

GOVERNMENT OF INDIA  
MINISTRY OF JAL SHAKTI

DEPARTMENT OF WATER RESOURCES, RIVER DEVELOPMENT & GANGA REJUVENATION

**RAJYA SABHA**

**UNSTARRED QUESTION NO. 883**

ANSWERED ON 11.12.2023

**GROUND WATER DEPLETION IN PUNJAB**

883. SHRI VIKRAMJIT SINGH SAHNEY

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

- (a) whether it is a fact that Punjab have reached the stage of ground water extraction greater than 100 per cent in the year 2022;
- (b) if so, the steps taken by Government to check ground water depletion in the State of Punjab;
- (c) the funds allocated and fund released to the State of Punjab in last five years to check ground water depletion, year-wise, district-wise; and
- (d) whether Government is taking any steps to reduce the dependence on groundwater and restore water table of Punjab?

**ANSWER**

**THE MINISTER OF STATE FOR JAL SHAKTI**

(SHRI BISHWESWAR TUDU)

**(a)** The Dynamic Ground Water Resources of the country, including in the state of Punjab, are being periodically assessed jointly by Central Ground Water Board (CGWB) and the nodal agencies of the respective State Governments. As per the Dynamic Ground water Assessment 2022, in Punjab, the total Annual Ground Water Recharge is about 18.94 Billion Cubic Meter (BCM) and the Annual Extractable Ground Water Resource is about 17.07 BCM. The Annual Ground Water Extraction for all uses is about 28.02 BCM. From this the overall 'Stage of Extraction of Ground water(SOE)' (i.e. the ratio of total annual ground water extraction for all uses to total annual extractable available groundwater resource)' for the State of Punjab is arrived at 164.15% .However, it may be noted that as per the assessment of 2023, the SOE for Punjab has slightly improved to 163.76%.

**(b) to (d)** Water being a state subject, sustainable development and management of groundwater resources is primarily the responsibility of the State Government. However, the Central Government facilitates the efforts of the State Governments including Punjab through technical and financial assistance. The important measures being taken by the Central Government for sustainable ground water management in the country can be seen at

<https://cdnbbsr.s3waas.gov.in/s3a70dc40477bc2adceef4d2c90f47eb82/uploads/2023/02/2023021742.pdf>

Some of the important steps taken by the Department of Water Resources RD &GR for sustainable groundwater management in the country including Punjab are given as under:

- i. Government of India is implementing Jal Shakti Abhiyan (JSA) in the country including Punjab 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 which continued during the years 2021 and,2022 (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 have been launched by Hon'ble President of India on 04 March 2023 with the theme “Source Sustainability for Drinking Water”
- ii. Hon’ble Prime Minister has launched Amrit Sarovar Mission on 24<sup>th</sup> April 2022. The Mission is aimed at developing and rejuvenating 75 water bodies in each district of the country as a part of celebration of Azadi ka Amrit Mahotsav.
- iii. CGWB has taken up National Aquifer Mapping Programme (NAQUIM) to delineate and characterise the aquifer system in the country including Punjab. NAQUIM have been carried out in Punjab for a mappable area of 50369 Sq km. Based on NAQUIM studies, groundwater management plans / reports have been prepared and shared with the State for suitable implementation.
- iv. Master Plan for Artificial Recharge to Groundwater- 2020 has been prepared by CGWB in consultation with the States/ UTs including Punjab which is a macro level plan indicating various structures for the different terrain conditions of the country including estimated cost. Master Plan for Artificial Recharge for 20 water stressed districts of Punjab covering an area of 45,592 Sq. Km has been prepared and shared with the State Govt. of Punjab for suitable interventions. It can be seen at the website of CGWB (<http://cgwb.gov.in/cgwbpm/public/uploads/documents/168613326251844776file.pdf>)
- v. Department of Agriculture & Farmers Welfare is implementing Per Drop More Crop (PDMC) component of Pradhan Mantri Krishi Sinchayee Yojana (PMKSY) which is operational from 2015-16 in the Country. The PMKSY-PDMC mainly focuses on water use efficiency at farm level through precision/micro irrigation. Besides promoting precision irrigation (Drip and Sprinkler Irrigation System) & better on-farm water management practices (to optimize the use of available water resources), this component also supports micro level water storage or, water conservation/management activities to supplement Micro Irrigation.
- vi. MoJS has also issued advisories to States/UTs to review their free/subsidized electricity policy to farmers, bring suitable water pricing policy and may work further towards crop rotation/diversification/other initiatives to reduce over-dependence on groundwater.
- vii. MoJS is promoting conjunctive use of surface water and groundwater and to reduce over-dependence on groundwater, surface water based Major and Medium irrigation projects have been taken up in the country under PMKSY-AIBP scheme in collaboration with States/UTs.

In addition to and to complement the measures taken by the Central government, the state government of Punjab also has initiated several measures for curbing depletion of ground water, improving water use efficiency and reduce the dependence on ground water for irrigation. Some of the important steps taken by the Government of Punjab for sustainable management of the ground water in the State of Punjab are given in **Annexure -I** to this reply.

