



## Rejuvenating Small Water Bodies

This editorial is based on “[Rejuvenate small water bodies](#)” which was published in the Hindu on 22/03/2023. It discusses the issues Small Water Bodies facing and ways to address it.

**For Prelims:** Small Water Bodies, Water and Related Statistics (2021), Central Water Commission, Eutrophication, Urbanization, Deforestation, Corporate Social Responsibility

**For Mains:** Challenges in Rejuvenating Small Water Bodies, Water Resources, Conservation of Resources

According to the [United Nations](#), in the early to mid-2010s, **1.9 billion people of the global population lived in severely water-scarce areas**. But this number will increase to 2.7- 3.2 billion people by 2050.

The [Water and Related Statistics \(2021\)](#) published by the [Central Water Commission \(CWC\)](#) of India, mentions that **one out of three people will live in a water-stressed area by 2025**.

But unfortunately, the **small water bodies (tanks and others) which have been supporting the agriculture** and domestic requirement of water for many years in India are fast vanishing now. **So, there is an urgent need to augment the water supply** wherever possible to avert the looming water crisis.

### What are the Benefits Derived from Small Water Bodies?

- **Easy Access to Water:**
  - SWBs can **provide easy access to water for domestic needs, animal husbandry, drinking water and agriculture** particularly in rural areas. This can **help improve water security and reduce the burden of water collection for households**.
  - SWBs are located in every village, reducing the distance women have to walk to fetch water for their drinking needs.
- **Low Maintenance Cost:**
  - Compared to large dams and reservoirs, SWBs are relatively low-cost to construct and maintain. This makes them an attractive option for small-scale water storage and management.
- **Helpful for Farmers:**
  - SWBs can be **used for irrigation and aquaculture**, providing a reliable source of water for farming activities. This can **help increase crop yields and support livelihoods for farmers**.
  - **Effective distribution of water without conflicts helps reduce poverty** among small and marginal farmers.
- **Helps in Groundwater Recharge:**
  - SWBs can also **help recharge groundwater resources, particularly in areas where groundwater depletion is a concern**. By capturing and storing rainwater, SWBs can

help replenish groundwater aquifers and improve overall water availability.

- **Biodiversity:**
  - Small water bodies **support a diverse range of plant and animal species**, including many rare and endangered species. They **provide important habitat and breeding grounds for aquatic and semi-aquatic organisms**, such as fish, amphibians, reptiles, and birds.
- **Water Quality:**
  - Small water bodies **can help to improve water quality by acting as natural filters, removing pollutants and sediment from runoff water** before it enters larger bodies of water. They can also help to recharge groundwater and maintain water levels during droughts.
- **Flood Control:**
  - Small water bodies **can help to reduce the risk of flooding by capturing and storing excess water** during heavy rain events, and slowly releasing it over time.

## What are the Issues Facing the Small Water Bodies today?

- **Continuous Encroachment on Catchment Areas:**
  - Small water bodies such as **lakes, ponds, and streams are under constant threat due to encroachment on their catchment areas.**
  - As **urbanization expands, people are building houses, commercial buildings, and other infrastructure** in and around the catchment areas of these water bodies.
  - This can **lead to the destruction of natural vegetation**, soil erosion, and pollution of the water body itself.
    - The **urban agglomeration witnessed from the 1990s has severely impacted SWBs**, turning many of them into dumping grounds.
    - The Standing Committee on Water Resources (2012-13) underlined in its 16th report that **most of the water bodies in the country were encroached upon by State agencies themselves.**
    - According to the **Standing Committee on Water Resources (2012-13)**, about **one million hectares of irrigation potential was lost due to encroachment** and other reasons.
- **Lack of Annual Maintenance:**
  - Small water bodies **require regular maintenance to keep them healthy and functional.** However, due to limited resources, **these bodies are often neglected and left to deteriorate.**
  - The **lack of maintenance can result in a build-up of sediment, debris, and pollutants**, leading to poor water quality and even the complete drying up of the water body.
- **Pollution:**
  - **Small water bodies are often exposed to pollution** from various sources, such as agricultural runoff, sewage, industrial waste, and urban development.
  - Pollution can lead to a **range of ecological problems, including [eutrophication](#)**, algal blooms, and fish kills.
- **Habitat Loss:**
  - Small water bodies are **often threatened by habitat loss and fragmentation due to land use changes**, such as **[urbanization](#), [deforestation](#)**, and agricultural intensification. This can **lead to declines in biodiversity** and ecological functioning.
- **Invasive Species:**
  - Small water bodies can be **vulnerable to invasion by non-native species, which can outcompete native species** and disrupt ecological processes.
  - Invasive species can also lead to declines in water quality and habitat quality.
- **Climate Change:**
  - Small water bodies are also **affected by [climate change](#), which can lead to changes in water availability**, temperature, and quality. Climate change can also exacerbate the impacts of other stressors, such as pollution and habitat loss.
- **Overuse and Exploitation:**
  - Small water bodies can be **overused and exploited for a variety of purposes, such as irrigation, drinking water, recreation, and fisheries.**

- **Overuse can lead to depletion of water resources**, degradation of water quality, and declines in biodiversity.

