

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

**UNSTARRED QUESTION NO. 1205**

ANSWERED ON 31.07.2023

**URBAN FLOODING**

1205. SHRI S NIRANJAN REDDY

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

- (a) whether Government is aware that urban flooding has caused huge economic loss in recent years;
- (b) whether Government has conducted a study to assess groundwater recharge techniques and other nature-based solutions to tackle urban flooding in flood-prone States;
- (c) the State-wise data on the number of artificial recharge structures constructed in the last three years, especially in Andhra Pradesh; and
- (d) whether Government plans to formulate a National Policy on Urban Flooding?

**ANSWER**

**THE MINISTER OF STATE FOR JAL SHAKTI**

(SHRI BISHWESWAR TUDU)

(a) Increased incidence of high intensity rainfall in short duration is mainly responsible for urban floods which is further compounded by unplanned growth, encroachment of natural water bodies, poor drainage system, etc. Management of urban flooding falls under purview of the State Governments and the Urban Local Bodies / Urban Development Authorities who are responsible for maintaining the drainage and sewerage system. The State-wise data on damages due to heavy rain and floods in the entire State (rural and urban areas) is compiled by Central Water Commission (CWC) after receipt of confirmation from respective States/UTs. The details of damages for the past ten years 2012 to 2021 are at **Annexure- I**.

(b) Several initiatives have been taken by Union Government to encourage groundwater recharge and other nature-based solutions to tackle urban flooding in flood-prone areas. Master Plan for Artificial Recharge to Groundwater - 2020 has been prepared by the CGWB in collaboration with States/UTs envisaging construction of about 1.42 crore rain water harvesting and artificial recharge structures in the country to harness 185 Billion Cubic Meter (BCM) of water. The Master Plan has been shared with States/UTs for suitable interventions. Other initiatives in this regard are as follows-

- i. 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. JSA was continued during the years 2021 and 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 has been launched by Hon'ble President of India on 4th March 2023 with the theme "Source Sustainability for Drinking Water".

- ii. Amrit Sarovar Mission has been launched with an aim of 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.
- iii. Central Government is implementing Atal Bhujal Yojana involving the local communities at village levels 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. Under Atal Bhujal Yojana, the focus is on demand side management of ground water and accordingly water saving interventions such as use of micro irrigation (drip/sprinkler system), shifting of cropping pattern from high water intensive crops to low water intensive crops, mulching etc. are being encouraged and incentivised.
- iv. Under the Atal Mission for Rejuvenation and Urban Transformation (AMRUT) 2.0 Scheme, provisions have been made for harvesting the rainwater through storm water drains into water body (which is not receiving sewage/effluent) & creation/ strengthening of storm water drains around water body.
- v. 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.

(c) Apart from works carried out for artificial recharge of ground water by the respective State/UT Governments, Central Ground Water Board (CGWB) has implemented artificial recharge work in three Aspirational Districts, Osmanabad (Maharashtra), YSR Kadapa (Andhra Pradesh) and Jangaon (Telangana). In these Districts, 176 structures have been constructed to harvest the runoff water in stream to store at suitable locations for augmenting recharge to the ground water. CGWB has also implemented Bridge cum Bandhara (BCB) for ground water recharge in the districts of Wardha and Amravati of Maharashtra State at five locations. Under the project 'Groundwater augmentation through artificial recharge in identified water stressed areas of Rajasthan' in the Districts of Jodhpur, Jaisalmer & Sikar recharge structures comprising of 2 Earth Dams, 55 check dams, 24 anicuts and 1 recharge shaft have been constructed by CGWB.

Water conservation and rain water harvesting structures implemented under Jal Shakti Abhiyan in the State of Andhra Pradesh during last three years is given at **Annexure- II**.

**(d)** The National Water Policy (2012) formulated by this Ministry *inter alia* advocates that the conservation of rivers, river corridors, water bodies and infrastructure should be undertaken in a scientifically planned manner through community participation. The storage capacities of water bodies and water courses and/or associated wetlands, the flood plains, ecological buffer and areas required for specific aesthetic recreational and/or social needs may be managed to the extent possible in an integrated manner to balance the flooding, environment and social issues as per prevalent laws through planned development of urban areas, in particular.