Central Government supports construction of water harvesting and conservation works primarily through Pradhan Mantri Krishi Sinchayee Yojana – Watershed Development Component (PMKSY-WDC) and Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS). Central assistance is also being provided for irrigation projects like Shahpurkandi project in Punjab.

- i. Under PMKSY-WDC activities undertaken, *inter alia*, include ridge area treatment, drainage line treatment, soil and moisture conservation, rainwater harvesting, nursery raising, pasture development, livelihoods for asset-less persons etc. WDC-PMKSY, through these interventions, seeks to ensure sustainable development through improved natural resource management. PMKSY-WDC 2.0 has been launched in the country for the period 2021-22 to 2025-26 From 2021-22 and the Central share released to Punjab under WDC-PMKSY 2.0 is given below:

(Rs. in Cr.)

2021-22	2022-23	2023-24 (as on 6.12.2023)
3.03	5.30	3.23

- ii. Under Shahpurkandi dam project the storage of water may lead to significant GW recharge in the neighboring area, for which in the last 4 years a total central assistance of Rs. 290.35 cr has been released to the state of Punjab. Year wise details are given below:

Financial Year	Central Assistance Released in Rs. Cr
2019-20	60
2020-21	147.45
2021-22	49.14
2022-23	33.76
<b>Total</b>	<b>290.35</b>

- iii. Further, as per the information of Ministry of Rural Development a total expenditure of Rs. 9323.78 lakhs has been incurred on water conservation and water harvesting works during last five years and current year in the state of Punjab under Mahatma Gandhi NREGS. District-wise details are given in **Annexure -II**.

\*\*\*

**ANNEXURE REFERRED TO IN REPLY TO PART (b) to (d) OF UNSTARRED QUESTION NO. 883 TO BE ANSWERED IN LOK SABHA ON 11.12.2023 REGARDING “GROUND WATER DEPLETION IN PUNJAB”.**

**Initiatives taken by Government of Punjab for sustainable management of Groundwater**

The important steps taken by the Government of Punjab for sustainable management of ground water in the State of Punjab are-

- i. The Punjab Water Resources Regulation and Development Authority (PWRDA) has been established under section 3 of Punjab Water Resources (Management and Regulation) Act, 2020 Act. The Authority will ensure conservation, management and regulation of water in the State in accordance with the Integrated State Water Plan (ISWP).
- ii. State Government has set-up a dedicated Directorate of Ground Water Management, with the prime objective of conserving and managing water resources.
- iii. The Punjab Preservation of Sub-Soil Water Ordinance, 2008- The Ordinance provides for the prohibition of sowing nursery of paddy before 10th May and transplanting paddy as notified by State Government, i.e. before 15th June. The contravention of the provisions of the Ordinance invites penalty, in addition to the expenses incurred for destroying the nursery of paddy sown or transplanted before the specified or notified dates.
- iv. Diversification from Paddy to Maize under National Adaptation for climate change for 2019-20. Area under cotton has also been taken during 2019-20.
- v. Punjab government is implementing ‘Pani Bacho, Paise Kamao’ scheme wherein farmers are incentivised for reducing their electricity consumption used for irrigation.
- vi. Encouragement of Resource Conservation Technology (RCT) like Laser Land Levelling, Zero Tilling, etc. is being done in farming communities. The state government provides subsidy to farmers for custom hiring of this machinery.
- vii. Medium/Short Duration Rice varieties are being promoted over long duration ones, to save water. Information regarding the same is being disseminated at district, block and village level camps. Further, these varieties are being popularized through demonstration plots.
- viii. Roof Top Rain Water Harvesting has been made mandatory in all buildings above 200 sq. yds. by amending the buildings by-laws vide Chief Town Planner, Local Govt. Department, Punjab vide Notification No.10/19/05-2LG/803 III dated 28.12.2005. PUDA is also amending building bye-laws applicable outside the municipal limits, to make Roof Top Rain Water Harvesting mandatory in buildings constructed in area where water table is falling.
- ix. Government of Punjab has constructed low dams to provide irrigation facilities under Bharat Nirman Program. These dams facilitate in augmenting the Ground Water Resources of the State & in arresting the declining ground water table.



ANNEXURE REFERRED TO IN REPLY TO PART (b) to (d) OF UNSTARRED QUESTION NO. 883 TO BE ANSWERED IN LOK SABHA ON 11.12.2023 REGARDING "GROUND WATER DEPLETION IN PUNJAB".

