GOVERNMENT OF INDIA MINISTRY OF WATER RESOURCES, RIVER DEVELOPMENT & GANGA REJUVENATION LOK SABHA STARRED QUESTION NO. *230 ANSWERED ON 01.12.2016

EXPLOITATION OF GROUND WATER

*230. SHRI RAVNEET SINGH

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

(a) whether the Central Ground Water Board has assessed ground water resources in the country including Punjab during the last three years and if so, the details thereof;

(b) the number of blocks where ground water resources were found to be overexploited/depleted/contaminated and declared as dark zone, State/UT-wise;

(c) whether the Government has any mechanism to determine the number of tubewells which can be drilled for irrigation purposes without affecting the underground water table in the country particularly in Punjab, and if so, the details thereof; and

(d) the corrective steps taken/to be taken by the Government to chek the over exploitation of ground water?

ANSWER

THE MINISTER FOR WATER RESOURCES, RIVER DEVELOPMENT AND GANGA REJUVENATION

(SUSHRI UMA BHARTI)

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

STATEMENT REFERRED IN REPLY TO PARTS (a) TO (d) OF STARRED QUESTION NO. *230 TO BE ANSWERED ON 01.12.2016 IN LOK SABHA REGARDING "EXPLOITATION OF GROUND WATER" ASKED BY SHRI RAVNEET SINGH, HON'BLE M.P :

(a) Central Ground Water Board carries out periodic assessment of replenishable ground water resources jointly with the State Government Departments of the Country including Punjab. As per the latest assessment, the total annual replenishable ground water resource of the Country is around 433 Billion Cubic Metres (BCM). The net annual ground water availability is 398 BCM out of which annual ground water utilization (draft) is estimated as 245 BCM and stage of ground water development/exploitation is 62%. State-wise details are given at **Annexure-I.**

(b) Out of the total 6607 assessment units (Blocks/ Mandals/ Talukas/ Firkas/Districts) assessed in the country, 1071 units are categorised as 'Over-Exploited'. State-wise details are given at **Annexure –II.** State-wise details of the blocks in the Country including Punjab, where high occurrence of various geogenic contaminants is observed in ground water is given at **Annexure-III.**

(c) Ground Water Resources Estimation (GEC-1997) methodology outlines a procedure for estimating ground water availability for future irrigation use. Ground water availability for future irrigation is worked out by deducting the existing draft for irrigation and projected demand for domestic and industrial use upto 2025 from the net annual ground water availability.

As per the ground water resource assessment 2011, ground water availability for future irrigation use for India as a whole is 154.71 BCM and that of Punjab is -14.83 BCM. Negative values indicate that overall ground water demand in the state exceeds annual availability.

(d) Measures taken up by the Central Government to check over exploitation of ground water in the Country include :

- The National Water Policy (2012) formulated by Ministry of Water Resources, RD & GR, interalia, 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.
- 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. In addition, 30 States/UTs have made rain water harvesting mandatory by enacting laws or by formulating rules & regulations or by including provisions in Building bye-laws or through suitable Government Orders.

- 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. Under the CGWA guidelines, in notified areas, no permission is accorded to extract ground water through any energized means for any purpose other than drinking water. However, for non-notified areas, ground water withdrawal by industries is regulated by means of guidelines/criteria as specified as CGWA.
- CGWB has also prepared a conceptual document entitled "Master Plan for Artificial Recharge to Ground Water in India" during 2013. The Master Plan envisages construction of 1.11 Crore rain water harvesting and artificial recharge structures in the Country at an estimated cost of Rs. 79,178 Crores to harness 85 BCM (Billion Cubic Metre) of water. The augmented ground water resources will enhance the availability of water for drinking, domestic, industrial and irrigation purpose. The Master Plan has been circulated to all State Governments for implementation.
- The Department of Rural Development has prioritized work related with Natural Resources Management (including water harvesting) under MGNREGA and has issued a joint framework with this Ministry and Department of Land Resources. For FY 2016-17, the States have taken up a target of 8,82,325 farm ponds.
- CGWB has taken up Aquifer Mapping and Management programme 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.
- Ministry of Urban Development has circulated its Model Building Bye-Laws (2016) to all State Governments which, inter-alia, incorporates provisions for Rain Water Harvesting.
- Ministry of Environment, Forest and Climate Change have merged two separate programmes, namely, National Lake Conservation Plan (NLCP) and National Wetland Conservation Programme (NWCP) into a new Integrated Scheme of National Plan for Conservation of Aquatic Eco-Systems (NPCA) for conservation and management of identified lakes and wetlands in the country.
- CGWB has been organizing mass awareness programmes in the country to promote rain water harvesting and artificial recharge to ground water.

