

GOVERNMENT OF INDIA
MINISTRY OF JAL SHAKTI,
DEPARTMENT OF WATER RESOURCES, RIVER DEVELOPMENT & GANGA REJUVENATION

RAJYA SABHA

UNSTARRED QUESTION NO. 1216

ANSWERED ON 13.02.2023

GROUNDWATER TABLE DEPLETION IN METRO CITIES

1216. DR. C.M. RAMESH

Will the Minister of **JAL SHAKTI** be pleased to state:

- (a) whether Government has conducted any scientific and comprehensive study on the excessive groundwater table depletion due to various reasons in metropolitan cities in the country, details thereof and if not, reasons therefor; and
- (b) the details of groundwater table depletion in Metro city of Delhi during the last three years?

ANSWER

THE MINISTER OF STATE FOR JAL SHAKTI

(SHRI BISHWESWAR TUDU)

(a) Central Ground Water Board (CGWB) is periodically monitoring the ground water levels throughout the Country including cities on a regional scale, through a network of monitoring wells. In order to assess the decline in water level on a long-term basis, the water level data of urban areas collected by CGWB during November 2022 has been compared with the decadal average (2012-2021). Analysis of water level data with respect to cities (with population greater than 10.00 Lakh) indicates that about 59.8% of the wells monitored have registered rise in ground water levels. The details in this regard are given at **Annexure I**.

(b) Analysis of data collected by the CGWB indicates that around 54.7 %, 70 % and 64% of wells monitored in the metro city of Delhi are having groundwater level below 10 m during November 2020, November 2021 and November 2022 respectively. Details in this regard are given at **Annexure II**.

ANNEXURE REFERRED TO IN REPLY TO PART (a) OF UNSTARRED QUESTION NO. 1216 TO BE ANSWERED IN RAJYA SABHA ON 13.02.2023 REGARDING “GROUNDWATER TABLE DEPLETION IN METRO CITIES”.

Decadal Water Level Fluctuation with Mean [NOVEMBER (2012 to 2021)] and NOVEMBER 2022 in Urban Areas of the Country

S. No.	Name of the City	No. of wells Analysed	Rise						Fall						Rise		Fall	
			0-2 m		2-4 m		>4 m		0-2 m		2-4 m		>4 m		No	%	No	%
			No	%	No	%	No	%	No	%	No	%	No	%				
1	Mumbai City	6	1	16.7	0	0.0	0	0.0	5	83.3	0	0.0	0	0.0	1	16.7	5	83.3
2	Mumbai Suburban	17	5	29.4	1	5.9	0	0.0	11	64.7	0	0.0	0	0.0	6	35.3	11	64.7
3	Delhi	84	31	36.9	11	13.1	18	21.4	12	14.3	6	7.1	6	7.1	60	71.4	24	28.6
4	Kolkata(Confined)	24	1	4.2	1	4.2	2	8.3	10	41.7	8	33.3	2	8.3	4	16.7	20	83.3
5	Chennai	18	11	61.1	4	22.2	2	11.1	1	5.6	0	0.0	0	0.0	17	94.4	1	5.6
6	Bangalore	18	11	61.1	2	11.1	2	11.1	3	16.7	0	0.0	0	0.0	15	83.3	3	16.7
7	Hyderabad	36	12	33.3	4	11.1	9	25.0	9	25.0	1	2.8	1	2.8	25	69.4	11	30.6
8	Ahmedabad (phreatic)	3	2	66.7	0	0.0	0	0.0	1	33.3	0	0.0	0	0.0	2	66.7	1	33.3
	Ahmedabad (Confined)	1	0	0.0	0	0.0	0	0.0	1	100.0	0	0.0	0	0.0	0	0.0	1	100.0
9	Nagpur	70	46	65.7	13	18.6	5	7.1	6	8.6	0	0.0	0	0.0	64	91.4	6	8.6
10	Nashik	3	1	33.3	0	0.0	0	0.0	1	33.3	0	0.0	1	33.3	1	33.3	2	66.7
11	Pune	13	8	61.5	0	0.0	1	7.7	4	30.8	0	0.0	0	0.0	9	69.2	4	30.8
12	Vasai Virar	2	1	50.0	0	0.0	0	0.0	1	50.0	0	0.0	0	0.0	1	50.0	1	50.0
13	Aurangabad	6	3	50.0	0	0.0	0	0.0	1	16.7	1	16.7	1	16.7	3	50.0	3	50.0
14	Kannur	6	5	83.3	0	0.0	0	0.0	1	16.7	0	0.0	0	0.0	5	83.3	1	16.7
15	Kochi	3	2	66.7	0	0.0	0	0.0	1	33.3	0	0.0	0	0.0	2	66.7	1	33.3
16	Kollam	3	3	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	3	100.0	0	0.0
17	Kozhikode	10	8	80.0	0	0.0	0	0.0	2	20.0	0	0.0	0	0.0	8	80.0	2	20.0
18	Malappuram	6	3	50.0	0	0.0	0	0.0	3	50.0	0	0.0	0	0.0	3	50.0	3	50.0
19	Thiruvananthapuram	5	2	40.0	0	0.0	1	20.0	2	40.0	0	0.0	0	0.0	3	60.0	2	40.0
20	Thrissur	12	7	58.3	0	0.0	0	0.0	5	41.7	0	0.0	0	0.0	7	58.3	5	41.7
21	Patna	6	5	83.3	0	0.0	0	0.0	1	16.7	0	0.0	0	0.0	5	83.3	1	16.7
22	Ranchi	13	11	84.6	1	7.7	0	0.0	1	7.7	0	0.0	0	0.0	12	92.3	1	7.7
23	Dhanbad	2	0	0.0	0	0.0	0	0.0	1	50.0	1	50.0	0	0.0	0	0.0	2	100.0
24	Jamshedpur	1	1	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	100.0	0	0.0
25	Bhopal	15	4	26.7	1	6.7	0	0.0	8	53.3	1	6.7	1	6.7	5	33.3	10	66.7
26	Indore	20	3	15.0	0	0.0	0	0.0	8	40.0	8	40.0	1	5.0	3	15.0	17	85.0
27	Jabalpur	17	3	17.6	0	0.0	0	0.0	11	64.7	2	11.8	1	5.9	3	17.6	14	82.4
28	Gwalior	1	0	0.0	1	100.0	0	0.0	0	0.0	0	0.0	0	0.0	1	100.0	0	0.0
29	Guwahati	34	12	35.3	3	8.8	1	2.9	13	38.2	3	8.8	2	5.9	16	47.1	18	52.9
30	Ludhiana	14	4	28.6	0	0.0	0	0.0	7	50.0	3	21.4	0	0.0	4	28.6	10	71.4
31	Amritsar	12	3	25.0	0	0.0	0	0.0	8	66.7	1	8.3	0	0.0	3	25.0	9	75.0

