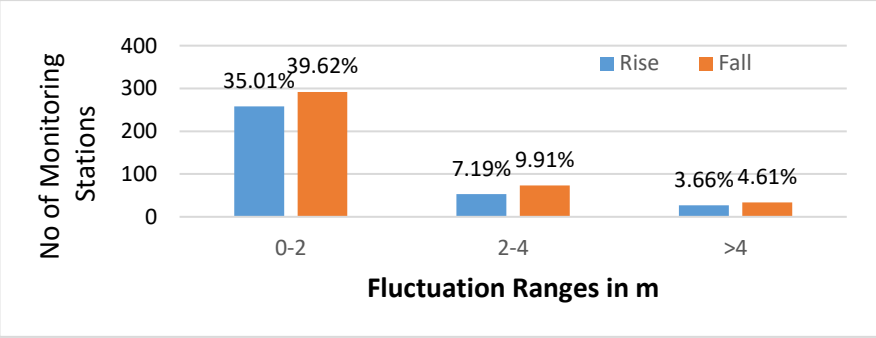

Figure-6: Percentage of wells showing rise and fall in WL in unconfined aquifer (August 2024 & August 2025)

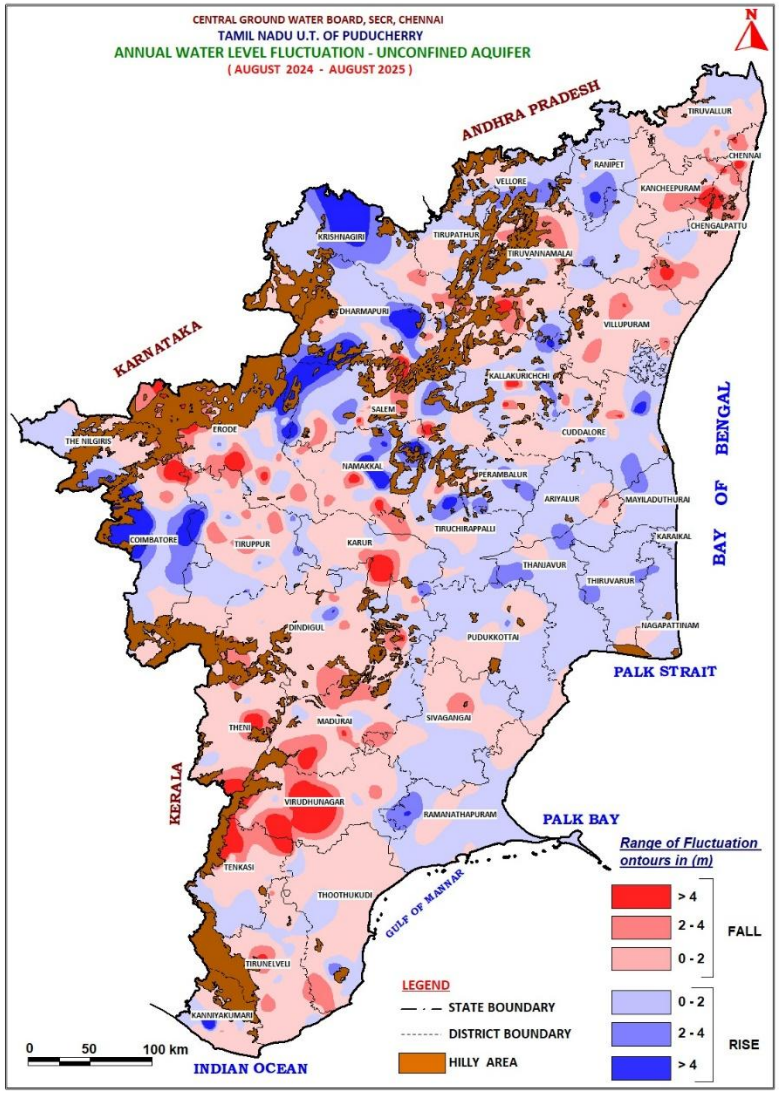

Figure-7 Annual water level fluctuation in unconfined aquifer (August 2024 & August 2025)

Annual Fluctuation of Water Level in Unconfined Aquifer (August 2023 to August 2025)

Rise in Water Levels:

Out of 699 wells, water level rise of less than 2 m is recorded in 39.91% wells, 2 to 4 m in 11.59 % wells and more than 4 m in 5.87 % of the wells. Water level rise of less than 2 m is seen in all the districts. Water level rise of 2 to 4 m is noted in all the districts except Ariyalur, Chennai, Perambalur, Thanjavur, Karur and UT of Puducherry. Rise of more than 4 m is significantly observed in Coimbatore, Dharmapuri and Tirunelveli districts.

