

## Rain Water Harvesting in the Campus

As the human population grows, our daily need for water is increasing quickly. This creates a big opportunity to use rainwater harvesting to deal with water shortages and protect underground water levels. One big benefit of rainwater harvesting is that extra or unused rainwater can be sent into the ground to refill the underground water, also known as the aquifer.

Rainwater harvesting is an environmentally friendly method. It is a "green" practice with two main benefits: it helps keep groundwater levels steady and recharges aquifers. Communities can use this method through development programs. By storing rainwater and water from runoff in a planned way, we can prevent soil erosion and flooding while increasing the groundwater supply.

Using too much groundwater without planning has not only lowered the natural water level but also made the water dirty and unsafe. Collecting and storing rainwater helps save water for the future. It is also good for the environment and doesn't cost much. Instead of digging large areas to catch rainwater, we can collect it from rooftops. Storage tanks also help cool the ground naturally. The best part of this practice is that unused rainwater can be stored in natural ponds or man-made tanks, and later allowed to soak into the ground to recharge the aquifer.

### Objectives

- ✓ To increase the recharge of groundwater by collecting and storing rainwater, especially from rooftop runoff.
- ✓ To store water for gardening and washing purposes

### Need for Rainwater Harvesting

- **Rising Water Demand**
  - Rapid population growth has significantly increased the demand for fresh water.
  - Urban water supply systems face pressure from residential, industrial, and construction needs.
  - Overuse has led to falling groundwater levels and drying reservoirs.
  - Use of polluted water poses serious health hazards.

- Rainwater provides a clean and sustainable alternative.
- **Variability in Water Availability**
  - Natural water sources like lakes, rivers, and shallow groundwater are affected by seasonal changes.
  - Uncontrolled rainwater runoff leads to soil erosion and water scarcity.
  - Rainwater harvesting ensures a reliable supply for domestic needs.
  - It is especially helpful when surface water quality declines during the rainy season.
- **Environmental Responsibility**
  - Helps conserve and recharge groundwater levels.
  - Prevents seawater intrusion in coastal areas.
  - Reduces the risk of urban flooding and water stagnation.
  - Lowers both water and electricity bills.
- **Economic and Practical Benefits**
  - Collecting water close to homes increases access and convenience.
  - Cheaper to collect rainwater than to extract groundwater.
  - Can be done using traditional knowledge and local materials—no need for government aid.
  - Revives dry open wells and promotes decentralized, community-based water management.
  - Provides local employment opportunities, especially in rural villages.
- **Water Quality Advantage**
  - Pollution from industrial waste, human activity, and harmful minerals (arsenic, salt, fluoride) makes many sources unsafe.
  - Rainwater is one of the purest and most reliable sources of fresh water.
- **Campus Context**
  - College campus soil has good infiltration, ideal for rainwater absorption.
  - Daily water needs for gardening and washing can be met with harvested rainwater.
  - Reduces dependence on municipal or external water supplies.

## **Rainwater Harvesting Practice at C.P. & Berar College**

At C.P. & Berar College, a rainwater harvesting system has been successfully implemented in Wing C of the campus. Roof runoff water is collected through a network of pipelines and directed into a storage pit measuring 5 feet deep, 5 feet long, and 4 feet wide. The total water storage capacity of this pit is 2831.68 Lit. Any excess water from the roof that exceeds the pit's capacity is allowed to seep into the ground, helping to recharge the groundwater level.

## **Outcome**

The stored rainwater is used to support gardening and washing activities within the college premises. This practice has proven especially beneficial in the region, which experiences low rainfall and frequent water shortages. By harvesting rainwater, the college has addressed the issue of water scarcity and has also contributed to raising the local groundwater level. The collected rainwater now serves as a supplementary water source, helping meet daily maintenance and landscaping needs.