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

LOK SABHA

UNSTARRED QUESTION NO. 3471

ANSWERED ON 24.03.2022

DEPLETION OF GROUND WATER

3471. SHRI MANOJ KOTAK SHRIMATI RAKSHA NIKHIL KHADSE

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

(a) whether it is a fact that in some parts of the country especially in big cities there has been serious depletion of ground water;

(b) if so, the details thereof,

(c) whether any research has been conducted to find out the reasons and consequent effects of decrease in ground water level; and

(d) if so, the details thereof and the steps taken by the Government to mitigate the problem?

ANSWER

THE MINISTER OF STATE FOR JAL SHAKTI

(SHRI BISHWESWAR TUDU)

(a) & b) The Central Ground Water Board (CGWB) is periodically monitoring ground water levels throughout the country including urban areas on a regional scale, through a network of monitoring wells. In order to assess the long term fluctuation in ground water level, the water level data collected by CGWB during November 2021 has been compared with the decadal mean of November (2011-2020). Analysis of water level data indicates that about 30% of the wells monitored have registered decline in ground water level whereas about 70% wells have registered rise in water level. Further, with respect to big cities of the country the analysis as mentioned above indicates rise in groundwater levels in around 65.4% wells. State-wise details and information with respect to big cities are given at **Annexure I and Annexure II** respectively.

(c) As per available information, the ground water levels in various parts of the country are declining because of continuous withdrawal necessitated by increased demand of fresh water for various uses, vagaries of rainfall, increased population, industrialization & urbanization etc.

Some of the consequential effects of decrease in ground water levels may be considered as drying up of wells, reduction of water in streams and lakes, deterioration of water quality , increased pumping costs, land subsidence etc. However, the ground water is a dynamic replenishable resource, which gets recharged every year through rainfall and other sources such as return flow from irrigation, canal seepage, recharge from surface water bodies etc.

(d) Though water is a State subject, Central Government has taken a number of important measures for conservation, management of ground water including effective implementation of rain water harvesting in the country, which can be seen at URL:http://jalshakti-dowr.gov.in/sites/default/files/Steps_to_control_water_depletion_ Feb2021.pdf. Some of the important initiatives in this regard are also given at **Annexure III.**

Government of India launched Jal Shakti Abhiyan (JSA) in 2019 in 256 water stressed districts in the country which continued during 2021 also to improve water availability including ground water conditions in the country. Further, the campaign “Jal Shakti Abhiyan: Catch the Rain” (JSA:CTR) was launched by the Hon’ble Prime Minister on 22 March 2021.

In addition, a number of States have done notable work in the field of water conservation/harvesting such as ‘Mukhyamantri Jal Swavlamban Abhiyan’ in Rajasthan, ‘Jalyukt Shibar’ in Maharashtra, ‘Sujalam Sufalam Abhiyan’ in Gujarat, ‘Mission Kakatiya’ in Telangana, Neeru Chettu’ in Andhra Pradesh, Jal Jeevan Hariyali in Bihar, ‘Jal Hi Jeevan’ in Haryana, and Kudimaramath scheme in Tamil Nadu etc.

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ANNEXURE I

ANNEXURE REFERRED TO IN REPLY TO PARTS (a) & (b) OF UNSTARRED QUESTION NO. 3471 TO BE ANSWERED IN LOK SABHA ON 24.03.2022 REGARDING "DEPLETION OF GROUND WATER".

State-wise Decadal Water Level Fluctuation with Mean [November (2011 to 2020] and November 2021