Fall in Water Levels:

Out of 699 wells, water level fall of less than 2 m is recorded in 30.04 % wells, 2 to 4 m in 7.44 % wells and more than 4 m in 5.15 % of the wells. Water level fall of less than 2 m is seen in all the districts except Ariyalur, Kanyakumari and Karaikal region. Water level fall of 2 to 4 m is observed in all the districts except in districts such as Dindigul, Erode, Kancheepuram and Namakkal Districts. Fall of more than 4 m is significantly observed in Erode and Salem districts.

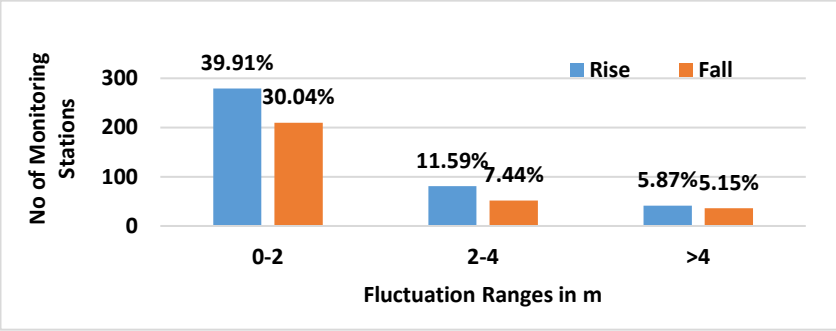

Figure-8: Percentage of wells showing rise and fall in WL in unconfined aquifer (August 2023 & August 2025)

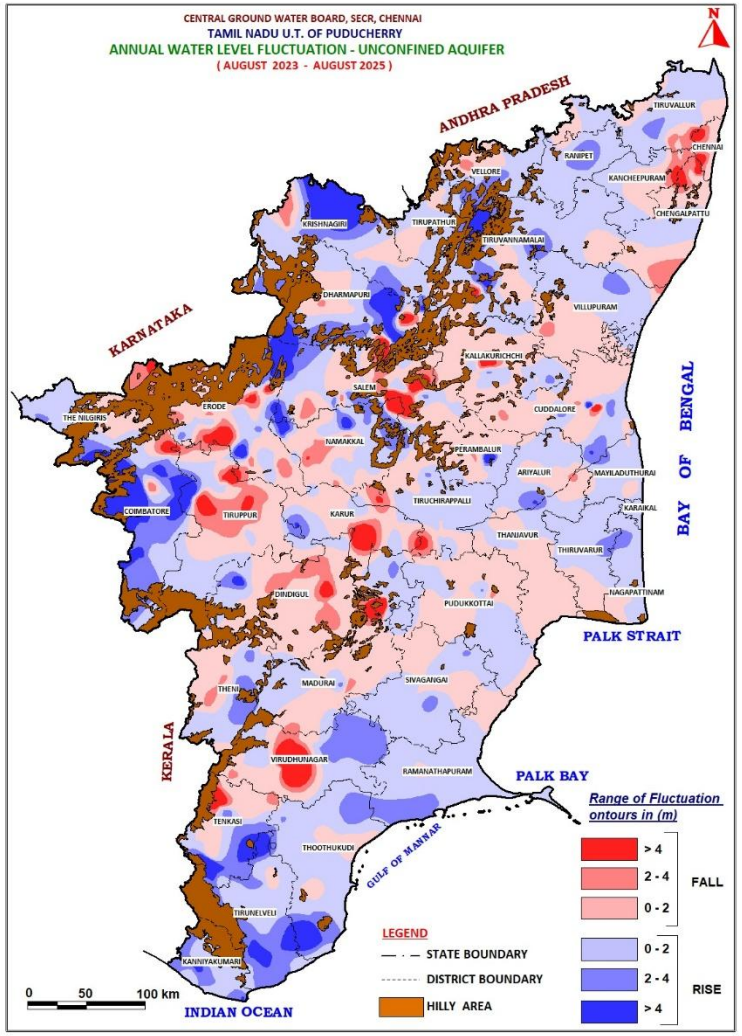

Figure-9: Annual water level fluctuation in unconfined aquifer (August 2023 & August 2025)

Annual Fluctuation of Water Level in Unconfined Aquifer (August 2022 to August 2025)

Rise in Water Levels:

Out of 725 wells, water level rise of less than 2 m is recorded in 27.31 % wells, 2 to 4 m in 6.90% wells and more than 4 m in 1.79 % of the wells. Water level rise of less than 2 m is seen in all the districts, except in Ariyalur. Water level rise of 2 to 4 m is observed mainly in districts such as Erode, Namakkal and Dharmapuri districts. Rise of more than 4 m is significantly observed in Coimbatore and Namakkal districts.

