

GOVERNMENT OF INDIA
MINISTRY OF WATER RESOURCES,
RIVER DEVELOPMENT & GANGA REJUVENATION
LOK SABHA
STARRED QUESTION NO. *83
ANSWERED ON 21.12.2017

ARTIFICIAL RECHARGE TO GROUND WATER

*83. KUMARI SHOBHA KARANDLAJE
SHRI PRATHAP SIMHA

Will the Minister of WATER RESOURCES, RIVER DEVELOPMENT AND GANGA REJUVENATION pleased to state:

- (a) whether the Central Ground Water Board (CGWB) has prepared a conceptual document titled "Master Plan for Artificial Recharge to Ground Water in India" during 2013 and if so, the details thereof;
- (b) whether many State Governments have failed to implement the said Master Plan and the number of over-exploited units for ground water has increased and if so, the details thereof;
- (c) whether extraction of water in those areas had not been regulated effectively thereby resulting in serious decline in the ground water levels and if so, the details thereof along with the plan of the Union Government to formulate a policy with a focus on conjunctive use of water;
- (d) whether CGWB has hinted at further increase in the number of over-exploited units in the country and if so, the details thereof along with the steps to be taken to tackle the situation; and
- (e) whether the Union Government has issued advisories to the States and UTs to take measures to promote/adopt artificial recharge to ground water/rain water harvesting and if so, the details thereof?

ANSWER

THE MINISTER OF WATER RESOURCES, RIVER DEVELOPMENT AND GANGA REJUVENATION, ROAD TRANSPORT & HIGHWAYS AND SHIPPING

(SHRI NITIN JAIRAM GADKARI)

- (a) to (e) A statement is laid on the Table of the House.

STATEMENT REFERRED TO IN REPLY TO PARTS (a) TO (e) OF STARRED QUESTION NO. *83 TO BE ANSWERED ON 21.12.2017 IN THE LOK SABHA REGARDING “ARTIFICIAL RECHARGE TO GROUND WATER” ASKED BY KUMARI SHOBHA KARANDLAJE AND SHRI PRATHAP SIMHA, HON’BLE M.Ps :

(a) to (e) Central Ground Water Board has prepared a conceptual document titled “Master Plan for Artificial Recharge to Ground Water – 2013” which provides information about area specific artificial recharge techniques to augment the ground water resources based on the availability of source water and capability of subsurface formations to accommodate it. The Master Plan envisages construction of about 1.11 crore artificial recharge structures in urban and rural areas at an estimated cost of Rs. 79178 crore. This comprises around 88 lakh recharge structures/ facilities utilizing rainwater directly from roof top and more than 23 lakh artificial recharge and rainwater harvesting structures for conserving surplus runoff to augment the groundwater resources. It is estimated that annually about 85,565 MCM of surplus run-off can be harnessed to augment the ground water. State-wise Rural and Urban Artificial Recharge Structures as proposed in Master Plan are given at **Annexure – I**. The Master Plan is available in public domain and has also been circulated to the State Governments for its implementation.

Water being a State subject, initiatives on water management including conservation and artificial recharge to ground water is primarily States’ responsibility. State Governments are supposed to take suitable measures in consonance with CGWA guidelines to improve the ground water resources.

It is pertinent to mention here that the rise or fall of ground water level depends on several natural and man-made factors. The most important natural factor is rain fall trend of the area. The man-made factors that impact on water level are; pattern of extraction of ground water for different usage and also various supply and demand-side interventions like, artificial recharge / rainwater harvesting, efficient use of water for irrigation etc.

Ground Water Resource Assessment of the country is being periodically carried out jointly by CGWB and State Governments. The total annual replenishable ground water resource in 2011 was 433 BCM and as per latest assessment (2013), the annual replenishable ground water resource of the country is 447 billion cubic meter (BCM).

During assessment year 2013, out of 6584 assessment units in the country, 1034 (15.7%) assessment units are categorized as “Over-Exploited”, whereas during assessment year 2011, the respective figures were 6607 and 1071 (16.2%). State-wise details are given at **Annexure – II**.