S. No.	Name of State	No. of wells Analysed	Rise						Fall						Rise		Fall		Wells showing no change	
			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	%
1	Andhra Pradesh	706	419	59.3	87	12.3	50	7.1	124	17.6	14	2.0	11	1.6	556	79	149	21	1	0
2	Arunachal Pradesh	10	2	20.0	0	0.0	0	0.0	8	80.0	0	0.0	0	0.0	2	20	8	80	0	0
3	Assam	167	71	42.5	3	1.8	1	0.6	83	49.7	6	3.6	3	1.8	75	45	92	55	0	0
4	Bihar	593	395	66.6	78	13.2	11	1.9	102	17.2	7	1.2	0	0.0	484	82	109	18	0	0
5	Chandigarh	12	4	33.3	2	16.7	1	8.3	3	25.0	1	8.3	1	8.3	7	58	5	42	0	0
6	Chhattisgarh	687	290	42.2	66	9.6	30	4.4	230	33.5	45	6.6	26	3.8	386	56	301	44	0	0
7	Dadra & Nagar Haveli	17	15	88.2	0	0.0	0	0.0	2	11.8	0	0.0	0	0.0	15	88	2	12	0	0
8	Daman & Diu	5	2	40.0	1	20.0	1	20.0	1	20.0	0	0.0	0	0.0	4	80	1	20	0	0
9	Delhi	86	29	33.7	21	24.4	15	17.4	12	14.0	3	3.5	6	7.0	65	76	21	24	0	0
10	Goa	68	9	13.2	0	0.0	1	1.5	52	76.5	5	7.4	1	1.5	10	15	58	85	0	0
11	Gujarat	746	278	37.3	122	16.4	112	15.0	140	18.8	50	6.7	44	5.9	512	69	234	31	0	0
12	Haryana	183	66	36.1	6	3.3	8	4.4	65	35.5	19	10.4	19	10.4	80	44	103	56	0	0
13	Himachal Pradesh	86	40	46.5	5	5.8	2	2.3	36	41.9	1	1.2	1	1.2	47	55	38	44	1	1
14	Jammu & Kashmir	213	100	46.9	4	1.9	3	1.4	99	46.5	4	1.9	3	1.4	107	50	106	50	0	0
15	Jharkhand	198	132	66.7	17	8.6	1	0.5	45	22.7	3	1.5	0	0.0	150	76	48	24	0	0
16	Karnataka	1290	709	55.0	265	20.5	123	9.5	159	12.3	20	1.6	14	1.1	1097	85	193	15	0	0
17	Kerala	1304	868	66.6	145	11.1	39	3.0	227	17.4	17	1.3	8	0.6	1052	81	252	19	0	0
18	Madhya Pradesh	1297	590	45.5	164	12.6	97	7.5	345	26.6	70	5.4	31	2.4	851	66	446	34	0	0
19	Maharashtra	1727	856	49.6	321	18.6	161	9.3	317	18.4	47	2.7	24	1.4	1338	77	388	22	1	0
20	Meghalaya	24	10	41.7	1	4.2	0	0.0	13	54.2	0	0.0	0	0.0	11	46	13	54	0	0
21	Nagaland	2	1	50.0	0	0.0	0	0.0	0	0.0	1	50.0	0	0.0	1	50	1	50	0	0
22	Odhisha	1245	650	52.2	32	2.6	2	0.2	517	41.5	35	2.8	8	0.6	684	55	560	45	1	0
23	Pondicherry	6	3	50.0	1	16.7	0	0.0	2	33.3	0	0.0	0	0.0	4	67	2	33	0	0
24	Punjab	176	46	26.1	7	4.0	1	0.6	74	42.0	38	21.6	10	5.7	54	31	122	69	0	0
25	Rajasthan	918	248	27.0	80	8.7	44	4.8	290	31.6	114	12.4	141	15.4	372	41	545	59	1	0
26	Tamil Nadu	538	201	37.4	146	27.1	113	21.0	54	10.0	13	2.4	11	2.0	460	86	78	14	0	0
27	Telangana	537	203	37.8	114	21.2	133	24.8	73	13.6	5	0.9	9	1.7	450	84	87	16	0	0
28	Tripura	22	8	36.4	0	0.0	0	0.0	11	50.0	3	13.6	0	0.0	8	36	14	64	0	0
29	Uttar Pradesh	646	358	55.4	102	15.8	21	3.3	118	18.3	32	5.0	15	2.3	481	74	165	26	0	0
30	Uttarakhand	45	23	51.1	3	6.7	2	4.4	9	20.0	4	8.9	4	8.9	28	62	17	38	0	0
31	West Bengal	721	417	57.8	87	12.1	34	4.7	117	16.2	34	4.7	31	4.3	538	75	182	25	1	0
Total		**14275**	**7043**	**49.3**	**1880**	**13.2**	**1006**	**7.0**	**3328**	**23.3**	**591**	**4.1**	**421**	**2.9**	**9929**	**70**	**4340**	**30**	**6**	**0**

ANNEXURE II

ANNEXURE REFERRED TO IN REPLY TO PARTS (a) & (b) OF UNSTARRED QUESTION NO. 3471 TO BE ANSWERED IN LOK SABHA ON 24.03.2022 REGARDING "DEPLETION OF GROUND WATER".