Fall in Water Levels:

Out of 725 wells, water level fall of less than 2 m is recorded in 39.72 % wells, 2 to 4 m in 14.34 % wells and more than 4 m in 9.93 % of the wells. Water level fall of less than 2 m is seen in all the districts. Water level fall of 2 to 4 m is observed all the districts except in Chennai, Coimbatore and UT of Puducherry. Fall of more than 4 m is significantly observed in Erode, Salem, Trichy and Namakkal districts.

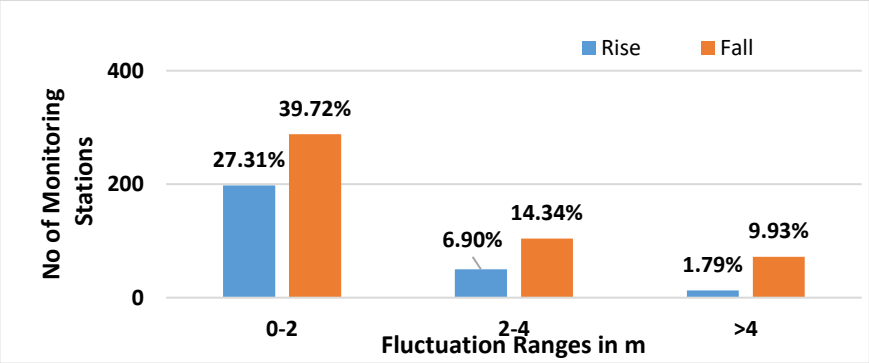

Figure-10: Percentage of wells showing rise and fall in WL in unconfined aquifer (August 2022 & August 2025)

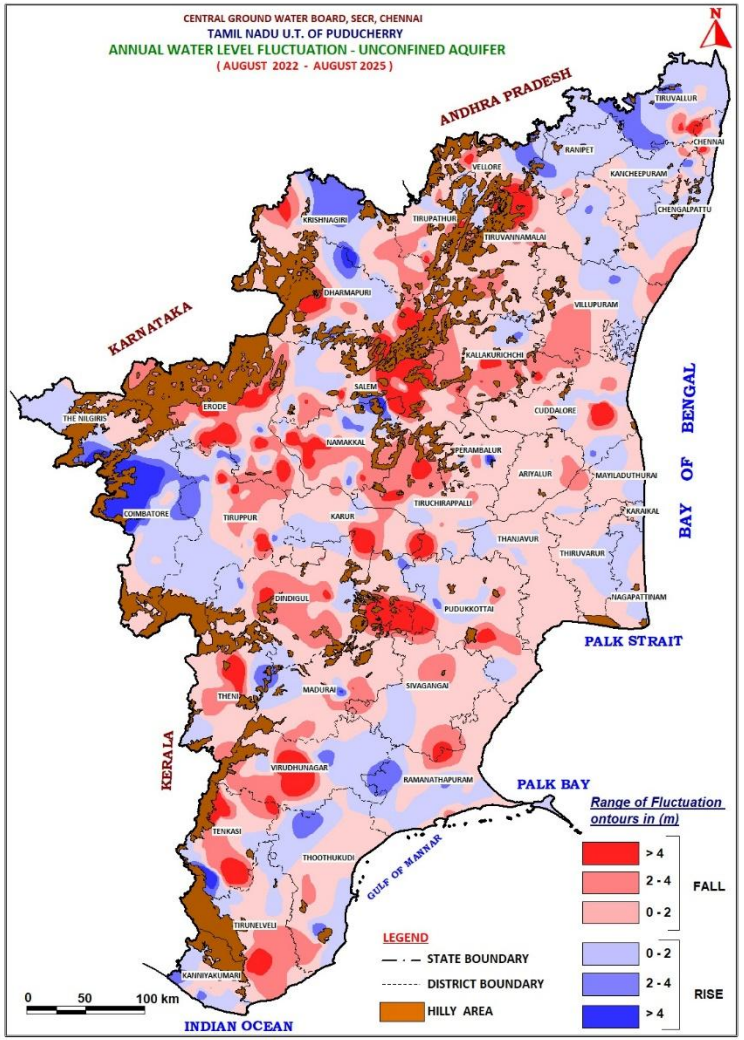

Figure-11: Annual water level fluctuation in unconfined aquifer

(August 2022 & August 2025)

