

GOVERNMENT OF INDIA  
MINISTRY OF WATER RESOURCES,  
RIVER DEVELOPMENT & GANGA REJUVENATION  
**LOK SABHA**  
**UNSTARRED QUESTION NO. 202**  
ANSWERED ON 02.02.2017

**WATER SCARCITY**

202. KUMARI SHOBHA KARANDLAJE  
SHRI PRATHAP SIMHA

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

- (a) the norms/criteria fixed for considering a location as water stressed and water scarce in terms of annual per capita availability of water in the country;
- (b) the State-wise per capita availability of water at present and its expected availability by 2025 along with current status of groundwater resources in the country as per the latest assessment;
- (c) whether per capita availability of water in different parts of the country has come down recently and groundwater level is depleting rapidly, if so, the details thereof and the reasons for the same along with the current level of groundwater in each State;
- (d) the steps taken/to be taken to recharge groundwater and make available sufficient water to public; and
- (e) the funds allocated/released/utilised for research and development programmes in water sector during the last three years and current year pertaining to groundwater, surface water and climate change especially?

**ANSWER**

THE MINISTER OF STATE FOR WATER RESOURCES, RIVER DEVELOPMENT AND GANGA REJUVENATION

(DR. SANJEEV KUMAR BALYAN)

(a) to (c) As per National Commission on Integrated Water Resources Development (NCIWRD) report, the total water availability of India as a whole received through precipitation is about 4000 Billion cubic meter (BCM) per annum. After evaporation, 1869 BCM water is available as natural runoff. Due to geological and other factors, the utilizable water availability is limited to 1123 BCM per annum, comprising of 690 BCM of surface water and 433 BCM of replenishable ground water. However, water available per person is dependent on population of the country and for India, water availability per capita is reducing progressively due to increase in population.

The average annual per capita availability of water in the country taking into consideration the population of the country as per the 2001 census, 2011 census and the population projection for the year 2025 is as under:

Year	Population (In Million)	Per capita Average Annual Availability (m <sup>3</sup> /year)	Remark
2001	1029	1816	
2011	1210	1545	water stressed condition
2025	1394 (Projected)	1340	water stressed condition

Contd.p2/-

There is no norm/criteria fixed by Ministry of Water Resources, River Development and Ganga Rejuvenation for considering a location in the country as water stressed or water scarce in terms of annual per capita availability of water. However, The NCIWRD Report mentions that as per Falkenmark indicators, per capita water availability of less than 1700 cubic meters (m<sup>3</sup>) is termed as a water-stressed condition while below 1000 m<sup>3</sup> is termed as a water scarcity condition.

River basin being the natural hydrological unit, total water resources availability is assessed river basin wise. The details of the basin-wise average annual water resources availability (or potential) assessed by Central Water Commission in 1993 is at **Annexure I**. Since total water availability is not assessed state-wise, state-wise per capita water availability is not available in the Ministry.

Central Ground Water Board (CGWB) and State Ground Water Organisations jointly assess replenishable ground water resources periodically in 6607 assessment Units (Firkas/Blocks/Mandals/Talukas/Districts) in the country. A Statement indicating the State-wise availability of ground water resources assessed in 2011 is given at **Annexure II**.

(d) Water being a State subject, steps for its augmentation, conservation and efficient management including groundwater recharge are undertaken by the respective State Governments. In order to supplement the efforts of the State Governments, Central Government provides technical and financial assistance to State Governments to encourage sustainable development and efficient management of water resources through various schemes and programmes.

Some of the steps taken by this Ministry to recharge groundwater and make available sufficient water to the people are as follows:

- CGWB has prepared a conceptual document entitled “Master Plan for Artificial Recharge to Ground Water in India” during 2013, involving ground water scientists/experts. The Master Plan envisages construction of 1.11 crore rain water harvesting and artificial recharge structures in the country 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.
- Central Ground Water Authority (CGWA) constituted under “The Environment (Protection) Act, 1986” for the purpose of regulation and control of ground water development and management in the country has so far 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. For non-notified areas, ground water withdrawal by industries is regulated as per guidelines/criteria specified by CGWA.
- CGWA has issued advisories to States and UTs to take measures to promote/adopt artificial recharge to ground water / rain water harvesting. 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.