Urban settlements, encroachments and any developmental activities in the protected upstream areas of reservoirs / water bodies, key aquifer recharge areas that pose a potential threat of contamination, pollution, reduced recharge and those endanger wild and human life should be strictly regulated.

MoHUA has issued Standard Operating Procedures (SoPs) on Urban Flooding in 2017 and published manual on Storm Water Drainage Systems, 2019 to assist the States/ Union Territories (UTs), Urban Local Bodies (ULBs) and other stakeholders on planning, design, operation and maintenance of storm water drainage systems and to assist all States/ UTs to raise the level of preparedness in the event of urban flooding, and for emergency operations, including rescue and restoration of services.

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**ANNEXURE -I**

**ANNEXURE REFERRED TO IN REPLY TO PART (a) OF UNSTARRED QUESTION NO. 1205 TO BE ANSWERED IN RAJYA SABHA ON 31.07.2023 REGARDING “URBAN FLOODING”.**

**Statement showing damage due to floods / heavy rains during 2012 to 2021 in India**

Year	Area affected in m.ha.	Population affected in million	Damage to Crops		Damage to Houses		Cattle Lost Nos.	Human live Lost Nos.	Damage to Public Utilities in Rs.Crore	Total damages Crops, Houses & Public utilities in Rs.Crore (col.6+8+11)
			Area in m. ha.	Value in Rs.Crore	Nos.	Value in Rs.Crore				
2	3	4	5	6	7	8	9	10	11	12
2012	2.14	14.69	1.95	1,534.11	1,74,526	240.57	31,558	933	9,169.97	10,944.65
2013	7.55	25.93	7.48	6,378.08	6,99,525	2,032.83	1,63,958	2,180	38,937.84	47,348.75
2014	12.78	26.51	8.01	7,255.15	3,11,325	581.98	60,196	1,968	7,710.95	15,548.08
2015	4.48	33.20	3.37	17,043.95	39,59,191	8,046.97	45,597	1,420	32,200.18	5,7291.10
2016	7.06	26.55	6.66	4,052.72	2,78,240	114.68	22,367	1,420	1,507.93	5,675.33
2017	6.08	47.34	4.97	8,951.98	12,52,914	9,384.02	26,673	2,063	12,329.85	30,665.85
2018	7.72	37.40	2.51	3,708.19	9,13,414	2,508.66	60,279	1,839	12,132.92	21,849.97
2019	11.60	46.35	10.69	10,902.35	6,56,595	462.79	25,852	2,754	4,498.39	15,868.53
2020	6.90	26.79	6.55	5,626.02	2,39,539	272.10	46,911	1,474	5,458.01	21,194.17
2021	16.75	38.56	7.79	22,809.18	4,61,205	3,960.07	64,880	1,371	25,244.61	49,617.62

**ANNEXURE-II**

**ANNEXURE TO BE REFERRED TO IN REPLY TO PART (c) OF UNSTARRED QUESTION NO. 1205 TO BE ANSWERED IN RAJYA SABHA ON 31.07.2023 REGARDING “URBAN FLOODING”.**

**Water Conservation and Rain water harvesting structures implemented under Jal Shakti Abhiyaan in the State of Andhara Pradesh during last three years**

<b>Sl. No.</b>	<b>Structures</b>	<b>22.03.2021 to 28.03.2022</b>	<b>29.03.2022 to 03.03.2023</b>	<b>04.03.2023 to 28.07.2023</b>
1	Check Dams	622	774	408
2	Ponds/Tanks	53,417	43,093	22,015
3	Trench	2,963	2,237	1,347
4	Roof Top Water Harvesting structures	103	6	17
5	Other rain Water recharge Structures	530	214	122
6	Other rain water conservation Structures	39,273	32,500	12,413

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