

GOVERNMENT OF INDIA  
MINISTRY OF JAL SHAKTI  
DEPARTMENT OF DRINKING WATER AND SANITATION

**LOK SABHA**

**UNSTARRED QUESTION NO. 2801**

ANSWERED ON – 12.12.2024

**TECHNOLOGICAL INTERVENTIONS FOR GROUNDWATER  
CONTAMINATION UNDER JJM**

2801. SHRI. SHASHANK MANI

Will the Minister of JAL SHAKTI be pleased to state:

- (a) whether the Jal Jeevan Mission (JJM) has encountered challenges related to groundwater contamination in ensuring supply of safe drinking water;
- (b) if so, the details thereof and the steps taken/being taken by the Government to address these challenges;
- (c) whether the Government is leveraging technology such as Internet of Things (IoT) and Geographic Information Systems (GIS) mapping to improve water resource management and monitoring under the JJM; and
- (d) if so, the details thereof?

**ANSWER**

THE MINISTER OF STATE FOR JAL SHAKTI  
(SHRI. V. SOMANNA)

(a) & (b) Yes, the mandate of the Department of Drinking Water & Sanitation is limited to rural drinking water supply. Government of India, in partnership with States, is implementing Jal Jeevan Mission (JJM) since August, 2019 to provide potable tap water supply in adequate quantity, of prescribed quality and on regular & long-term basis to every rural household in the country. Drinking Water being a state subject, the responsibility of planning, approval, implementation, operation, and maintenance of drinking water supply schemes, including those under the Jal Jeevan Mission, lies with State/UT Governments. The Government of India supports the States by providing technical and financial assistance.

Under Jal Jeevan Mission, as per existing guidelines, Bureau of Indian Standards' BIS:10500 standards are adopted as benchmarks for quality of water being supplied through the piped water supply schemes. Under JJM, while planning water supply schemes to provide tap water supply to households, priority is given to quality-affected habitations. While allocating the

funds to States/ UTs in a particular financial year, 10% weightage is given to the population residing in habitations affected by chemical contaminants such as Arsenic, Fluoride, Iron, salinity, Nitrate and Heavy Metals.

Under JJM, it was envisaged that planning, implementation and commissioning of piped water supply scheme based on a safe water source may take time, therefore, purely as an interim measure, States/ UTs have been advised to install community water purification plants (CWPPs) especially in Arsenic and Fluoride affected habitations to provide potable water to every household to meet their drinking and cooking requirements. Since launch of JJM, due to the efforts taken under the mission, the number of reported quality affected habitations have reduced over the years from 57,539 in August, 2019 to 12,080 as on 09/12/2024. Further, provision of safe drinking water for cooking and drinking requirements has been made available in all the remaining 314 Arsenic and 255 Fluoride affected habitations through CWPPs/ IHPs.

A Handbook on Drinking Water Treatment Technologies was released in March 2023 to disseminate information regarding new technologies available amongst all stakeholders to improve the performance and implementation of drinking water treatment plants using technologies that address local issues and challenges faced in water-quality affected villages. The States may take up appropriate water treatment system depending upon techno-economic feasibility.

To enable States/ UTs to test water samples for water quality, and for sample collection, reporting, monitoring and surveillance of drinking water sources, an online JJM – Water Quality Management Information System (WQMIS) portal has been developed. The State-wise details of water quality test reported through WQMIS are available in public domain and can be accessed at:

<https://ejalshakti.gov.in/WQMIS/Main/report>

States/UTs have been advised to carry out testing of water quality on a regular basis and take remedial action wherever necessary, to ensure that the water supplied to households is of prescribed quality.

Government of India launched Jal Shakti Abhiyan (JSA) in 2019, a time bound campaign with a mission mode approach intended to improve water availability including ground water conditions in the water stressed blocks of 256 districts in India. In this regard, teams of officers from Central Government along with technical officers from Ministry of Jal Shakti were deputed to visit water stressed districts and to work in close collaboration with district level officials to undertake suitable interventions. The improved groundwater recharge due to construction of artificial recharge structures and increased water harvesting is likely to significantly contribute towards reducing the contaminants level in the aquifer waters.

Under Atal Mission for Rejuvenation and Urban Transformation (AMRUT) was launched on 25th June, 2015 in selected 500 cities of the country with focus on development of urban infrastructure in various sectors including water supply. State/UTs have the option to take projects on special water supply arrangements for difficult areas, hill and coastal cities, including those having water quality problems.

Under the National Aquifer Mapping Programme (NAQUIM) of CGWB, special attention is being given to the aspect of ground water quality including contamination by toxic substances such as Arsenic in ground water.

CGWB has constructed several exploratory and observation wells in the Country tapping the Arsenic safe deeper aquifer zones delineated through exploration aided detailed aquifer mapping under National Aquifer Mapping programme. Successful wells have been handed over to the State Governments for their purposeful utilization. Further, CGWB is providing technical assistance to the States by sharing the cement sealing technology for tapping contamination free aquifers in Gangetic flood plains.

(c) & (d) Yes, to set up a proper mechanism for continuous measurement and monitoring of these water supply systems to ensure their long-term sustenance. In May 2021, while releasing report of Expert Committee constituted by DDWS for suggesting roadmap for measurement and monitoring of water service delivery, State/ UTs were requested to start installation of IoT sensors in rural water supply infrastructure.

Subsequently, to enable the deployment of such smart water management solutions, DDWS conducted an ICT Grand Challenge program through which 100 pilot IoT solutions were implemented across Country. Additionally, 18 IoT sensors were deployed by JJM-Sector Partners or States/ UTs. To facilitate State/UTs in procurement of IoT solutions, NJJM got the service category launched on the GeM portal. Consequently, the States started to step-in towards the installation of IoT sensors in water supply infrastructure.

Moreover, the functioning of the IoT sensors deployed in the States has been integrated with JJM dashboard i.e. the data monitored by sensors is reflected at JJM dashboard. Details may be seen at:

<https://ejalshakti.gov.in/jjmreport/Iot/IoTMonitoring.aspx>

As far as Geographical Information System (GIS) mapping is concerned, it is stated that as per provisions of the JJM Operational guidelines; to bring transparency and monitoring, States are required to geo-tag all the assets of water supply schemes. Every infrastructure asset either new or otherwise will be geo-tagged including washing and bathing places, greywater collection and treatment plants, source sustainability structures, etc.

As on date, as per data provided by States, around 8.56 Lakhs piped water supply water source, 5.97 Lakhs scheme information board, 3.28 Lakhs storage structures 2.16 Lakhs other water assets have been Geo-tagged. The State-wise details may kindly be seen at:

[https://ejalshakti.gov.in/JJM/JJMReports/BasicInformation/Geo\\_tagging\\_Summary.aspx](https://ejalshakti.gov.in/JJM/JJMReports/BasicInformation/Geo_tagging_Summary.aspx)

Further, this department has also mapped around 4.5 lakh KMs. of bulk village water supply pipeline infrastructure at PM Gatishakti portal through GIS mapping.

\*\*\*\*\*