5.1.3 Decadal Fluctuation

Decadal Fluctuation of Water Level in Unconfined Aquifer (Decadal Mean August (2015-2024) to August 2025

Rise in Water Levels:

Out of 775 wells, water level rise of less than 2 m is recorded in 42.58 % wells, 2 to 4 m in 14.45 % wells and more than 4 m in 9.81 % of the wells. Water level rise of less than 2 m is seen in all the districts. Water level rise of 2 to 4 m is observed in all the districts except in Ariyalur, Chennai and UT of Puducherry. Rise of more than 4 m is significantly observed in Dharmapuri, Namakkal, Coimbatore and Salem districts.

Fall in Water Levels:

Out of the 775 wells fall in water levels less than 2 m is recorded in 25.81 % wells while 4.13 % in the range of 2 to 4 m and 3.23% wells registered water level fall of more than 4 m. Fall of less than 2 m is observed in all districts except Karaikal region and Tiruvarur districts. Fall of 2 to 4 m, recorded mainly in Namakkal, Erode and Tiruvallur districts. Fall beyond 4 m is recorded mainly in Kancheepuram and Salem districts.

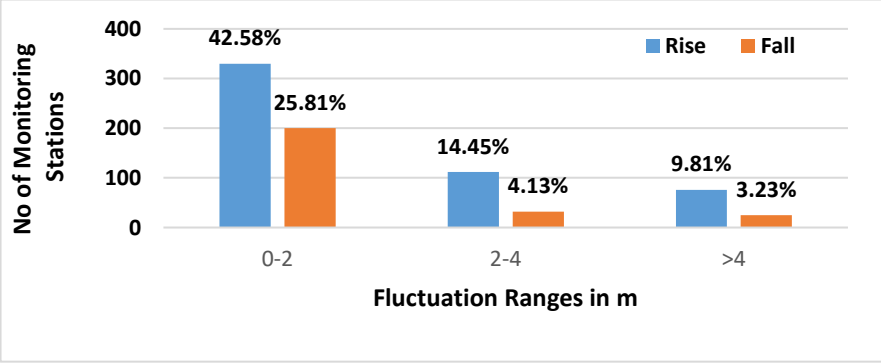

Figure-12: Percentage of wells showing rise and fall in WL in unconfined Aquifer (Decadal Mean August (2015-2024) to August 2025

