GOVERNMENT OF INDIA

MINISTRY OF JAL SHAKTI

DEPARTMENT OF WATER RESOURCES, RIVER DEVELOPMENT & GANGA REJUVENATION

LOK SABHA

UNSTARRED QUESTION NO. 1442

ANSWERED ON 13.02.2025

GROUNDWATER QUALITY IN ANDHRA PRADESH

1442. SHRI LAVU SRI KRISHNA DEVARAYALU SHRI G M HARISH BALAYOGI

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

(a) whether the groundwater in Andhra Pradesh contains high levels of fluoride, nitrate, chloride, arsenic, and uranium and also exhibits elevated Electrical Conductivity (EC), Sodium Adsorption Ratio (SAR) and Residual Sodium Carbonate (RSC);

(b) if so, the details thereof indicating water samples exceeding permissible limits for each parameter during the last five years and the current year in Andhra Pradesh, district-wise especially for Palnadu;

(c) the steps taken/being taken by the Government to address these issues, including the measures to mitigate salinity ingress, agricultural runoff and over-exploitation of groundwater;

(d) the funds allocated, released and utilized for improving water quality and groundwater management in Andhra Pradesh during the last five years and the current year; and

(e) whether the Government has conducted any study or assessment on the impact of poor water quality on public health, agriculture and soil degradation in Andhra Pradesh, if so, the details thereof and if not, the reasons therefor?

ANSWER

THE MINISTER OF STATE FOR JAL SHAKTI

(SHRI RAJ BHUSHAN CHOUDHARY**)**

(a) & (b) Central Ground Water Board (CGWB) generates ground water quality data on a regional scale including Andhra Pradesh as part of its ground water quality monitoring program and various scientific studies. Based on the data of Annual Ground Water Quality Report, 2024 of CGWB contaminants like Fluoride, Nitrate, Arsenic etc. have been reported in certain isolated pockets across various States and UTs of the country, including Andhra Pradesh. Summary of various contaminants and other parameters like Electrical Conductivity (EC), Sodium Adsorption Ratio (SAR) and Residual Sodium Carbonate (RSC) for the state of Andhra Pradesh is provided in **Annexure –I**. Further, parameter-wise details of samples exceeding permissible limits for the last five years for the state of Andhra Pradesh and specifically for the district of Palnadu is provided in **Annexure –II**.

(c) Water being a State subject, sustainable development and management of groundwater resources, including the quality aspect is primarily the responsibility of the State Governments. However, the Central Government facilitates the efforts of the State Governments through technical and financial assistance through

its various schemes and projects. In this direction, the important steps taken by the Ministry of Jal Shakti and other central ministries are given below :-

- Data on ground water quality available with CGWB are made available in public domain through reports and also shared with concerned State Governments for taking necessary remedial measures. To further accelerate the dissemination of knowledge on ground water quality, CGWB has initiated the practice of issuing half-yearly ground water quality Bulletins and fortnightly Alerts so that immediate action can be initiated in the reported areas.
- 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 in ground water. CGWB is successfully constructing Arsenic free wells in arsenic affected areas using the innovative cement sealing technology for tapping contamination free aquifers and also providing technical assistance to state departments in construction of Fluoride safe wells. Further, areas of reported ground water issues like salinity ingress, alkalinity etc. are being taken up on priority basis for NAQUIM studies.
- Government of India, in partnership with States, is implementing Jal Jeevan Mission (JJM) since August, 2019 to provide potable tap water supply of prescribed quality and on regular &long term basis to every rural household in the country. Under JJM, while planning water supply schemes to provide tap water supply to house-holds, 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.
- Awareness generation programs/ workshop on various aspects of ground water including preventing ground water pollution and safe use of contaminated water are being conducted by CGWB periodically.
- Since improvement in ground water quality can also be achieved to some degree by taking up artificial recharge activities, Ministry of Jal Shakti and other central ministries are implementing several programmes towards this end, which are expected to improve the underground water table and also help in ameliorating the quality of ground water through dilution effect. Some of such programmes are Jal Shakti Abhiyan, Amrut Sarovar Mission, MNREGS, PMKSY-WDC etc.
- M/o Jal Shakti 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, which is expected to provide contamination free water for irrigation purposes.
- To tackle the salinity problem impacting agricultural productivity, Indian Council of Agricultural Research-Central Soil Salinity Research Institute (ICAR-CSSRI), Karnal has developed sub-surface drainage (SSD) technology for reclamation of waterlogged saline black soils which has been successfully demonstrated and can be adopted by state governments.