Annexure referred in reply to Part (a) of the Lok Sabha Starred Q.No. 230 dated 01.12.2016 regarding "Exploitation of Ground Water"

State-Wise Ground Water Resources Availability, Utilization and Stage of Development in India (As On 2011)

Sl.	States / Union	Annual	Natural	Net Annual	Annual Ground Water Draft			Stage of
No.	Territories	Replenishable	Discharge	Ground	Irrigation	Domestic	Total	Ground
		Ground Water	during	Water		and		Water
		Resource	non-	Availability		industrial		Development
			monsoon			uses		(%)
			season					
	States							-
1	Andhra Pradesh	20.7892	1.9064	18.8828	6.2694	0.7381	7.0075	37
2	Telangana	15.098	1.4138	13.6844	6.9103	0.5919	7.502	55
3	Arunachal Pradesh	4.5100	0.4500	4.0600	0.0020	0.0010	0.0030	0.08
4	Assam	28.5200	2.7300	25.7900	2.8600	0.6400	3.4900	14
5	Bihar	29.3350	2.4705	26.8645	10.2550	1.6960	11.9509	44
6	Chhattisgarh	12.4200	0.7900	11.6300	3.4300	0.6200	4.0500	35
7	Delhi	0.3105	0.0234	0.2871	0.1402	0.2519	0.3922	137
8	Goa	0.2424	0.0970	0.1454	0.0101	0.0311	0.0411	28
9	Gujarat	18.5686	0.9832	17.5854	10.7477	1.1074	11.8551	67
10	Haryana	10.7800	0.9900	9.7900	12.3500	0.7100	13.0500	133
11	Himachal Pradesh	0.5590	0.0280	0.5311	0.2506	0.1272	0.3778	71
12	Jammu & Kashmir	4.2512	0.4251	3.8261	0.1988	0.6077	0.8065	21
13	Jharkhand	6.3100	0.5500	5.7600	1.3100	0.5500	1.8600	32
14	Karnataka	17.0266	2.2154	14.8112	8.5916	0.8198	9.4114	64
15	Kerala	6.6864	0.6134	6.0730	1.3046	1.5310	2.8355	47
16	Madhya Pradesh	35.0406	1.7520	33.2886	17.4809	1.3527	18.8335	57
17	Maharashtra	33.9474	1.7955	32.1519	16.1460	1.0293	17.1754	53
18	Manipur	0.4401	0.0440	0.3961	0.0033	0.0007	0.0040	1.02
19	Meghalaya	1.7805	0.1780	1.6024	0.0015	0.0002	0.0017	0.08
20	Mizoram	0.0304	0.0030	0.0273	0.0000	0.0010	0.0010	3.52
21	Nagaland	0.6159	0.0616	0.5543	0.0000	0.0340	0.0340	6.13
22	Odisha	17.7768	1.0859	16.6909	3.8126	0.9162	4.7288	28
23	Punjab	22.5300	2.2100	20.3200	34.1700	0.7100	34.8800	172
24	Rajasthan	11.9414	1.1125	10.8290	13.1332	1.7098	14.8430	137
25	Sikkim*	-	-	0.0442	0.0027	0.0086	0.0113	26
26	Tamil Nadu	21.5326	2.1533	19.3793	13.1688	1.7638	14.9326	77
27	Tripura	2.5866	0.2286	2.3580	0.0932	0.0694	0.1626	7
28	Uttar Pradesh	77.1900	5.5300	71.6600	48.7400	4.0400	52.7800	74
29	Uttarakhand	2.0403	0.0449	1.9954	1.1033	0.0298	1.1331	57
30	West Bengal	29.2511	2.6688	26.5823	9.7195	0.9731	10.6926	40
	Total (States)	432.11	34.55	397.60	222.21	22.66	244.85	62
	Union Territories							
1	Andaman & Nicobar	0.3080	0.0216	0.2865	0.0006	0.0121	0.0127	4.44
2	Chandigarh	0.0216	0.0022	0.0194	0.0000	0.0000	0.0000	0
3	Dadra& Nagar Haveli	0.0622	0.0031	0.0591	0.0072	0.0056	0.0129	22
4	Daman & Diu	0.0181	0.0012	0.0169	0.0145	0.0019	0.0164	97
5	Lakshadweep	0.0105	0.0070	0.0035	0.0000	0.0023	0.0023	67
6	Puducherry	0.1893	0.0190	0.1703	0.1237	0.0293	0.1530	90
	Total (UTs)	0.6100	0.0500	0.5600	0.1500	0.0500	0.2000	36
	Grand Total	432.7200	34.6000	398.1600	222.3600	22.7100	245.0500	62

