GOVERNMENT OF INDIA
MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE

RAJYA SABHA
UNSTARRED QUESTION NO.696
ANSWERED ON 08.02.2024

Toxic elements in ground water

696 SHRI PARIMAL NATHWANI:

Will the MINISTER OF ENVIRONMENT, FOREST AND CLIMATE CHAnge be pleased to state:

(a) whether National Green Tribunal (NGT) issued notices to about 24 States and UTs for the toxicities found in ground water, if so, the details thereof;
(b) details of districts in Gujarat, Andhra Pradesh and Jharkhand where toxic elements were found in ground water of respective districts;
(c) the measures taken for the people in the respective areas so that there is no adverse effects of arsenic/fluoride contents on the health of people; and
(d) details of any advisory issued from Centre to the respective States/UTs?

ANSWER

MINISTER OF STATE IN THE MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE (SHRI ASHWINI KUMAR CHOUBEY)

(a) & (b) Hon'ble National Green Tribunal (Principal Bench), Delhi vide order dated 20.12.2023 issued notice to 28 States/UTs in Original Application No. 728/2023 by exercising *suo moto* jurisdiction based on the News item appeared in Hindustan dated 30.11.2023 titled "Arsenic found in groundwater in 25 States, fluoride in 27 States: Govt**."**

Central Pollution Control Board (CPCB) under National Water Quality Monitoring Programme (NWMP) presently monitors water quality of ground water at 1233 locations in the Country. State-wise distribution of monitoring locations: Andhra Pradesh (33), Assam (67), Bihar (70), Chandigarh (7), Chhattisgarh (8), Daman and Diu (12), Delhi (45), Goa (9), Gujarat (88), Haryana (29), Himachal Pradesh (55), Jammu & Kashmir (23), Jharkhand (3), Karnataka (2), Kerala (35), Lakshadweep (42), Madhya Pradesh (54), Maharashtra (50), Manipur (10), Meghalaya (13), Mizoram (26), Nagaland (10), Odisha (90), Puducherry (22), Punjab (46), Rajasthan (131), Tamil Nadu (22), Telangana (48), Tripura (57), Uttar Pradesh (39), Uttarakhand (19) and West Bengal (68).

State-wise assessment of Arsenic and Fluoride monitored in ground water locations covered under NWMP during the year 2023 with respect to prescribed BIS Drinking Water Standards IS 10500: 2012 (Acceptable limit), is annexed at **Annexure I.**

As per the information received from Ministry of Jal Shakti, States wise details of partly affected districts with sSelected contaminants in States of Gujarat, Andhra Pradesh and Jharkhand is presented at **Annexure-II**

(c) & (d) Water being a State subject, the aspects related to water resources including its quality are studied, planned, funded and executed by the State Governments themselves as per their own resources and priorities. Role of Government of India is limited to being catalytic, providing technical support and, in some cases partial financial assistance in terms with the existing schemes implemented by the Department of Water Resources, River Development and Ganga Rejuvenation. However, some of the important measures taken by Central Government are –

- Under National Aquifer Mapping (NAQUIM) a flagship programme in 2012 under the scheme of Ground Water Management and Regulation, entire Country covering about 25 lakh square km has been covered. The Aquifer Mapping is aimed to delineate aquifer disposition and their characterization for preparation of aquifer/area specific ground water management plans to address the any of the ground water related issues including water level depletion, over extraction, ground water quality etc. These management plans comprising of demand side and supply side interventions have been shared with the State Government and District Administration for taking appropriate measures.

- Under the National Aquifer Mapping Programme (NAQUIM) of Central Ground Water Board (CGWB), special attention is given to the aspect of ground water quality including contamination by toxic substances such as Arsenic in ground water. CGWB has developed the innovative cement sealing technique through in-house research. In addition, the innovative cement sealing technique of CGWB has been shared with the state agencies to utilize to construct arsenic free wells.

- CGWB generates ground water quality data of the country on a regional scale as part of its ground water quality monitoring program and various scientific studies. CGWB shares these data on ground water quality to the respective State Government for making policy and implementation.
- CGWB is doing ground water exploration in the country since its establishment and has constructed large number of borewells and tubewells in all states, irrespective of the hydrogeological conditions. The water samples from each of these wells undergo chemical analysis and successful wells free from any contaminants were handed over to state ground water departments for their use for community drinking water supply.

- Awareness generation programs/ workshop on various aspects of ground water including preventing ground water pollution and safe use of contaminated water are conducted by CGWB periodically.

- Based on the findings of the studies and experience of ground water exploration, CGWB has developed certain methods for constructing fluoride free wells by employing suitable designing of wells. Such techniques of construction of contaminant free bore wells/ tube wells are shared with the state ground water departments to use them in similar terrains.

