Mains Practice Question

Q. Discuss the various challenges related to waste-water Management in India. Highlight the recent government initiatives to resolve waste-water management. (250 words)

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Approach

- Start you answer by briefly stating present status of waste-water management in India.
- Discuss various challenges related to waste-water management.
- Discuss government initiatives to tackle waste-water management.
- Conclude with providing a way forward.

Introduction

- As per Central Pollution Control Board (CPCB) in 2021, India's current water treatment capacity is 27.3% and the sewage treatment capacity is 18.6%.

Body

- **Challenges related to waste-water management:**
  - **Lack of proper governance: Schedule 7** of the Indian constitution identifies **water as a state matter,** but it is **explicitly subjected to the provisions mentioned in the Union List.**
    - It enables the **Parliament to legislate on regulating and developing inter-state waters in the larger public interest** while the **State retains the autonomy to frame laws regarding the use of water within the State** on matters like water supply, irrigation, drainage and embankments, water storage, etc.
    - This disintegrated approach to wastewater and its fallouts can also be seen within the States. The governance of water resources is **further fragmented at local levels, rural and urban, as per the 73rd and 74th constitutional amendment acts.**
    - These constitutional mechanisms have resulted in power imbalances between the Centre and the States, creating **federal jurisdictional ambiguity**.
      - Particularly, in the case of wastewater management, **one State's inaction affects the interests of one or more other States and causes disputes.**
    - **Expensive wastewater treatment**: Due to lack of low cost, sustainable, disruptive water management solutions, more than 70% of sewage in India is discharged untreated, polluting rivers, coastal areas and wells pouting three-fourths of the country's water bodies.
    - **Untreated waste water in agriculture:** According to a recent study globally 65% of all irrigated areas within 40 km downstream of urban centres (35.9 million hectares) worldwide are affected by untreated wastewater. This puts 885 million global consumers, food vendors, and farmers at serious health risk. 86% of these irrigated croplands were located in five countries: China, India, Pakistan, Mexico,

and Iran.

- **Government initiatives to tackle waste-water management:**
    - The Indian government shifted its focus to **solid waste, sludge and greywater management** under the **Swachh Bharat Mission 2.0 (SBM 2.0).**
        - Following a sustained focus on achieving **Open Defecation-Free (ODF) status,** the **Ministry of Housing and Urban Affairs (MoHUA)** developed detailed criteria for cities to achieve **ODF+, ODF++ and Water+ statuses.**
    - Under **Atal Mission for Rejuvenation and Urban Transformation (AMRUT) Mission,** sewerage & septage management projects were launched by MoHUA.

Conclusion

- Although a **decentralised approach is needed for better assessment and redressal of wastewater issues,** but for the efficient functioning of policies and overall development of water bodies, water governance needs to be recognized at all levels.
    - In this regard, wastewater must be seen not only as an environmental pollution issue but as a water sector matter **to be addressed coherently by all central, state, and local governments.**
- It is imperative to complement centralised treatment plants with cheaper alternative solutions such as:
    - **Decentralised wastewater treatment plants** can be set up in small townships, urban and rural clusters, gated colonies, factories, and industrial parks. They can be installed directly on-site, thus treating the wastewater directly at its source.
    - **Bioremediation** utilises microbes such as fungi and bacteria in order to **break down pollutants and hazardous effluents.**
    - **Phytoremediation** refers to the **use of plants and associated soil microbes to reduce the concentrations or toxic effects of contaminants** and has been proven quite effective at cleaning lakes and ponds throughout the country.