

Contamination of Groundwater Due to Arsenic and Fluoride

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In News: Central Ground Water Board (CGWB) generates ground water quality data indicating the occurrence of Fluoride, Arsenic, Nitrate, Iron and Heavy Metals beyond the BIS permissible limits for human consumption in isolated pockets in various parts of the country including Rajasthan and Maharashtra.

Contamination of Ground Water Due to Arsenic and Fluoride

Arsenic

- India had 1,800 arsenic-affected habitations in 2015. This increased to 4,421 habitations as of September 2020.
- Most of the arsenic-affected habitations lie in the Ganga and Brahmaputra alluvial plains. i.e in Assam, Bihar, West Bengal, Punjab, and Uttar Pradesh (UP).
- Assam had the highest share of such habitations (1,853), followed by West Bengal (1,383).
- Jharkhand, which did not have any such habitation in 2015, has two now (2020).
- Karnataka which had nine habitations in 2015, had none in 2020.

Fluoride

- The number of fluoride affected habitations has significantly come down from 12,727 in 2015 to 5,485 as of September 2020.
- Rajasthan had the highest number of such habitations (2,956), followed by Bihar (861).

Diseases Associated With Arsenic and Fluoride

Arsenic

- It is highly toxic in its inorganic form.
- Contaminated water used for drinking, food preparation and irrigation of food crops ‘
- Long-term exposure to arsenic from drinking-water and food can cause cancer, skin disease, cardiovascular disease and diabetes.
- In early childhood exposure, impacts on cognitive development and increased deaths in young adults.

Fluoride

- Excessive fluoride intake usually occurs through the consumption of groundwater naturally rich in fluoride, or used in food preparation or irrigation of crops.
- lead to dental fluorosis (tooth decay) or crippling skeletal fluorosis, which is associated with bone deformities.

Government Measures to Curb Contamination of Groundwater

- Water State subject, initiatives on water management including taking corrective action related to ground water quality in the country is primarily States’ responsibility.
- Central Pollution Control Board (CPCB) in association with State Pollution Control Boards/Pollution Control Committees (SPCBs/PCCs) is implementing the provisions of The Water (Prevention & Control) Act, 1974 & The Environment (Protection) Act, 1986 to prevent and control pollution.
- The Government of India in partnership with States, is implementing Jal Jeevan Mission (JJM) to provide potable tap water supply to every rural household in the country, by 2024.
- 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 including Arsenic and Fluoride, as on 31st March of the preceding financial year.

- Atal Mission for Rejuvenation and Urban Transformation (AMRUT) launched on 25th June, 2015 in selected 500 cities with focus on development of urban infrastructure in various sectors including water supply, States/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 with Arsenic, Fluoride etc.
- According to the WHO's guidelines for drinking water quality (2011), the permissible limit of Arsenic in groundwater is 0.01 mg per litre. However, in India the permissible limit in drinking water has recently been revised from 0.05 mg per litre to 0.01 mg per litre.