Further, Steps taken by CPCB to redress the problem of ground water contamination including Arsenic and Fluoride are detailed below:

- Notified Industry Specific Discharge Standards and General Standards are enforced by the State Pollution Control Boards (SPCBs) and Pollution Control Committees (PCCs) through consent mechanism in respective State/ UT.
- The consent mechanism implemented by SPCBs/PCCs for control of pollution is reviewed from time to time. Location specific and industry specific issues are addressed through interaction with SPCBs/PCCs regularly.
- Enforcement of water conservation & Stringent norms especially Zero liquid discharge for a certain group of industries have been implemented to regulate highly concentrated waste. The specific groups

of industries which are unable to treat the waste water to notified norms have been directed to implement zero liquid discharge.

- Prepared & issued Guidelines for utilisation of treated effluent in irrigation.

Also, based on the assessment of ground water quality for the year 2020, wherever concentration of Fluoride, Arsenic and other Heavy Metals were found exceeding BIS Drinking Water Standards IS 10500:2012, concerned States/ UTs were requested to direct concerned State Departments vide CPCB letter dated 17.03.2022 to take actions such as:

(i) Sealing of hand pumps/ wells having contaminated ground water
(ii) Display sign board indicating (Not Fit for Drinking Water purposes) in vernacular language.
(iii) Arrangement of alternate drinking water supply in the affected areas.

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Annexure-I

State wise Compliance status of Ground Water under NWMP during 2023

Sl. No.	State Name	No. of Monitoring locations	No. of locations monitored during 2023	Fluoride			Arsenic		
				Data available	Complying	Non Complying	Data available	Complying	Non Complying
BIS Drinking Water Specifications IS:10500 : 2012. (Acceptable Limit)					**1 mg/L**			**0.01 mg/L**	
1	**Andhra Pradesh**	**33**	**33**	**33**	**25**	**8**	**33**	**32**	**1**
2	Assam	67	67	67	67	0	76	66	10
3	Bihar	70	70	70	68	2	-	-	-
4	Chandigarh	7	6	6	6	2	6	6	0
5	Goa	9	1	1	1	0	-	-	-
6	**Gujarat**	**88**	**73**	**73**	**52**	**21**	**54**	**54**	**0**
7	Haryana	29	9	5	5	0	-	-	-
8	Himachal Pradesh	55	39	39	39	0	-	-	-
9	Karnataka	2	1	1	1	0	-	-	-
10	Kerala	35	35	35	35	0	35	31	4
11	Madhya Pradesh	54	39	29	29	0	21	21	0
12	Maharashtra	50	42	41	38	3	28	28	0
13	Meghalaya	13	13	13	12	1	13	13	0
14	Nagaland	10	10	10	10	0	10	10	0
15	Odisha	90	88	87	81	6	-	-	-
16	Puducherry	22	22	1	1	0	22	22	0
17	Punjab	46	37	37	37	0	37	37	0
18	Rajasthan	131	122	122	76	46	-	-	-
19	Tamil Nadu	22	21	20	19	1	11	11	0
20	Telangana	48	35	35	29	6	23	23	0
21	Tripura	57	56	56	56	0	-	-	-
22	Uttar Pradesh	39	31	24	22	2	16	16	0
23	Uttarakhand	19	19	19	19	0	18	18	0
24	West Bengal	68	67	67	62	5	67	55	12
25	Chhattisgarh	8	**Data not available for Fluoride & Arsenic Parameters**						
26	Delhi	45							
27	Daman Diu & Dadara Nagar Haveli	12							
28	Jammu & Kashmir	23							
29	**Jharkhand**	**3**							
30	Lakshadweep	42							
31	Manipur	10							
32	Mizoram	26							
Total		**1233**	**936**	**891**	**790**	**103**	**470**	**443**	**27**

Annexure-II

States Wise Details of Partly Affected Districts with Selected Contaminants in States of Andhra Pradesh, Gujarat and Jharkhand