Steps taken by the Central Government to promote rain water harvesting are as follows:

- The National Water Policy (2012) formulated by Ministry of Water Resources, RD & GR, inter-alia, advocates conservation, promotion and protection of water and highlights the need for augmenting the availability of water through rain water harvesting, direct use of rainfall and other management measures. The National Water Policy (2012) has been forwarded to all State Governments/UTs and concerned Ministries/Departments of Central Government for adoption.
- Central Ground Water Authority (CGWA) has been constituted under “The Environment (Protection) Act, 1986” for the purpose of regulation and control of ground water development and management in the Country. So far, CGWA has notified 162 areas in the Country for the purpose of regulation of ground water.
- CGWA has issued advisories to States and UTs to take measures to promote/adopt artificial recharge to ground water/rainwater harvesting. 30 States/UTs have made rainwater harvesting mandatory by enacting laws or by formulating rules & regulations or by including provisions in building bye-laws or through suitable Government Orders.
- This Ministry has circulated a Model Bill to all the States/UTs to enable them to enact suitable ground water legislation for its regulation and development which includes provision of rain water harvesting. So far, 15 States/UTs have adopted and implemented the ground water legislation on the lines of Model bill.
- CGWB has taken up Aquifer Mapping and Management programme (NAQUIM) during XII Plan, under the scheme of Ground Water Management and Regulation. The Aquifer Mapping is aimed to delineate aquifer disposition and their characterization for preparation of aquifer/area specific ground water management plans, with community participation.
- The Ministry of Rural Development in consultation and agreement with the Ministry of Water Resources, RD & GR and the Ministry of Agriculture & Farmers’ Welfare has developed an actionable framework for Natural Resources Management (NRM), titled “Mission Water Conservation” to ensure gainful utilization of funds. The Framework strives to ensure synergies in Mahatma Gandhi National Rural Employment Gandhi Scheme (MGNREGS), Pradhan Mantri Krishi Sinchayee Yojana (PMKSY), Integrated Watershed Management Programme (IWMP) and Command Area Development & Water Management (CAD&WM), given their common objectives. Types of common works undertaken under these programmes/schemes are water conservation and management, water harvesting, soil and moisture conservation, groundwater recharge, flood protection, land development, Command Area Development & Watershed Management.

- Department of Land Resources is currently implementing 8214 watershed development projects in 28 States covering an area of about 39.07 million ha. under the Watershed Development Component (WDC) of the Pradhan Mantri Krishi Sinchayee Yojana (PMKSY) principally for development of rainfed portions of net cultivated area and culturable wastelands. The major activities taken up under the WDC-PMKSY, inter-alia, include ridge area treatment, drainage line afforestation, soil and moisture conservation, rain water harvesting, horticulture, and pasture development etc.
- The Ministry of Drinking Water & Sanitation has suggested all States to adopt water conservation measures like roof top rainwater harvesting, erecting sustainability structures for water conservation etc. For creating such sustainability structures, 10 % of National Rural Drinking Water Programme (NRDWP) funds are provided to the States.

ANNEXURE – I

Annexure referred in reply to Lok Sabha Starred Q.No. *83 for reply on 21.12.2017 regarding “Artificial Recharge to Ground Water”

State-wise Rural and Urban Artificial Recharge Structures as Proposed in Master Plan