S. No.	Name of the City	No. of wells Analysed	Rise						Fall						Rise		Fall	
			0-2 m		2-4 m		>4 m		0-2 m		2-4 m		>4 m		No	%	No	%
			No	%	No	%	No	%	No	%	No	%	No	%				
32	Faridabad	3	0	0.0	0	0.0	1	33.3	2	66.7	0	0.0	0	0.0	1	33.3	2	66.7
33	Chandigarh-UT	15	7	46.7	0	0.0	0	0.0	3	20.0	3	20.0	2	13.3	7	46.7	8	53.3
34	Coimbatore	6	3	50.0	0	0.0	3	50.0	0	0.0	0	0.0	0	0.0	6	100.0	0	0.0
35	Thiruchirapalli	6	2	33.3	1	16.7	1	16.7	2	33.3	0	0.0	0	0.0	4	66.7	2	33.3
36	Madurai	11	1	9.1	4	36.4	6	54.5	0	0.0	0	0.0	0	0.0	11	100.0	0	0.0
37	Vijayawada	3	1	33.3	0	0.0	0	0.0	1	33.3	1	33.3	0	0.0	1	33.3	2	66.7
38	Vishakapatnam	16	7	43.8	1	6.3	1	6.3	5	31.3	2	12.5	0	0.0	9	56.3	7	43.8
39	Rajkot*	0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
40	Surat	1	1	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	100.0	0	0.0
41	Vadodara	4	3	75.0	0	0.0	0	0.0	0	0.0	0	0.0	1	25.0	3	75.0	1	25.0
42	Jaipur	12	1	8.3	1	8.3	0	0.0	0	0.0	2	16.7	8	66.7	2	16.7	10	83.3
43	Jodhpur	5	3	60.0	0	0.0	1	20.0	0	0.0	1	20.0	0	0.0	4	80.0	1	20.0
44	Kota	2	1	50.0	0	0.0	0	0.0	1	50.0	0	0.0	0	0.0	1	50.0	1	50.0
45	Bhubaneswar	41	22	53.7	2	4.9	1	2.4	14	34.1	2	4.9	0	0.0	25	61.0	16	39.0
46	Agra	1	0	0.0	1	100.0	0	0.0	0	0.0	0	0.0	0	0.0	1	100.0	0	0.0
47	Allahabad	4	0	0.0	1	25.0	0	0.0	2	50.0	1	25.0	0	0.0	1	25.0	3	75.0
48	Ghaziabad	1	0	0.0	0	0.0	0	0.0	1	100.0	0	0.0	0	0.0	0	0.0	1	100.0
49	Kanpur	7	5	71.4	0	0.0	0	0.0	2	28.6	0	0.0	0	0.0	5	71.4	2	28.6
50	Lucknow	3	0	0.0	0	0.0	0	0.0	1	33.3	0	0.0	2	66.7	0	0.0	3	100.0
51	Meerut	1	0	0.0	0	0.0	0	0.0	1	100.0	0	0.0	0	0.0	0	0.0	1	100.0
52	Varanasi	1	1	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	100.0	0	0.0
53	Raipur	6	1	16.7	0	0.0	0	0.0	4	66.7	1	16.7	0	0.0	1	16.7	5	83.3
54	Bhilai	6	2	33.3	1	16.7	0	0.0	2	33.3	1	16.7	0	0.0	3	50.0	3	50.0
55	Dehradun	45	20	44.4	5	11.1	3	6.7	13	28.9	0	0.0	4	8.9	28	62.2	17	37.8
TOTAL		681	290	42.6	59	8.7	58	8.5	192	28.2	49	7.2	33	4.8	407	59.8	274	40.2

ANNEXURE-II

ANNEXURE REFERRED TO IN REPLY TO PART (b) OF UNSTARRED QUESTION NO. 1216 TO BE ANSWERED IN RAJYA SABHA ON 13.02.2023 REGARDING “GROUNDWATER TABLE DEPLETION IN METRO CITIES”.

Number & Percentage of Wells Showing Depth to Water Level (mbgl) in Metro city of Delhi

Year	No. of wells Analysed	Number & Percentage of Wells Showing Depth to Water Level (mbgl) in the Range of											
		0-2		2-5		5-10		10-20		20-40		> 40	
		No	%	No	%	No	%	No	%	No	%	No	%
2020	97	6	6.2	18	18.6	29	29.9	21	21.6	16	16.5	7	7.2
2021	123	20	16.3	30	24.4	36	29.3	20	16.3	9	7.3	8	6.5
2022	125	9	7.2	28	22.4	43	34.4	24	19.2	15	12.0	6	4.8