## What Should be the Way Forward?

- **Strong Legislation is Needed:**
  - Considering the ever-increasing encroachments, **strong legislation should urgently be enacted to make encroachment on water bodies a cognisable offence.**
    - In 2014, the **Madras High Court ruled that no approval should be granted for building plans or layouts on lands** situated along SWBs (Streams, Water Bodies, and Wetlands).
- **Creating a Separate Ministry for Small Water Bodies:**
  - Understanding the dying state of SWBs, a **separate Ministry for Small Water Bodies should be created with adequate funding** to conduct periodic repair and rehabilitation works.
  - Without the participation of farmers who are the main beneficiaries of SWBs, it is **difficult to improve the performance of these age-old oases.**
- **Setting up a Tank Users Organisation:**
  - **Farmers must voluntarily come forward to set up a tank users' organisation and undertake the repairing of SWBs**, as followed earlier under the age-old Kudimaramathu system.
  - Since corporates are increasingly using water for various purposes, **they should be asked to repair and renovate SWBs under the ambit of [Corporate Social Responsibility](#).**
- **Avoid Contamination:**
  - Small water bodies are **vulnerable to pollution from runoff from agricultural fields, industrial activities, and residential areas.**
  - To protect them, **it is important to avoid the contamination of water bodies** by preventing the discharge of harmful chemicals and wastes into them.
- **Preserving the Surrounding Land:**
  - The **health of small water bodies is closely linked to the health of the surrounding land.** Protecting the surrounding land from development, deforestation, and other activities that lead to soil erosion can help prevent sedimentation and nutrient pollution in the water.
- **Control Invasive Species:**
  - Invasive species such as non-native plants and animals can disrupt the ecological balance of small water bodies. **Control measures should be implemented to prevent their introduction and spread.**
- **Raising Awareness:**
  - Raising public awareness about the **importance of small water bodies can help to generate support for their protection.** This can include activities such as organizing community events, distributing educational materials, and engaging with local stakeholders.

### **Drishti Mains Question**

What are the major challenges facing small water bodies and what steps need to be taken to address the issue?

## UPSC Civil Services Examination Previous Year Question (PYQ)

### **Prelims**

**Q.1. Which one of the following ancient towns is well known for its elaborate system of water harvesting and management by building a series of dams and channelizing water into connected reservoirs? (2021)**

- (a) Dholavira
- (b) Kalibangan
- (c) Rakhigarhi
- (d) Ropar

**Ans: (a)**

- The city of Dholavira was located on Khadir Beyt in the Rann of Kutch, where there was fresh water and fertile soil. Unlike some of the other Harappan cities, which were divided into two parts, Dholavira was divided into three parts, and each part was surrounded with massive stone walls, with entrances through gateways.
- There was also a large open area in the settlement, where public ceremonies could be held. Other finds include large letters of the Harappan script that were carved out of white stone and perhaps inlaid in wood.
- This is a unique find as generally Harappan writing has been found on small objects such as seals.
- Being the 6<sup>th</sup> largest of more than 1,000 Harappan sites discovered so far, and occupied for over 1,500 years, Dholavira not only witnesses the entire trajectory of the rise and fall of this early civilization of humankind, but also demonstrates its multifaceted achievements in terms of urban planning, construction techniques, water management, social governance and development, art, manufacturing, trading, and belief system.
- With extremely rich artefacts, the well-preserved urban settlement of Dholavira depicts a vivid picture of a regional centre with its distinct characteristics, that also contributes significantly to the existing knowledge of Harappan Civilization as a whole.
- **Therefore, option (a) is the correct answer.**

**Q.2. With reference to 'Water Credit', consider the following statements: (2021)**

1. It puts microfinance tools to work in the water and sanitation sector.
2. It is a global initiative launched under the aegis of the World Health Organization and the World Bank.
3. It aims to enable the poor people to meet their water needs without depending on subsidies.

**Which of the statements given above are correct?**

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

**Ans: (c)**

- WaterCredit is a program that addresses one of the major barriers to safe water and sanitation i.e. affordable financing. WaterCredit helps bring small loans (microfinance) to those who need (poor people) access to affordable financing and expert resources to make household water and toilet solutions a reality. WaterCredit is the first to put microfinance tools to work in the water and sanitation sector. **Hence, statement 1 is correct.**
- The model empowers people to address their own water and sanitation needs in developing countries who often lack access to traditional credit markets. It eliminates the need for subsidies. **Hence, statement 3 is correct.**
- WaterCredit is a global initiative launched by Water.org, a non-profit organization working to bring water and sanitation to the world. **Hence, statement 2 is not correct. Therefore, option (c) is the correct answer.**

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## **Mains**

**Q.1.** What are the salient features of the Jal Shakti Abhiyan launched by the Government of India for water conservation and water security? (2020)

**Q.2.** Suggest measures to improve water storage and irrigation system to make its judicious use under the

depleting scenario. **(2020)**

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