* Note: Net ground water availability in Sikkim has been estimated based on spring discharge and is not reflected in the corresponding total annual replenishable resource. This results in a difference of 0.044 bcm in the State Total and Grand Total.

Annexure referred in reply to Part (b) of the Lok Sabha Starred Q.No. 230 dated 01.12.2016 regarding "Exploitation of Ground Water"

Categorization Of Blocks/ Mandals/ Talukas /Firkas In India As Per Dynamic Ground Water Resources Assessment

(2011)

Sl.No.	States / Union	Total No. of	Safe		Semi-		Critical		Over-		Saline	
	Territories	Assessed			critical				exploited			
		Units	Nos.	%	Nos.	%	Nos.	%	Nos.	%	Nos.	%
	States											
1	Andhra Pradesh	662	534	81	42	6	7	1	41	6	38	6
2	Telangana	448	343	77	55	12	8	2	42	9	0	0
3	Arunachal Pradesh	11	11	100	0	0	0	0	0	0	0	0
4	Assam	27	27	100	0	0	0	0	0	0	0	0
5	Bihar	533	522	98	11	2	0	0	0	0	0	0
6	Chhattisgarh	146	125	86	18	12	2	1	1	1	0	0
7	Delhi	27	2	7	5	19	2	7	18	67	0	0
8	Goa	20	20	100	0	0	0	0	0	0	0	0
9	Gujarat	223	171	77	13	6	5	2	24	11	10	4
10	Haryana	116	23	20	7	6	15	13	71	61	0	0
11	Himachal Pradesh	8	5	63	0	0	2	25	1	13	0	0
12	Jammu & Kashmir	14	14	100	0	0	0	0	0	0	0	0
13	Jharkhand	210	199	95	5	2	0	0	6	3	0	0
14	Karnataka	270	152	56	34	13	21	8	63	23	0	0
15	Kerala	152	126	83	23	15	2	1	1	1	0	0
16	Madhya Pradesh	313	218	70	67	21	4	1	24	8	0	0
17	Maharashtra	353	325	92	16	5	2	1	10	3	0	0
18	Manipur	8	8	100	0	0	0	0	0	0	0	0
19	Meghalaya	7	7	100	0	0	0	0	0	0	0	0
20	Mizoram	22	22	100	0	0	0	0	0	0	0	0
21	Nagaland	8	8	100	0	0	0	0	0	0	0	0
22	Odisha	314	308	98	0	0	0	0	0	0	6	2
23	Punjab	138	22	16	2	1	4	3	110	80	0	0
24	Rajasthan	243	25	10	20	8	24	10	172	71	2	1
25	Sikkim	4	4	100	0	0	0	0	0	0	0	0
26	Tamil Nadu	1129	437	39	235	21	48	4	374	33	35	3
27	Tripura	39	39	100	0	0	0	0	0	0	0	0
28	Uttar Pradesh	820	559	68	82	10	68	8	111	14	0	0
29	Uttarakhand	18	11	61	5	28	2	11	0	0	0	0
30	West Bengal	271	217	80	53	20	1	0.37	0	0	0	0
	Total States	6554	4484	68	693	11	217	3	1069	16	91	1
	Union Territories											
1	Andaman & Nicobar	36	36	100	0	0	0	0	0	0	0	0
2	Chandigarh	1	1	100	0	0	0	0	0	0	0	0
3	Dadra & Nagar Haveli	1	1	100	0	0	0	0	0	0	0	0
4	Daman & Diu	2	0	0	1	50	0	0	1	50	0	0
5	Lakshadweep	9	6	67	3	33	0	0	0	0	0	0
6	Puducherry	4	2	50	0	0	0	0	1	25	1	25
	Total (UTs)	53	46	87	4	8	0	0	2	4	1	2
	Grand Total	6607	4530	69	697	11	217	3	1071	16	92	1