- The Government is taking several measures to promote sustainable agriculture in the country with a vision to discourage excessive use of chemical fertilizers and promote organic agricultural practices like implementing Soil Health Management & Soil Health Card Schemes, promoting Natural Farming through BharatiyaPrakritik Krishi Paddhati (BPKP) programme under Paramparagat Krishi Vikas Yojana (PKVY) etc.

(d) For taking up ground water conservation and recharge activities in mission mode, the Government is implementing Jal Shakti Abhiyan (JSA) in the country since 2019, which is an umbrella campaign under which various ground water recharge and conservation related works are being taken up in convergence with various central and state schemes. As per the information available under JSA, more than 4.82 lakh water conservation and rain water harvesting structures have been constructed/restored in Andhra Pradesh since 2021 and the total expenditure incurred through convergence is Rs. 9,292 Cr.

Further, the Government is implementing Jal Jeevan Mission with the ultimate objective of providing safe drinking water to every household of the country, which is expected to play a major role in mitigating the adverse effects of ground water contamination through measures like regular testing to identify affected sources, tapping contamination free safe aquifers and switching over to alternative sources like surface water wherever feasible. As per the information available on the JJM dashboard, it is seen that from 2019-20 to 2024-25 (up to February 2025) funds to the tune of Rs. 6,045.04 cr (both central & state share) were released and an amount of Rs. 4,209.84 cr was spent towards providing safe drinking water to around 70 lakh rural households in Andhra Pradesh.

(e) Consumption of contaminated ground water is known to cause several adverse health effects like Arsenicosis, Fluorosis, neurological disorders, renal malfunctioning, developmental issues in children etc. In agricultural sector, the problems of salinity and alkalinity may affect soil quality, fertility and development of crop.

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ANNEXURE-I

ANNEXURE REFERRED TO IN REPLY TO PART (a) & (b) OF UNSTARRED QUESTION NO. 1442 TO BE ANSWERED IN LOK SABHA ON 13.02.2025 REGARDING "GROUNDWATER QUALITY IN ANDHRA PRADESH".

Summary of the number and percentage of samples (Year 2023) exceeding limits for Fluoride, Nitrate, EC and Chloride for Andhra Pradesh

Sl No	No of Samples Collected	No of samples exceeding Permissible limit for mentioned parameters				
		F (> 1.5mg/L)	Nitrate (> 45 mg/L)	EC (> 3000 µS/cm)	Chloride (> 1000 mg/L)	U &As
1	1149	130 (11.3%)	270 (23.4%)	112 (9.7%)	40 (3.4%)	Samples Not Collected for trace element analysis.

Sodium Adsorption Ratio (SAR) for Andhra Pradesh

(Total Samples: 1149)		
SAR	**No.**	**Percentage**
Low Sodium (SAR<10)	1063	92.6
Medium Sodium (SAR 10-18)	60	5.2
High Sodium (SAR 18-26)	15	1.3
Very High Sodium (SAR>26)	11	0.9

Residual Sodium Carbonate (RSC) in 2023 Andhra Pradesh

(Total Samples: 1149)		
Residual Sodium Carbonate	**No.**	**Percentage**
Very Safe (RSC<1.25)	758	66.0
Marginally Safe (1.25-2.5)	174	15.2
Unsuitable (>2.5)	217	18.8

ANNEXURE-II

ANNEXURE REFERRED TO IN REPLY TO PART (a) & (b) OF UNSTARRED QUESTION NO. 1442 TO BE ANSWERED IN LOK SABHA ON 13.02.2025 REGARDING "GROUNDWATER QUALITY IN ANDHRA PRADESH".

Summary of the water samples exceeding permissible limit for each parameter during the last five years in Andhra Pradesh and particularly in Palnadu District

S No	Year	State/ District	No.of Samples Collected	% of Samples showing Fluoride (>1.5mg/L)	% of Samples showing Nitrate (>45mg/L)	% of Samples showing EC (>3000 µS/cm)	% of Samples showing Chloride (>1000 mg/L)	No. of Samples Collected (for trace element analysis) **	% of Samples showing As (>0.01mg/L)	% of Samples showing U (>0.03mg/L)
1	2023	Andhra Pradesh	1149	11.3	23.5	9.7	3.5			
2		Palnadu	70	27.1	51.4	22.9	5.7			
3	2022	Andhra Pradesh	940	10.3	31.4	10.3	3.2			
4		Palnadu	55	18.2	43.6	18.2	1.8			
5	2021*	Andhra Pradesh	55	5.5	30.9	1.8	0.0			
6		Palnadu	Not Available							
7	2019	Andhra Pradesh	593	8.3	32.7	14.7	4.9	588	3.9	4.9
8		Palnadu	37	13.5	56.8	40.5	2.7	37	4	0

* Samples were not collected in 2020 due to Covid-19
** Samples for heavy trace elements analysis not collected from 2021-23

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