S.No.	State	Rural		Urban (including habitation)		Total	
		Structure (Number)	Cost (Rs. in crore)	Structure (Number)	Cost (Rs. in Crore)	Structure (Number)	Cost (Rs. in crore)
1	Andhra Pradesh	27696	1248.55	423900	695.24	451596	1943.79
2	Bihar	2058	128.81	100000	164.00	102058	292.81
3	Chhattisgarh	87202	1856.21	200000	309.00	287202	2165.21
4	Delhi	8	0.40	142850	1097.50	142858	1097.90
5	Goa	1393	83.58	10000	16.40	11393	99.98
6	Gujarat	18775	769.00	500000	725.00	518775	1494.00
7	Haryana	44727	1255.30	376000	1675.00	420727	2930.30
8	Himachal	102328	573.47	50000	82.00	152328	655.47
9	Jammu & Kashmir	1688	168.80	100000	145.00	101688	313.80
10	Jharkhand	26282	1733.34	200000	290.00	226282	2023.345
11	Karnataka	72985	1998.66	700000	1148.00	772985	3146.66
12	Kerala	754427	5457.72	315000	456.75	1069427	5914.47
13	Madhya Pradesh	532724	10717.61	600000	984.00	1132724	11701.60
14	Maharashtra	51157	7926.34	1605670	2765.75	1656827	10692.09
15	NER states	15250	765.90	400000	656.00	415250	1421.90
16	Odisha	5856	525.00	300000	499.50	305856	1024.50
17	Punjab	79924	2021.47	375000	1650.00	454924	3671.47
18	Rajasthan	9603	1566.07	500000	820.00	509603	2386.07
19	Sikkim	1905	54.07	5000	13.25	6905	67.32
20	Tamil Nadu	193574	9284.63	0	0.00	193574	9284.63
21	Telangana	39129	1454.6	326100	534.76	365229	1989.36
22	Uttar Pradesh	108945	7629.28	1200000	1968.00	1308945	9597.28
23	Uttarakhand	2900	414.75	48250	68.25	51150	483.00
24	West Bengal	97360	3450.06	300000	522.00	397360	3972.06
25	Andaman & Nicobar Island	1640	44.02	1200	8.00	2840	52.02
26	Chandigarh	0	0.00	8700	652.50	8700	652.50
27	Dadra & Nagar Haveli	65	3.37	1000	1.50	1065	4.87
28	Daman and Diu	0	0.00	4044	4.44	4044	4.44
29	Lakshadweep	0	0.00	6100	30.50	6100	30.50
30	Puducherry	1740	61.40	1000	3.05	2740	64.45
	Total	2283141	61192.41	8799814	17985.39	11082955	79177.80

ANNEXURE - II

Annexure referred in reply to Lok Sabha Starred Q.No. *83 for reply on 21.12.2017 regarding “Artificial Recharge to Ground Water”

Comparison - Categorization of Blocks / Mandals / Taluks / Firka In India from Year 2011 to 2013

S.No.	States / Union Territories	Total No. of Assessed Units		Over-Exploited	
		2011	2013	2011	2013
	States				
1	Andhra Pradesh	662	670	41	61
2	Arunachal Pradesh	11	11	0	0
3	Assam	27	27	0	0
4	Bihar	533	534	0	0
5	Chhattisgarh	146	146	1	1
6	Delhi	27	27	18	15
7	Goa	20	12	0	0
8	Gujarat	223	223	24	23
9	Haryana	116	119	71	64
10	Himachal Pradesh	8	8	1	1
11	Jammu & Kashmir	14	22	0	0
12	Jharkhand	210	260	6	4
13	Karnataka	270	176	63	43
14	Kerala	152	152	1	1
15	Madhya Pradesh	313	313	24	25
16	Maharashtra	353	353	10	9
17	Manipur	8	9	0	0
18	Meghalaya	7	11	0	0
19	Mizoram	22	22	0	0
20	Nagaland	8	11	0	0
21	Odisha	314	314	0	0
22	Punjab	138	138	110	105
23	Rajasthan	243	248	172	164
24	Sikkim	4	-		
25	Tamil Nadu	1129	1139	374	358
26	Telangana	448	443	42	46
27	Tripura	39	39	0	0
28	Uttar Pradesh	820	820	111	113
29	Uttarakhand	18	18	0	0
30	West Bengal	271	268	0	0
	Total (States)	6554	6533	1069	1033
	Union Territories				
1	Andaman & Nicobar	36	34	0	0
2	Chandigarh	1	1	0	0
3	Dadra & Nagar Haveli	1	1	0	0
4	Daman & Diu	2	2	1	0
5	Lakshadweep	9	9	0	0
6	Puducherry	4	4	1	1
	Total (UTs)	53	51	2	1
	Grand Total	6607	6584	1071	1034