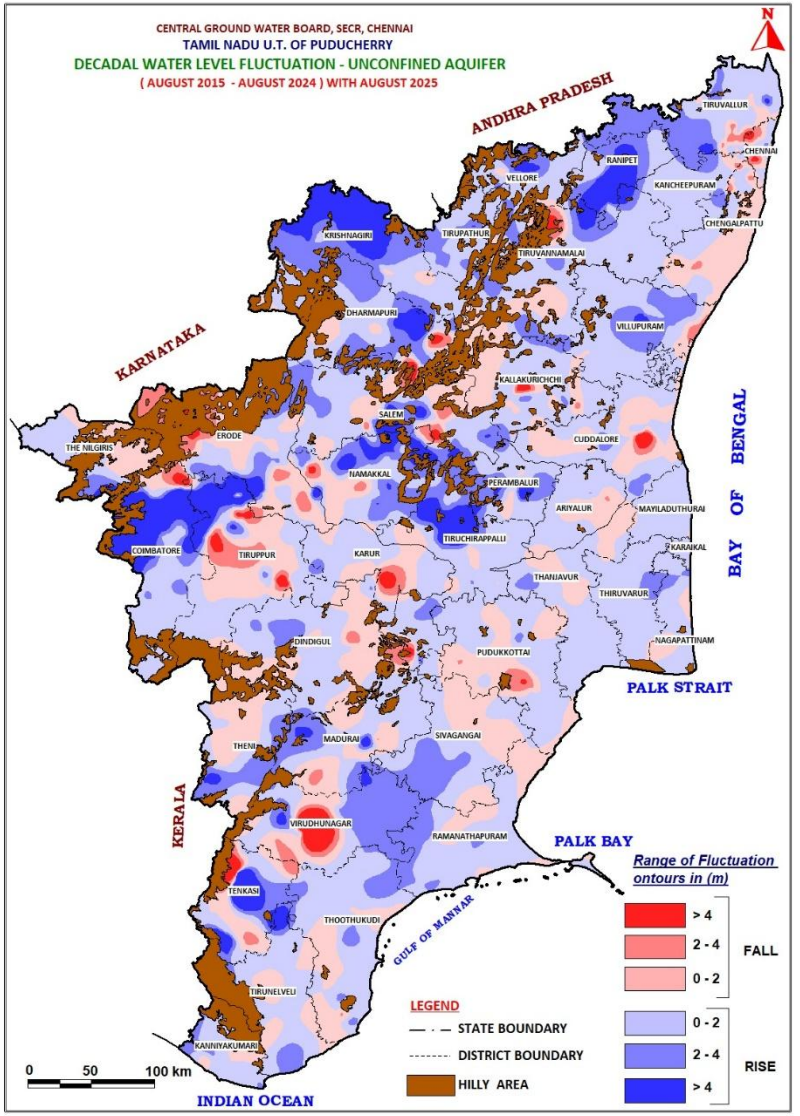

Figure-13: Decadal water level fluctuation in unconfined Aquifer (Decadal Mean August 2015-2024 to August 2025)

5.1.4 SEASONAL FLUCTUATION IN WATER LEVEL

Seasonal Fluctuation of Water Level in Unconfined Aquifer (May 2025 & August 2025)

Rise in Water Levels:

Out of 710 wells, water level rise of less than 2 m is recorded in 28.87% wells, 2 to 4 m in 4.93 % wells and more than 4 m in 3.24 % of the wells. Water level rise of less than 2 m is seen in all the districts. Water level rise of 2 to 4 m is observed in all the districts except in districts such as Karur, Karaikal, Madurai, Theni, Chennai, Sivaganga and UT of Puducherry. Rise of more than 4 m is significantly observed in Coimbatore, Namakkal and Sivaganga districts.

Fall in Water Levels:

Out of 710 wells, water level fall of less than 2 m is recorded in 47.46% wells, 2 to 4 m in 9.58% wells and more than 4 m in 5.92% of the wells. Water level fall of less than 2 m is seen in all the districts, except in Karaikal region of UT of Puducherry. Water level fall of 2 to 4 m is observed mainly in districts such as Dharmapuri, Dindigul, Erode and Tirunelveli districts. Rise of more than 4 m is significantly observed in Dharmapuri, Coimbatore and Salem districts.

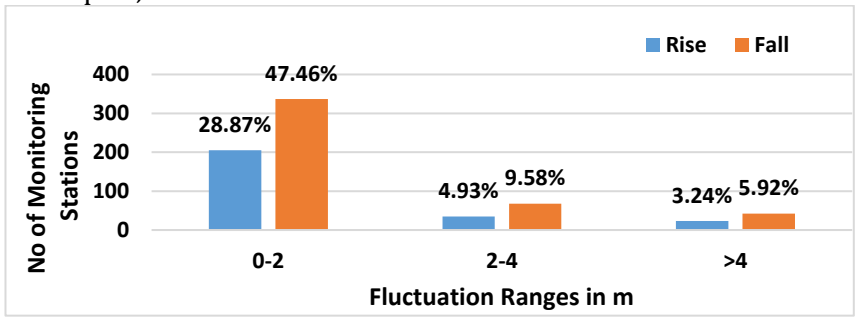

Figure-14: Percentage of wells showing rise and fall in WL in unconfined aquifer (May 2025 & August 2025)