Decadal Water Level Fluctuation with Mean [NOVEMBER (2011 to 2020] and NOVEMBER 2021 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	4	66.7	0	0.0	0	0.0	1	16.7	1	16.7	0	0.0	4	66.7	2	33.3
2	Mumbai Suburban	17	9	52.9	1	5.9	0	0.0	5	29.4	2	11.8	0	0.0	10	58.8	7	41.2
3	Delhi	86	29	33.7	21	24.4	15	17.4	12	14.0	3	3.5	6	7.0	65	75.6	21	24.4
4	Kolkata(Confined)	25	16	64.0	0	0.0	1	4.0	7	28.0	1	4.0	0	0.0	17	68.0	8	32.0
5	Chennai	21	12	57.1	7	33.3	2	9.5	0	0.0	0	0.0	0	0.0	21	100.0	0	0.0
6	Bangalore	18	12	66.7	2	11.1	1	5.6	3	16.7	0	0.0	0	0.0	15	83.3	3	16.7
7	Hyderabad	36	18	50.0	6	16.7	9	25.0	3	8.3	0	0.0	0	0.0	33	91.7	3	8.3
8	Ahmedabad	3	0	0.0	0.0	0.0	0.0	0.0	3	100.0	0	0.0	0	0.0	0	0.0	3	100.0
	Ahmedabad	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
9	Nagpur	67	37	55.2	3	4.5	0	0.0	26	38.8	1	1.5	0	0.0	40	59.7	27	40.3
10	Nashik	4	1	25.0	0	0.0	0	0.0	3	75.0	0	0.0	0	0.0	1	25.0	3	75.0
11	Pune	3	1	33.3	0	0.0	0	0.0	2	66.7	0	0.0	0	0.0	1	33.3	2	66.7
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	3	50.0	0	0.0	0	0.0	0	0.0	0	0.0	6	100.0	0	0.0
14	Kannur	3	1	33.3	2	66.7	0	0.0	0	0.0	0	0.0	0	0.0	3	100.0	0	0.0
15	Kochi	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
16	Kollam	4	3	75.0	0	0.0	0	0.0	1	25.0	0	0.0	0	0.0	3	75.0	1	25.0
17	Kozhikode	12	11	91.7	0	0.0	0	0.0	1	8.3	0	0.0	0	0.0	11	91.7	1	8.3
18	Malappuram	5	4	80.0	0	0.0	0	0.0	1	20.0	0	0.0	0	0.0	4	80.0	1	20.0
19	Thiruvananthapuram	6	3	50.0	3	50.0	0	0.0		0.0	0	0.0	0	0.0	6	100.0	0	0.0
20	Thrissur	11	5	45.5		0.0	0	0.0	6	54.5	0	0.0	0	0.0	5	45.5	6	54.5
21	Patna	6	4	66.7	1	16.7	0	0.0	1	16.7	0	0.0	0	0.0	5	83.3	1	16.7
22	Ranchi	11	10	90.9	1	9.1	0	0.0	0	0.0	0	0.0	0	0.0	11	100.0	0	0.0
23	Dhanbad	4	1	25.0	0	0.0	0	0.0	1	25.0	2	50.0	0	0.0	1	25.0	3	75.0
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	14	9	64.3	2	14.3	0	0.0	2	14.3	1	7.1	0	0.0	11	78.6	3	21.4
26	Indore	14	9	64.3	2	14.3	0	0.0	3	21.4	0	0.0	0	0.0	11	78.6	3	21.4
27	Jabalpur	16	6	37.5	0	0.0	0	0.0	8	50.0	2	12.5	0	0.0	6	37.5	10	62.5
28	Gwalior	1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	100.0	0	0.0	1	100.0
29	Guwahati	31	13	41.9	2	6.5	0	0.0	11	35.5	5	16.1	0	0.0	15	48.4	16	51.6
30	Ludhiana	2	0	0.0	0	0.0	0	0.0	1	50.0	0	0.0	1	50.0	0	0.0	2	100.0
31	Amritsar	4	2	50.0	1	25.0	0	0.0	1	25.0	0	0.0	0	0.0	3	75.0	1	25.0
32	Faridabad	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
33	Chandigarh-UT	13	4	30.8	1	7.7	1	7.7	5	38.5	1	7.7	1	7.7	6	46.2	7	53.8
34	Coimbatore	6	0	0.0	2	33.3	2	33.3	0	0.0	0	0.0	2	33.3	4	66.7	2	33.3

