

## Conservation of water: Why is it important?

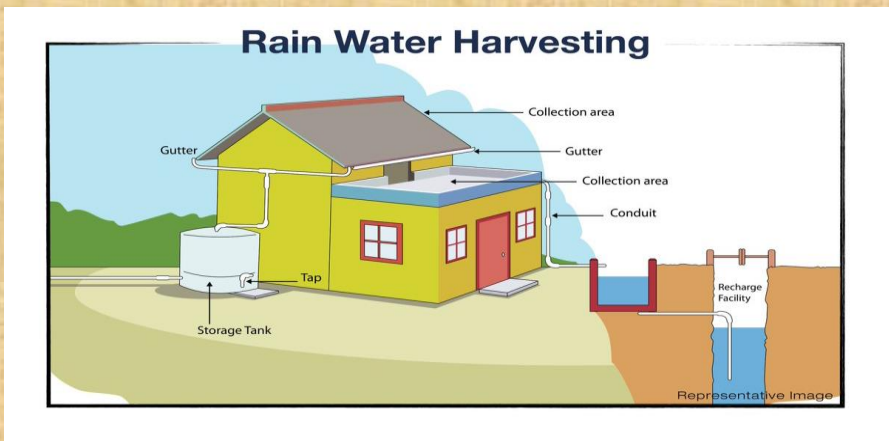
Water conservation is the technique of utilizing water and cutting down its wastage or unnecessary usage. Clean and fresh water is now a limited source so water conservation has become important now.



Unequal distribution of water across the country makes most of the population face water scarcity.

### Methods for water conservation:

- 1) **Rainwater harvesting:** Rainfall in India is highly seasonal so Rainwater harvesting is a very effective method of conservation of water. In this method, rain water is collected and allowed to percolate into a deep pit or a reservoir, so that it seeps down and improves the ground water table.



Rain water has been conserved and used for agriculture in several parts of our country since ancient times. The

infrequent rain if harvested over a large area can yield a considerable amount of water.

Contour farming is an example of such a harvesting technique involving water and moisture control at a very simple level. It often consists of rows of rocks placed along the contour of steps. Runoff captured by these barriers also allows for retention of soil, thereby serving as an erosion control measure on gentle slopes. This technique is especially suitable for areas having rainfall of considerable intensity, spread over large parts i.e. in the Himalayan area, northeast states, and Andaman and Nicobar Islands.



In areas where rainfall is scanty and for a short duration, it is worth attempting these techniques, which will induce surface runoff, which can then be stored.

- 2) Recycling of water:** The wastewater from industrial or domestic sources can be used after proper treatment, for irrigation, recharging ground water, and even for industrial or municipal use. If agricultural lands are available close to cities, municipal wastewater can be easily used for irrigation.



3) **Conservation of water in domestic use:** There is a large scope of conserving water at the household level. General awareness among the people about the importance of water and its availability, and the need for conservation can help in minimizing wastage to a large extent.



Losses during water supply also need to be prevented by reducing the leakages. Some of the ways for improving the efficiency of water use at the household level are:

- Reduce wastage-leaking pipes mean that a lot of water never reaches to the people. In Delhi, estimated losses are 35-40 %.
- Closing of taps while not in use.
- Use low flush toilets- reducing the amount of water used each time the lavatory is flushed.
- Build latrines and compact toilets which can turn human waste into clean, useful manure. This is much cheaper than connecting the toilet to a piped sewage line.

- Use bowls to wash vegetables, dishes instead of running tap.
- Greater use of recycled water 'grey water' in the home. Instead of using potable or treated water use bath and shower water for watering the plants.

- Reuse the wastewater from RO water purifiers for watering plants or washing your cars.
- Do not drain the leftover water in water bottles. It can be used for filling up water bowls for birds.

- Use a washing machine or dishwasher when it is fully loaded.

**4) Reduce the loss of water:** There are numerous methods to reduce losses due to evaporation and to improve soil moisture.

- Mulching i.e. the application of organic or inorganic materials such as plant debris, compost, etc., slows down the surface run-off, improves soil moisture, reduces evaporation losses, and improves soil fertility.
- Better irrigation techniques – Irrigation systems waste up to 70% of the water used. In drip irrigation, water loss is significantly less.
- Ploughing helps to move the soil around. As a consequence, it retains more water thereby reducing evaporation.
- Shelterbelt of trees and bushes along the edge of agricultural fields slow down the wind speed and reduce evaporation and erosion.



- Planting of trees, grass, and bushes breaks the force of rain and helps rainwater penetrate the soil.
- Contour farming is adopted in hilly areas and in lowland areas for paddy fields. Farmers recognize the efficiency of contour-based systems for conserving soil and water.
- Salt-resistant varieties of crops have been also developed recently. Because these grow in saline areas, overall agricultural productivity is increased without making additional demands on fresh water sources. Thus, this is a good water conservation strategy.
- **Reuse of wastewater:** Wastewater contains a lot of nutrients. Its use for irrigation saves these nutrients. It improves the productivity of crops and soil fertility. General utilization of wastewater through reuse and recycling improves water use efficiency. In fact, wastewater is a resource rather than a waste since it contains an appreciable amount of nitrogen, phosphorus, and potash. Stabilization ponds can be used for fish aquaculture. The effluent can also be used for the cultivation of short-term and long-term, ornamental, commercial, and fodder crops.

#### **Benefits of reuse:**

Practical experience has shown that wastewater reuse not only reduces the demand for fresh water but also can improve environmental quality.

- Reuse of water can make up for the shortage of water supply (reduces demand on good quality water)
- Untreated water or grey water can also be reused for various purposes. Grey water is defined as untreated household wastewater, which has not come into contact with toilet waste. It can originate from the shower, bath,

bathroom, washing basin, clothes washing machine, and laundry trough. In our country, nearly half of the wastewater is used for irrigation. Many municipalities sell their wastewater to the farmers. Many industries are buying the wastewater and using it.

- 5) **Ground water conservation:** There is more groundwater than surface water. Groundwater is less expensive and available almost everywhere. It is a sustainable and reliable source of water supply. Groundwater is relatively less vulnerable to pollution and is free of pathogenic organisms. Groundwater needs little treatment before use. It has a low vulnerability to drought. Groundwater is the key to life in arid and semi-arid regions.



Groundwater is the source of dry weather flow in some rivers and streams.

These are all the various methods to conserve the water.