

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

LOK SABHA

UNSTARRED QUESTION NO. 184

ANSWERED ON 20.07.2023

GROUND WATER LEVEL IN URBAN AREA

184. SHRI BHARTRUHARI MAHTAB

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

- (a) the current water level status in urban areas of the country;
- (b) the percentage decrease in water level by wells in urban areas;
- (c) the details of the factors contributing the decline in water level along with the steps taken by the Government to address it;
- (d) whether any assessment being conducted to determine the impact of changing land use patterns on ground water recharge and water balance in urban areas;
- (e) if so, the details thereof; and
- (f) if not, whether the Government proposes to conduct any such studies in the future?

ANSWER

THE MINISTER OF STATE FOR JAL SHAKTI

(SHRI BISHWESWAR TUDU)

(a) & (b) Central Ground Water Board (CGWB) is periodically monitoring the ground water levels throughout the country including certain identified urban areas/cities on a regional scale, through a network of monitoring wells.

The water level data of certain urban areas/cities collected by CGWB during May 2023 has been compared with the decadal (2013-2022) average for the month of May. Analysis of water level data indicates that about 58.9% of the wells monitored have registered a rise in ground water levels and 41.1 % of wells show a decline in water level mostly in the range of 0-2 m. Details given at **Annexure**.

(c) Ground water levels in certain parts of the country including urban areas are declining because of continuous withdrawal necessitated by increased demand for fresh water for various uses, vagaries of rainfall, increased population, industrialization & urbanization etc.

Water being State subject, the efforts to effectively harvest the rain water including sustainable groundwater management fall under States' mandate, however, a number of steps has been taken by Central Government in this regard which can be seen at <https://cdnbbsr.s3waas.gov.in/s3a70dc40477bc2adceef4d2c90f47eb82/uploads/2023/02/2023021742.pdf>

Government of India is implementing Jal Shakti Abhiyan (JSA) in the country in which special emphasis is being given for rainwater harvesting/groundwater recharge. First JSA was launched in 2019 in water stressed blocks of 256 districts which continued during the years 2021,2022 also (across entire country both rural and urban areas) with the primary aim to effectively harvest the monsoon rainfall through creation of artificial recharge structures, watershed management, recharge and reuse structures, intensive afforestation and awareness generation etc. JSA for the year 2023 have been launched by Hon'ble President of India on 4 March 2023 with the theme "Source Sustainability for Drinking Water".

Hon'ble Prime Minister has launched Amrit Sarovar Mission on 24th April 2022. The Mission is aimed at developing and rejuvenating 75 water bodies in each district of the country as a part of celebration of Azadi ka Amrit Mahotsav for rainwater harvesting/recharge.

Central Government is implementing Atal Bhujal Yojana with an outlay of Rs. 6,000 crore, in collaboration with States, in certain water stressed areas of Gujarat, Haryana, Karnataka, Madhya Pradesh, Maharashtra, Rajasthan and Uttar Pradesh. The primary aim of the scheme is demand side management through scientific means involving the local communities at village levels leading to sustainable groundwater management in the targeted areas.

Agriculture sector being one of the major groundwater extractor, participatory groundwater management with community participation at village level, crop diversification, crop rotation, use of micro irrigation techniques like drip/sprinkler irrigation systems, increasing water use efficiency by use of improved techniques, availability of surface water through canal based system etc are being vigorously promoted.

Master Plan for Artificial Recharge to Groundwater- 2020 has been prepared by the CGWB in collaboration with States/UTs providing a broad outline of the project and expected investments. The Master Plan envisages construction of about 1.42 crore Rain water harvesting and artificial recharge structures in the Country to harness 185 Billion Cubic Metre (BCM) of water. The Master plan has been shared with States/UTs for suitable interventions.

Ministry of Housing & Urban Affairs (MoHUA) has formulated Model Building Bye Laws (MBBL), 2016 for the States/UTs. As per MBBL, all buildings having a plot size of 100 Sq.m. or, more shall mandatorily include the complete proposal of rainwater harvesting. 35 States/ UTs have adopted the features of the Bye Laws.

(d) to (f) CGWB has taken up a study in collaboration with Ministry of Housing & Urban Affairs in three cities viz. Ahmedabad, Guwahati and Bengaluru to study/determine the impact of changing land use patterns on ground water recharge and water balance in urban areas.

ANNEXURE REFERRED TO IN REPLY TO PART (a) & (b) OF UNSTARRED QUESTION NO. 184 TO BE ANSWERED IN
LOK SABHA ON 20.07.2023 REGARDING “GROUND WATER LEVEL IN URBAN AREA”.

