Eco-Friendly Solution for Safe Groundwater

Source: TH

Recently, researchers at the **Indian Institute of Science (IISc)** have created an **innovative remediation technique** that not only **eliminates heavy metal pollutants** from groundwater but also ensures **safe disposal of removed pollutants** as well.

- It removes **Arsenic** and other harmful metals, making the water safe to drink.
- The process is **eco-friendly** as removed contaminants are **disposed of in an environmentally friendly** and sustainable manner
- **3-Step Working Mechanism:**
  - **Capture:** Contaminated water is passed through a **chitosan-based adsorbent that removes toxic inorganic arsenic.** The adsorbent is regenerated using a recycled alkaline wash.
  - **Concentrate:** The **arsenic-laden alkaline wash is separated** using membranes, recovering sodium hydroxide for reuse, while the concentrated arsenic moves to the next step.
  - **Transform: Microbes in cow dung convert inorganic arsenic** to less toxic organic forms. The treated sludge can then be safely disposed of.
- In India, **113 districts** in 21 States in India have **arsenic levels above 0.01 mg per litre** while **223 districts** in 23 States have **fluoride levels above 1.5 mg per litre**, which are beyond the permissible limits set by the **Bureau of Indian Standards (BIS)** and the **World Health Organization (WHO)**.

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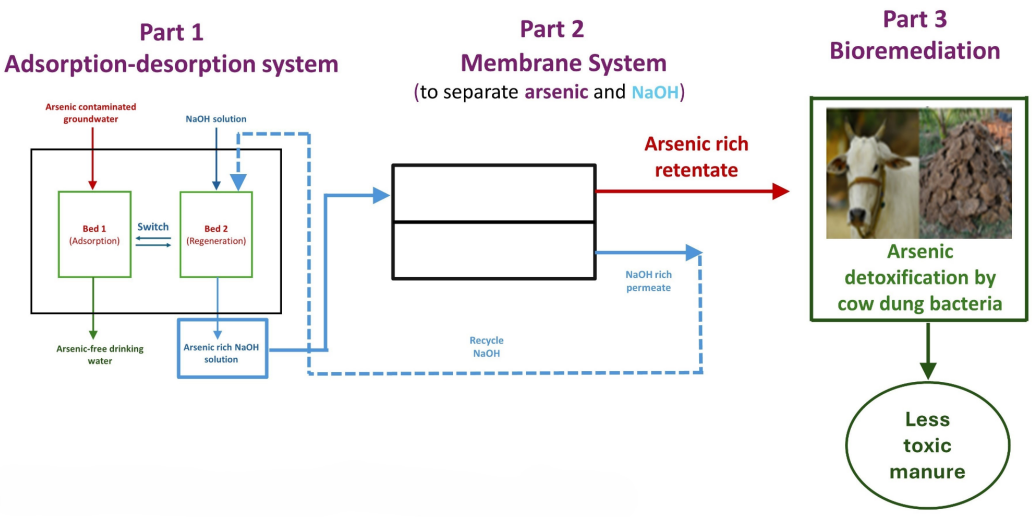

Read more: Groundwater Contamination in India, Purification Processes of Water.