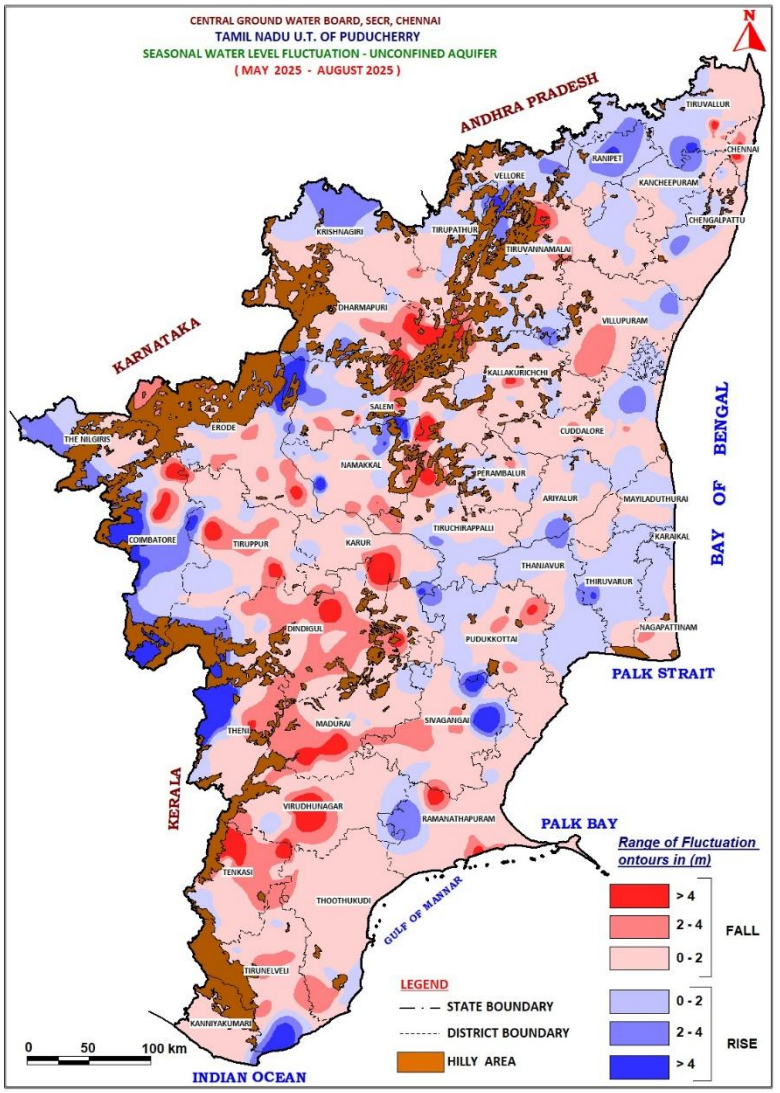

Figure-15: Seasonal water level fluctuation in unconfined Aquifer (May 2025 & August 2025)

6.0 RECOMMENDATIONS

In order to enhance the groundwater scenario of Tamil Nadu state & UT of Puducherry utmost effort should be made to harvest the rainwater received during monsoon days and use it either for ground water recharge or for domestic use. Periodic maintenance of the Rainwater harvesting / Recharges structures is also recommended to maintain the efficiency.

Abandoned bore wells/dug well can be used to recharge the aquifer utilizing the surplus surface runoff available during rainy days.

Master plan for artificial recharge of Tamil Nadu state & UT of Puducherry, District Recharge Plan and NAQUIM reports of CGWB helps in selecting sites for artificial recharge structures.

Point recharge structures are recommended to recharge deeper aquifers.

Efficient micro irrigation practices can save up to 40% of water.

Use of Grey water after treatment, opting for water efficient fixtures and low flow plumbing fixtures reduce the stress on groundwater. Low flow technology is normally used in faucets, aerator, shower heads and toilets

7.0 SUMMARY

As a component of the National Ground Water Monitoring Program, the CGWB, SECR, Chennai conducts monitoring of the ground water conditions on a quarterly basis: in pre-monsoon May, August, November and post- monsoon January . Additionally, a yearly assessment of ground water quality is performed in May. As on August 2025, the South Eastern Coastal Region of Central Ground Water Board supervises 1353 dug wells and 739 piezometers. This comprehensive effort aims to portray the variations in the state's ground water conditions across different aquifers.

A perusal of the water level data reveals that the depth to water level of Unconfined Aquifer ranged from 0.04m bgl (Tiruvannamalai district) to 64.9 m bgl (Coimbatore District) in Tamil Nadu and UT of Puducherry.

Overall, 97 % of the wells monitored in the state and UT are in <10 m bgl range and spread over entire Tamil nadu ,8.87 % of wells show depth to water level between 10 to 20 m bgl. Less than 1 % of wells show depth to water level more than 40 m bgl. Depth to water level of less than 2 m bgl has been recorded in 13.90% of wells analysed, depth to water level in the range of 2 to 5 m bgl has been recorded in 40.80 % of wells analysed while depth to water level in the range of 5 to 10 m bgl has been recorded in 35.18 % of wells analysed