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	%
35	**Thiruchirapalli**	6	1	16.7	4	66.7	1	16.7	0	0.0	0	0.0	0	0.0	6	100.0	0	0.0
36	**Madurai**	12	5	41.7	3	25.0	3	25.0	1	8.3	0	0.0	0	0.0	11	91.7	1	8.3
37	**Vijayawada**	8	2	25.0	0	0.0	0	0.0	2	25.0	2	25.0	2	25.0	2	25.0	6	75.0
38	**Vishakhapatnam**	27	13	48.1	2	7.4	0	0.0	8	29.6	1	3.7	3	11.1	15	55.6	12	44.4
39	**Rajkot**	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
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		0.0	1	25.0	3	75.0	0	0.0	0	0.0	0	0.0	4	100.0	0	0.0
42	**Jaipur**	28	2	7.1	2	7.1	7	25.0	2	7.1	6	21.4	9	32.1	11	39.3	17	60.7
43	**Jodhpur**	5	3	60.0	0	0.0	1	20.0	1	20.0	0	0.0	0	0.0	4	80.0	1	20.0
44	**Kota**	2	0	0.0	0	0.0	0	0.0	2	100.0	0	0.0	0	0.0	0	0.0	2	100.0
45	**Bhubaneswar**	39	18	46.2	4	10.3	0	0.0	16	41.0	1	2.6	0	0.0	22	56.4	17	43.6
46	**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
47	**Allahabad**	4	1	25.0	2	50.0	0	0.0	0	0.0	1	25.0	0	0.0	3	75.0	1	25.0
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	6	85.7	0	0.0	0	0.0	1	14.3	0	0.0	0	0.0	6	85.7	1	14.3
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	0	0.0	1	100.0	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	18	40.0	5	11.1	3	6.7	15	33.3	4	8.9	0	0.0	26	57.8	19	42.2
TOTAL		**670**	**304**	**45.4**	**85**	**12.7**	**49**	**7.3**	**168**	**25.1**	**37**	**5.5**	**27**	**4.0**	**438**	**65.4**	**232**	**34.6**

Rajkot: WL data of Nov 2020 used in respect of Rajkot, Gujarat. Monitoring could not be carried out during NOV 2021

ANNEXURE-III

ANNEXURE REFERRED TO IN REPLY TO PARTS (d) OF UNSTARRED QUESTION NO. 3471 TO BE ANSWERED IN LOK SABHA ON 24.03.2022 REGARDING "DEPLETION OF GROUND WATER".

Important initiatives on management of groundwater resources

Government of India launched Jal Shakti Abhiyan (JSA) in 2019, a time bound campaign with a mission mode approach intended to improve water availability including ground water conditions in the water stressed blocks of 256 districts in India. In this regard, teams of officers from Central Government along-with technical officers from Ministry of Jal Shakti were deputed to visit water stressed districts and to work in close collaboration with district level officials to undertake suitable interventions.

In addition, Ministry of Jal Shakti has taken up the "Jal Shakti Abhiyan: Catch the Rain" (JSA:CTR) with the theme "Catch the Rain - Where it Falls When it Falls" to cover all the blocks of all districts (rural as well as urban areas) across the country during 22nd March 2021 to 30th November 2021. The campaign was launched by the Hon'ble Prime Minister on 22 March 2021.

Ministry of Jal Shakti, Department of Water Resources, RD & GR (DoWR, RD & GR) is implementing Atal Bhujal Yojana (Atal Jal), a Rs.6,000 crore Central Sector Scheme, for sustainable management of ground water resources with community participation. Atal Jal is being implemented in 80 water stressed districts and 8,565 Gram Panchayats of seven States viz. Gujarat, Haryana, Karnataka, Madhya Pradesh, Maharashtra, Rajasthan and Uttar Pradesh.

Central Ground Water Board (CGWB), in consultation with States/UTs, has prepared 'Master Plan for Artificial Recharge to Groundwater - 2020'. The Master Plan – 2020 is a macro level plan indicating various structures for the different terrain conditions of the country. The Master Plan - 2020 envisages construction of about 1.42 crore rain water harvesting and artificial recharge structures in the country to harness 185 Billion Cubic Metre (BCM).

National Aquifer Mapping and Management program (NAQUIM) is being implemented by CGWB as part of Ground Water Management and Regulation (GWM & R) Scheme, a Central Sector scheme. NAQUIM envisages mapping of aquifers (water bearing formations), their characterization and development of Aquifer Management Plans to facilitate sustainable management of groundwater resources in the country. NAQUIM outputs are shared with States/UTs for suitable interventions.

Government of India generally supports artificial groundwater recharge/water harvesting works in the country through Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) and Prime Minister Krishi Sinchayee Yojana - Watershed Development component (PMKSY-WDC), 'Surface Minor Irrigation (SMI) and Repair, Renovation and Restoration (RRR) of Water Bodies schemes' a component of PMKSY.

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