Details of Water Conservation and Water Harvesting works taken up during last five years and current year in the state of Punjab under mahatma Gandhi NREGS (as on 6th December 2023)																									
S.No	District	2018-19				2019-20				2020-21				2021-22				2022-23				2023-24			
		Completed		Ongoing		Completed		Ongoing		Completed		Ongoing		Completed		Ongoing		Completed		Ongoing		Completed		Ongoing	
		No.o f work	Exp.in lakh																						
	<b>Total</b>	257	830.47	497	89.07	506	912.2	883	169.26	596	1405.2	1625	216.06	736	1423.7	1746	368.13	650	1228.4	2190	970.66	661	331.43	2448	1379.2
1	AMRITSAR	0	0	5	0	9	11.37	5	0.09	7	11.96	7	2.34	10	13.02	8	1.58	7	4.46	20	6.97	4	7.7	27	16.74
2	BARNALA	4	14.94	8	4.38	7	10.66	7	0.35	34	150.36	72	4.08	40	161.13	70	28.48	32	167.54	75	107.39	48	34.76	96	157.17
3	BHATINDA	77	146.54	55	0.45	77	85.17	63	0.69	82	129.28	95	2.92	70	116.98	91	6.79	53	119.14	122	50.35	75	24.09	116	51.22
4	FARIDKOT	10	28.45	34	1.06	28	28	49	6.48	28	43.14	77	0.96	56	28.17	61	2.29	49	41.73	62	3.33	24	8.29	117	19.97
5	FATEHGARH SAHIB	0	0.12	4	0	47	24.35	28	1.59	17	13.18	49	0.74	13	29.73	53	6.53	12	16.51	50	4.33	18	6.54	44	1.22
6	Fazilka	3	9.15	4	3.69	2	12.44	4	7.09	0	0.04	8	14.54	3	43.82	30	0.19	6	12.52	108	23.74	24	40.38	97	91.5
7	FEROZEPUR	12	29.18	36	41.13	10	16.09	60	20.16	12	20.86	53	0.09	13	0.1	57	5.05	8	1.15	63	0.98	10	0.12	54	0.55
8	GURDASPUR	0	0.45	2	0	0	7.06	16	3.16	13	43.11	71	13.81	38	50.32	94	10.94	31	10.58	73	31.57	31	6.48	45	7.09
9	HOSHIARPUR	25	38.73	28	4.14	46	102.28	98	3.87	73	171.53	166	26.9	97	141.76	166	34.63	92	116.95	210	114.07	55	11.8	206	108.26
10	JALANDHAR	1	1.68	6	8.45	3	3.66	12	14.02	12	11.79	26	16.16	5	11	36	28.33	13	23.47	54	59.23	3	0.55	75	66.27
11	KAPURTHALA	13	11.56	24	2.75	19	33.23	15	9.1	18	20.07	44	1.79	7	6.93	61	2.51	10	0.75	59	0.82	7	0	66	1.34
12	LUDHIANA	6	8.46	16	3.43	11	4.36	101	3.84	22	15.73	335	2.53	41	17.96	333	11.62	40	23.09	295	1.32	100	6.45	199	2
13	MALERKOTLA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2.09	9	2.79	3	0	75	9.92
14	MANSA	43	125.17	72	3.33	60	148.47	75	2.04	70	152.75	79	1.56	49	159.39	84	7.45	71	184.83	91	75.63	47	33.97	123	171.8
15	MOGA	0	0	0	0	0	24.5	2	3.29	2	25.57	15	0.19	4	41.94	31	0.39	18	84.31	30	24.86	10	23.45	36	47.4
16	MUKATSAR	19	236.99	86	9.81	87	144.75	67	38.96	26	171.58	121	11.44	77	209.28	131	98.3	89	224.07	150	150.92	72	52.55	221	237.53
17	NAWANSHAHR	26	131.74	69	0.84	70	136.86	145	2.79	47	98.38	188	4.14	82	67.21	129	10.74	38	51.82	116	40.58	32	19.97	112	52.8
18	Pathankot	2	0.98	10	1.73	0	3.14	32	1.94	69	89.16	74	25.39	47	82.46	75	13.14	16	67.64	163	113.26	33	30.38	257	137.77
19	PATIALA	1	0.2	0	0	0	0.48	4	0.73	5	2.3	4	0	5	8.09	11	0.19	8	1.09	13	23.44	6	0	35	29.83
20	ROPAR	1	6.78	7	0.05	6	17.09	36	11.09	9	55.08	58	7.6	24	56.02	68	24.48	22	25.2	84	58.49	7	3.08	96	49.37
21	SANGRUR	6	19.35	9	0	12	31.85	9	0	12	60.33	8	0.28	12	8.91	30	0.44	12	14.69	94	2.05	24	1.48	109	5.32
22	SAS NAGAR MOHALI	2	2.42	2	0	2	1.85	13	0.23	3	19.87	27	3.62	15	26.42	99	7.64	4	16.17	119	13.63	19	1.72	120	55.34
23	TARN TARAN	6	17.58	20	3.83	10	64.54	42	37.75	35	99.17	48	74.98	28	143.1	28	66.42	17	18.58	130	60.91	9	17.67	122	58.75
	<b>Total</b>	<b>257</b>	<b>830.47</b>	<b>497</b>	<b>89.07</b>	<b>506</b>	<b>912.2</b>	<b>883</b>	<b>169.26</b>	<b>596</b>	<b>1405.2</b>	<b>1625</b>	<b>216.06</b>	<b>736</b>	<b>1423.7</b>	<b>1746</b>	<b>368.13</b>	<b>650</b>	<b>1228.4</b>	<b>2190</b>	<b>970.66</b>	<b>661</b>	<b>331.43</b>	<b>2448</b>	<b>1379.2</b>