Annexure referred in reply to Part (b) of the Lok Sabha Starred Q.No. 230 dated 01.12.2016 regarding "Exploitation of Ground Water"

State-W	Vise	Details	Of B	Blocks	With	Geogen	ic (Contami	nants I	n G	round	Wate	er
State 1		Detunis				Geogen	iie v	Containin			louna		~

Sl.	No. of States	No. of Blocks affected									
No		Salinity	Fluoride	Nitrate	Arsenic	Iron					
		(EC above 3000	(above 1.5	(above 45	(above	(above 1					
		micro mhos/	mg/l)	mg/l)	0.01 mg/l)	mg/l)					
		cm)									
1	Andhra Pradesh	65	117	162	4	34					
2	Telangana	17	215	115	2	38					
3	Assam*	0	9	0	19	18					
4	Arunachal Pradesh*	0	0	0	0	4					
5	Bihar	3	141	26	78	32					
6	Chhattisgarh	0	29	33	1	9					
7	Delhi	11	10	14	2	0					
8	Goa	0	0	0	0	2					
9	Gujarat	104	69	143	22	46					
10	Haryana	34	91	45	26	45					
11	Himachal Pradesh	0	0	8	1	0					
12	Jammu & Kashmir	0	2	11	7	22					
13	Jharkhand	0	38	16	3	7					
14	Karnataka	114	118	160	7	116					
15	Kerala	15	10	35	0	74					
16	Madhya Pradesh	22	79	260	25	127					
17	Maharashtra	25	32	158	0	28					
18	Manipur*	0	0	0	2	0					
19	Meghalaya*	0	0	0	0	0					
20	Nagaland*	0	0	0	0	0					
21	Odisha	42	68	38	1	91					
22	Punjab	14	43	50	24	43					
23	Rajasthan	87	203	123	1	58					
24	Tamil Nadu	70	51	154	14	10					
25	Tripura*	0	0	0	0	4					
26	Uttar Pradesh	35	74	180	121	26					
27	Uttarakhand	0	0	9	0	0					
28	West Bengal	59	43	7	90	331					
29	Andaman & Nicobar	1	0	0	0	6					
30	Dadra & Nagar Haveli	0	0	1	0	0					
31	Chandigarh	0	0	0	0	0					
32	Daman & Diu	2	0	1	1	1					
33	Puducherry#	0	0	2	0	0					
34	Lakshadweep^	0	3	0	0	0					
Total		720	1445	1751	451	1172					

*District as unit of survey, # Region as unit of survey, ^ Island as unit of survey. Note: Data Source is CGWB survey upto May2015 and reports