

GOVERNMENT OF INDIA
MINISTRY OF JAL SHAKTI

DEPARTMENT OF WATER RESOURCES, RIVER DEVELOPMENT & GANGA REJUVENATION

RAJYA SABHA

UNSTARRED QUESTION NO. 1696

ANSWERED ON 15.12.2025

NAQUIM PROGRAMME IN THE STATE OF KARNATAKA

1696. Dr. DHARMASTHALA VEERENDRA HEGGADE:

Will the Minister of **Jal Shakti** be pleased to state:

- (a) whether the Central Ground Water Board (CGWB) has conducted National Aquifer Mapping and Management (NAQUIM) Programme in Sulya Taluk, Bhalki Taluk, Bidar Taluk and Ankasandra, Tumkur of the State of Karnataka;
- (b) if so, the details thereof indicating the key findings and recommendations made in this regard;
- (c) the steps taken by Government to implement these recommendations including measures to regulate over-extraction of groundwater by industries; and
- (d) the action taken by Government for improved groundwater recharge and management in the State of Karnataka?

ANSWER

THE MINISTER OF STATE FOR JAL SHAKTI

(SHRI RAJ BHUSHAN CHOUDHARY)

(a) & (b) NAQUIM studies have been taken up across the country by the Central Ground Water Board (CGWB) for delineation and characterisation of aquifers and preparation of plans for ground water management. NAQUIM was initiated as a part of the 'Ground Water Management and Regulation' scheme and the entire mappable area of the country of about 25 lakh sq. kms, including about 1,91,719 sq. km in the state of Karnataka has been mapped. Further, aquifer management plans have also been prepared and shared with the State/District administration. The details of key findings and recommendations made under NAQUIM reports for Sulya Taluk, Bhalki Taluk, Bidar Taluk and Ankasandra, Tumkur of Karnataka state has been provided in **Annexure**.

The recommendations primarily include supply side measures for augmenting ground water recharge like construction of check dams, percolation tanks, sub-surface dykes etc. and demand side measures for reducing ground water stress like increasing the area under micro irrigation, diversification to less water intensive crops etc. The recommendations also call for stricter ground water regulation to reduce the draft and participatory ground water management to ensure sustainability.

(c) & (d) 'Water' being a State subject, sustainable development and management of water and groundwater resources is primarily the responsibility of the State Governments. The Central Government, on its part, facilitates the efforts of the State Governments by way of technical and financial assistance through its various schemes and projects. The major steps taken by the government in this direction, for improving ground water conservation and recharge, regulating over-extraction and ensuring long term sustainability of the resource in the country, including the state of Karnataka are provided below:

- i. Efforts of the Central government for augmenting the water/groundwater resources of the country, are mainly channeled through the flagship campaign of Jal Shakti Abhiyan (JSA). JSA is a time

bound and mission mode programme being conducted annually since 2019 by the M/o Jal Shakti, wherein all the efforts and funds under various schemes and projects are converged to deliver water harvesting and artificial recharge works on the ground.

Currently, JSA 2025 is underway in the country with special focus on over-exploited and critical districts. As per the available information, under JSA, completion of around 1.21 crore water conservation and artificial recharge works has been coordinated through convergence in the country in the last 4 years, with 17.07 lakh structures in Karnataka, which has played a key role in enhancing the sustainability of ground water resources.

- ii. To further strengthen the momentum of Jal Shakti Abhiyan, Jal Sanchay Jan Bhagidari (JSJB): A Community-Driven Path to Water Sustainability in India has been launched by the Hon'ble Prime Minister with a vision to make rain water harvesting a mass movement in the country. By promoting community ownership and responsibility, the initiative seeks to develop cost-effective, local solutions tailored to specific water challenges across different regions.
- iii. M/o Jal Shakti has constituted the Central Ground Water Authority (CGWA) for the purpose of regulation and control of ground water extraction in the Country and has notified Guidelines dated 24.09.2020 for the purpose of such regulation, which have pan India applicability. Additionally, stringent measures like imposition of heavy penalties & Environmental Compensation Charges (EC) extraction without valid NOC, prohibiting new large-scale industries in over-exploited areas, sealing of bore wells for illegal extraction etc. have been mandated by the Guidelines to regulate over extraction. However, it is to add that the state of Karnataka is regulating ground water extraction under its own legislative/administrative framework and has enacted the Karnataka Groundwater (Regulation and Control of Development and Management) Act, 2011, for this purpose. As informed by the state government, Karnataka has also constituted District Ground water Committees headed by DCs/DMs for effective implementation the provisions of this Act at the field level.
- iv. M/o Jal Shakti has successfully demonstrated the efficacy of community led participatory ground water management through Atal Bhujal Yojana, which was implemented in 80 water stressed districts in 7 States, including Karnataka. Construction of various rain water harvesting and recharge structures like check dams, ponds, shafts etc. as well as promotion of micro irrigation was taken up under the scheme with an objective to augment the ground water resources and to reduce the strain on them through efficient water management practices.
- v. Mission Amrit Sarovar was launched by the Government of India which aimed at developing and rejuvenating at least 75 water bodies in each district of the country. As an outcome nearly 69,000 Amrit Sarovars have been constructed/rejuvenated in the country, with 4,056 in Karnataka, leading to enhanced water storage and ground water recharge.
- vi. CGWB has also prepared the Master Plan for Artificial Recharge to Groundwater- 2020, for the entire country providing a broad outline for construction of around 1.42 crore rain water harvesting and artificial recharge structures in the country to harness 185 BCM (Billion cubic meter). For Karnataka, the Masterplan recommends 61,225 number of artificial recharge/water harvesting structures in rural areas and around 8.9 lakh roof top rain water harvesting structures in urban areas. The Master Plan has been shared with State Govt. agencies for planning and implementation at appropriate levels.