- 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.
- 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.
- CGWB had taken up Demonstrative Rain Water Harvesting and Artificial Recharge projects in 22 States of the Country, under Central Sector Scheme "Ground Water Management & Regulation". Under the scheme, 133 demonstrative recharge projects were approved for construction of recharge structures in various States/UTs with an anticipated annual recharge to ground water at about 55.20 MCM (Million Cubic Metre). During last three years, 117 artificial recharge structures were constructed under the scheme.
- MoWR, RD & GR has also launched 'Jal Kranti Abhiyan' (2015-16 to 2017-18) in order to consolidate water conservation and management in the Country through a holistic and integrated approach involving all stakeholders, making it a mass movement.
- Central Government has also formulated a National Perspective Plan for Water Resources Development which envisages transfer of water from surplus basins to water deficit basins. The inter-basin transfer proposals envisage additional utilization of available water to bring additional area under irrigation.
- Further, MoRD has taken up an extensive programme for construction of farm ponds: 882325 farm ponds are being constructed under MGNREGA during the current year. These would also help in recharge of groundwater.

(e) This Ministry sponsors research projects pertaining to Surface Water, Ground Water and Climate Change under "Research & Development (R&D) Programme in Water Sector". Funds allocated/released/utilised under this scheme during the last three years and current year pertaining to groundwater, surface water and climate change is given below:

Year	BE (Rs Crore)	RE(Rs Crore)	Expenditure(Rs Crore)
2013-14	50.00	35.00	31.36
2014-15	50.00	34.55	31.46
2015-16	30.00	54.60	40.36
2016-17 (Current Year )	55.00	35.00	26.82 (Till Dec, 2016)

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(Annexure referred to in reply to parts (a) to (c) of the Lok Sabha Unstarred Question No. 202 to be answered on 02.02.2017 regarding “Water Scarcity”)

**WATER RESOURCES AVAILABILITY (POTENTIAL) OF RIVER BASINS OF INDIA  
(YEAR 1993)**

<b>Sl. No.</b>	<b>River Basin</b>	<b>Average Water Resources Potential (In Billion Cubic Meter)</b>
1	Indus	73.3
2	Ganga-Brahmaputra-Meghna	
	(a) Ganga	525.0
	(b) Brahmaputra	537.2
	(c) Barak & others	48.4
3	Godavari	110.5
4	Krishna	78.1
5	Cauvery	21.4
6	Subernarekha	12.4
7	Brahmani-Baitarni	28.5
8	Mahanadi	66.9
9	Pennar	6.3
10	Mahi	11.0
11	Sabarmati	3.8
12	Narmada	45.6
13	Tapi	14.9
14	West Flowing Rivers from Tapi to Tadri	87.4
15	West Flowing Rivers from Tadri to Kanyakumari	113.5
16	East Flowing Rivers between Mahanadi and Pennar	22.5
17	East Flowing Rivers between Pennar & Kanyakumari	16.5
18	West Flowing Rivers of Kutch and Saurashtra including Luni	15.1
19	Area of Inland Drainage in Rajasthan	Negligible
20	Minor Rivers draining into Myanmar (Burma) and Bangladesh	31.0
	<b>Total</b>	<b>1,869.4</b>

(Annexure referred to in reply to parts (a) to (c) of the Lok Sabha Unstarred Question No. 202 to be answered on 02.02.2017 regarding “Water Scarcity”)

**STATE WISE GROUND WATER RESOURCES AVAILABILITY (YEAR 2011)**

<b>Sl. No.</b>	<b>States / Union Territories</b>	<b>Total Annual Replenishable Ground Water Resource (In Billion Cubic Meter)</b>
1	Andhra Pradesh	20.7892
2	Telangana	15.0983
3	Arunachal Pradesh	4.5100
4	Assam	28.5200
5	Bihar	29.3350
6	Chhattisgarh	12.4200
7	Delhi	0.3105
8	Goa	0.2424
9	Gujarat	18.5686
10	Haryana	10.7800
11	Himachal Pradesh	0.5590
12	Jammu & Kashmir	4.2512
13	Jharkhand	6.3100
14	Karnataka	17.0266
15	Kerala	6.6864
16	Madhya Pradesh	35.0406
17	Maharashtra	33.9474
18	Manipur	0.4401
19	Meghalaya	1.7805
20	Mizoram	0.0304
21	Nagaland	0.6159
22	Odisha	17.7768
23	Punjab	22.5300
24	Rajasthan	11.9414
25	Sikkim	-
26	Tamil Nadu	21.5326
27	Tripura	2.5866
28	Uttar Pradesh	77.1900
29	Uttarakhand	2.0403
30	West Bengal	29.2511
	<b>Total States</b>	<b>432.1109</b>
	<b>Union Territories</b>	
1	Andaman & Nicobar	0.3080
2	Chandigarh	0.0216
3	Dadra & Nagar Haveli	0.0622
4	Daman & Diu	0.0181
5	Lakshadweep	0.0105
6	Puducherry	0.1893
	Total UTs	0.6097
	<b>Grand Total</b>	<b>432.7206</b>