Decadal Ground Water Level Fluctuation with Mean [May (2013 to 2022)] and May 2023 in Urban Areas of the Country

S. No.	State/UT	Name of 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	Andhra Pradesh	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%
2		Visakhapatna	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%
3	Assam	Guwahati	34	12	35.3%	3	8.8%	1	2.9%	13	38.2%	3	8.8%	2	5.9%	1	47.1%	1	52.9%
4	Bihar	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%
5	Chhattisgarh	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%
6		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%
7	Delhi	Delhi	84	31	36.9%	11	13.1	18	21.4%	12	14.3%	6	7.1%	6	7.1%	6	71.4%	2	28.6%
8	Gujarat	Ahmedabad	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%
9		Gandhinagar	2	0	0.0%	0	0.0%	2	100.0	0	0.0%	0	0.0%	0	0.0%	2	100.0	0	0.0%
10		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%
11		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%
12	Haryana	Ambala	35	18	51.4%	2	5.7%	1	2.9%	8	22.9%	2	5.7%	4	11.4%	2	60.0%	1	40.0%
13		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%
14		Yamunanaga	15	7	46.7%	2	13.3	0	0.0%	5	33.3%	1	6.7%	0	0.0%	9	60.0%	6	40.0%
15	Chandigarh	Chandigarh	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%
16	Jharkhand	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%
17		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%
18		Ranchi	13	11	84.6%	1	7.7%	0	0.0%	1	7.7%	0	0.0%	0	0.0%	1	92.3%	1	7.7%
19	Karnataka	Bangalore	18	11	61.1%	2	11.1	2	11.1%	3	16.7%	0	0.0%	0	0.0%	1	83.3%	3	16.7%
20	Kerala	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%
21		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%
22		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%
23		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%
24		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%
25		Thiruvananth	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%
26		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%
27	Madhya Pradesh	Bhopal	15	4	26.7%	1	6.7%	0	0.0%	8	53.3%	1	6.7%	1	6.7%	5	33.3%	1	66.7%
28		Gwalior	1	0	0.0%	1	100.	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	100.0	0	0.0%
29		Indore	20	3	15.0%	0	0.0%	0	0.0%	8	40.0%	8	40.0	1	5.0%	3	15.0%	1	85.0%
30		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%
31	Maharashtra	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%
32		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%
33		Mumbai	17	5	29.4%	1	5.9%	0	0.0%	11	64.7%	0	0.0%	0	0.0%	6	35.3%	1	64.7%

S. No.	State/UT	Name of 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	%	No	%	No	%
34		Nagpur	70	46	65.7%	13	18.6	5	7.1%	6	8.6%	0	0.0%	0	0.0%	6	91.4%	6	8.6%
35		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%
36		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%
37	Odisha	Bhubaneshw	41	22	53.7%	2	4.9%	1	2.4%	14	34.1%	2	4.9%	0	0.0%	2	61.0%	1	39.0%
38	Punjab	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%
39		Jalandhar	13	2	15.4%	2	15.4	0	0.0%	4	30.8%	2	15.4	3	23.1%	4	30.8%	9	69.2%
40		Ludhiana	14	4	28.6%	0	0.0%	0	0.0%	7	50.0%	3	21.4	0	0.0%	4	28.6%	1	71.4%
41		Mohali	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%
42		Patiala	16	2	12.5%	1	6.3%	1	6.3%	3	18.8%	4	25.0	5	31.3%	4	25.0%	1	75.0%
43	Rajastha	Bikaner	1	0	0.0%	1	100.	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	100.0	0	0.0%
44	n	Jaipur	12	1	8.3%	1	8.3%	0	0.0%	0	0.0%	2	16.7	8	66.7%	2	16.7%	1	83.3%
45		Jaisalmer	1	0	0.0%	1	100.	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	100.0	0	0.0%
46		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%
47		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%
48	Tamil	Chennai	18	11	61.1%	4	22.2	2	11.1%	1	5.6%	0	0.0%	0	0.0%	1	94.4%	1	5.6%
49	Nadu	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%
50		Madurai	11	1	9.1%	4	36.4	6	54.5%	0	0.0%	0	0.0%	0	0.0%	1	100.0	0	0.0%
51		Thiruchirapal	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%
52		Vellore	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%
53	Telangan	Hyderabad	36	12	33.3%	4	11.1	9	25.0%	9	25.0%	1	2.8%	1	2.8%	2	69.4%	1	30.6%
54	Uttar	Agra	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%
55	Pradesh	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%
56		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%
57		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%
58		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%
59		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%
60		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%
61	Uttaranc	Dehradun	45	20	44.4%	5	11.1	3	6.7%	13	28.9%	0	0.0%	4	8.9%	2	62.2%	1	37.8%
62	West	Kolkata	24	1	4.2%	1	4.2%	2	8.3%	10	41.7%	8	33.3	2	8.3%	4	16.7%	2	83.3%
TOTAL			771	325	42.2	67	8.7	62	8.0	214	27.8	58	7.5	45	5.8	4	58.9	3	41.1