ANNEXURE REFERRED TO IN REPLY TO PART (a) & (b) OF UNSTARRED QUESTION NO. 1696 TO BE ANSWERED IN RAJYA SABHA ON 15.12.2025 REGARDING “NAQUIM PROGRAMME IN THE STATE OF KARNATAKA”.

Taluk-wise aquifer mapping studies and detailed management plans prepared under NAQUIM

Taluk /Area	Aquifer conditions & status	Chemical Quality & Key issues identified	Principal management recommendations
Sulya taluk (859 sq km)	Two aquifer systems – shallow phreatic Aquifer-I (Laterite & weathered Gneiss) and deeper fractured Aquifer-II (Granitic Gneiss); Stage of groundwater Extraction ~49.66% (Safe).	Electrical Conductivity is generally low, negligible presence of nitrate (0–12 mg/l) and very low fluoride (0–0.94 mg/l), meeting drinking water standards	Supply-side recommendations include 1 sub-surface dyke and 23 percolation tanks. Demand-side measures emphasize drip and sprinkler irrigation. Groundwater development through 205 dug wells and 245 borewells could generate an additional 600 ha of irrigation potential.
Bhalki taluk (1,092 sq km)	Basaltic Deccan Trap with shallow weathered phreatic aquifer over deeper fractured basalt; Stage of development ~70% (Semi-critical).	Excessive dependence on bore wells, particularly for irrigating water-intensive crops like sugarcane; declining water levels in deeper aquifer; nitrate contamination in shallow aquifers and fluoride in excess in deeper aquifers at a few	On the supply side, artificial recharge structures are proposed over a feasible recharge area of about 981 sq. km, including 67 percolation tanks and 2 subsurface dykes. On the demand side, adoption of micro-irrigation practices (drip and sprinkler), particularly for sugarcane, is strongly recommended to enhance water-use efficiency and reduce groundwater draft. Regulatory measures such as stricter groundwater abstraction controls and

		locations	mandatory recharge provisions are advised. Additionally, quality management through reduced nitrogen fertilizer use, improved drainage, rainwater harvesting, and treatment or alternative sources for fluoride-affected areas is emphasized
Bidar taluk (908 sq km)	Two aquifers – laterite/weathered basalt (Aquifer–I) and fractured/vesicular basalt (Aquifer–II); Stage of development ~32.6% (Safe);	Localized long-term water-level decline in deeper aquifers; fluoride contamination occurs in deeper aquifers and nitrate contamination in shallow aquifers, linked to domestic sewage and fertilizer misuse.	Supply side intervention recommends construction of ~684 check dams, 135 percolation tanks and 4 subsurface dykes. Demand side intervention include micro-irrigation. Additional development through 345 dug wells and 829 borewells also recommended.
Ankasandra watershed, Tumkur district (parts of Tiptur & C.N. Halli taluks) (375 sq km)	Hard-rock semi-arid terrain; gneissic/schistose formations with limited primary porosity; groundwater mainly in weathered/fractured zones; Stage of development ~187.6% (over-exploited)	Intensive borewell development; shallow phreatic aquifer largely dewatered; some locations with high iron and elevated radon.	Restrict further groundwater development in over-exploited villages; permit only limited, well-spaced borewells (≥ 200 m spacing) where conditions permit; intensive tank desiltation and regular filling (preferably with canal water) to augment recharge; promote Participatory Groundwater Management (PGWM), crop diversification, water-efficient irrigation and suitable risk-mitigation measures (e.g., crop insurance); continue use of advanced geophysical tools for better aquifer delineation and planning.