S. No.	State/UT	Salinity (EC above 3000 micro mhos/ cm) (EC : Electrical Conductivity)	Fluoride (above 1.5 mg/l)	Nitrate (above 45 mg/l)	Arsenic (above 0.01 mg/l)	Iron (above 1mg/l)	Heavy metals: Lead (above 0.01 mg/l) Cadmium (above 0.003 mg/l) Chromium (above 0.05 mg/l)
1	Andhra Pradesh	Anakapalli, Ananthapur, Annamayya, Bapatla, Chittor, East-Godavari, Eluru, Guntur, Kakinada, Kona Seema, Krishna, Kurnool, NTR District, Palnadu, Prakasam, SPS Nellore, Sri Satyasai, Sri Balaji, Srikakulam, Visakhapatnam, Vizianagaram, West-Godavari, YSR Kadapa,	Alluri Sitharama Raju, Ananthapur, Annamayya, Bapatla, Chittoor, Guntur, Krishna, Kurnool, NTR District, Palnadu, Prakasam, Sirkakulam, SPS Nellore, Sri Balaji Dist, Sri Satyasai District, Visakhapatnam, Vizianagaram, West-Godavari , YSR Kadapa,	Alluri Sitharama Raju, Anakapalli, Ananthapur, Annamayya, Bapatla, Chittoor, East-Godavari, Eluru, Guntur, Kakinada, Kona Seema, Krishna, Kurnool, Manyam, Nandyal, NTR District, Palnadu, Prakasam, SPS Nellore, Sri Balaji Dist, Sri Satyasai District, Srikakulam, Visakhapatnam, Vizianagaram, West-Godavari, YSR Kadapa,	Ananthpur, East Godawari, Krishna, Prakasham, Guntur, Kurnool, Nellore	Vishakhapatnam, Krishna, Guntur, Nellore, Kurnool, Chittoor, Cuddapah, Prakasham, Ananthpur, East Godawari, Vizianagaram West-Godavari,	Lead-Kadappa,Vishakapatnam Cr-Kadappa
2.	Gujarat	Ahmedabad, Amreli, Anand, Aravalli, Banaskantha, Bharuch, Bhavnagar, Botad, Chota Udaipur, Dev Bhumi Dwarka, Dahod, Jamnagar, Junagadh,	Ahmedabad, Amreli, Anand, Aravalli, Banaskantha, Bharuch, Bhavnagar, Chota Udaipur, Dahod, Gandhinagar, Jamnagar, Junagadh,	Ahmedabad, Amreli, Anand, Aravalli, Banaskantha, Bharuch, Bhavnagar, Chota Udaipur, Dahod, Jamnagar, Junagadh, Kachchh,	Amreli, Anand, Bharuch, Bhavnagar, Dahod, Gandhinagar, Kachchh, Mehesana, Patan,	Ahmedabad, Banaskantha, Bhavnagar, Kachchh, Mehesana, Narmada, Amreli, Anand, Bharauch,	Lead: Ahmedabad Cadmium : Nil Chromium : Nil

S. No.	State/UT	Salinity (EC above 3000 micro mhos/ cm) (EC : Electrical Conductivity)	Fluoride (above 1.5 mg/l)	Nitrate (above 45 mg/l)	Arsenic (above 0.01 mg/l)	Iron (above 1mg/l)	Heavy metals: Lead (above 0.01 mg/l) Cadmium (above 0.003 mg/l) Chromium (above 0.05 mg/l)
		Kachchh, Kheda, Mahesana, Navsari, Patan, Porbandar, Rajkot, Sabarkantha, Surat, Surendranagar, Vadodara, Narmada, Morvi, Gir Somnath, Valsad	Kachchh, Kheda, Mehesana, Panchmahals, Patan, Porbandar, Rajkot, Sabarkantha, Surendranagar, Vadodara, Navsari, Surat, Valsad, Botad, Morvi, Dev Bhumi Dwarka, Gir Somnath, Mahisagar,	Kheda, Mehesana, Narmada, Navsari, Panchmahals, Patan, Porbandar, Rajkot, Sabarkantha, Surat, Surendranagar, Vadodara, Gandhinagar, The Dangs, Valsad, Mahisagar, Gir Somnath, Morvi, Botad, Devbhumi Dwarka	Rajkot, Surendranagar, Vadodara	Valsad, Navsari, Junagarh, Mahisagar, Panchmahal	
3	Jharkhand		Bokaro, Chatra, Deoghar, Dhanbad, Garhwa, Giridih, Godda, Gumla, Jamtara, Koderma, Pakur, Palamu, Ramgarh, Ranchi, Sahebganj, Khunti Latehar	Bokaro, Chatra, Deoghar, Dhanbad, Dumka, Garhwa, Giridih, Godda, Gumla, Hazaribag, Jamtara, Khunti, Koderma, Latehar, Lohardaga, Pakur, Palamu, Paschimi Singhbhum, Purbi Singhbhum, Ramgarh, Ranchi, Sahibganj, Saraikela-Kharsawan,	Sahebganj, Lohardaga, Godda, Dhanbad	Bokaro,Barwadih Chatra, Deoghar, Dhanbad, Dumka, East Singhbhum, Giridih, Godda, Gumla, Hazaribag, Jamtara, Khunti, Koderma, Latehar, Lohardaga, Pakur, Ramgarh, Palamu Ranchi, Sahebganj, Simdega, West Singhbhum,	**Lead:** Jamshedpur Bokaro, Chatra(Pb), Deoghar, Dhanbad, Dumka, PurbiSinghbhum, Garhwa, Giridih, Godda, Gumla, Hazaribag, Jamtara, Khunti, Ramgarh, Latehar, Koderma, Lohardaga, Pakur, Palamu, , Ranchi, Sahebganj, Saraikela-Kharsawan, Simdega, W. Singhbhum