Water Conservation Measures

Water flows perpetually between the ocean, atmosphere and the land, yet the earth’s water does not increase or decrease. About 97% of the earth’s water is salt water and 3% is fresh water. Water is a basic necessity for human survival, yet less than 1% of the earth is freshwater that is easily and readily accessible for human consumption. This is because most of the earth’s freshwater is frozen in glaciers or is deep underground in aquifers.

Water scarcity has been a major issue in Kenya. The scarcity can be attributed to poor management of water supply, recurrent droughts, contamination of water and an increase in demand for water from the high population growth. About 53.77% million people are living in Kenya with a 2.3% annual change in the population growth rate, and about 43% do not have access to clean water. Due to continued population growth, it has been estimated that by 2025, Kenya’s per capita water availability will be 235 cubic meters which is about two-thirds less than the current 650 cubic meters.

Water conservation can be defined as improved water management practices that reduce water loss, usage, and wastage and enhance the beneficial use of water.

Below are some of the water conservation measures that could be adopted to conserve and sustainably use water;

a. Rainwater harvesting:

This is the process of collecting, filtering, storing and using rainwater for domestic use, irrigation and other purposes. This technique has been around for years and is still effective to the present day. In areas that experience excess rainfall, surplus rainwater can be used to recharge groundwater. Harvesting rainwater can be done through:

i. Surface runoff harvesting: rainwater collected into natural reservoirs/tanks before it is lost as surface runoff.

ii. Rooftop rainwater harvesting: involves diverting, recharging and storing part of the rainwater that falls off the roof of a building into rain barrels/tanks.

iii. Construction of underground tanks: water is collected through pipes that are linked to the tank and water pumps are used to get water out. Underground tanks are efficient in reducing the rate of evaporation since they are located underground and there is no sunlight penetration.
iv. A barrage is a dam that is placed in a watercourse to increase the depth of water or to divert it into a channel for irrigation.

v. Dams: are designed to trap water. Rainwater can accumulate directly in them and the water collected can be used for domestic purposes and irrigation as well as hydroelectric power in instances where proper systems are put in place and a lot of water is harvested.

vi. Reservoirs: rainwater is collected from roads and rainwater runoffs.

vii. Trenches: trenches are dug to direct rainwater to the farms.

Harvested rainwater can be used for consumption, cleaning, irrigation, composting, fire protection and flushing toilets.

b. Rock catchment systems

Rock catchment systems use rock outcrops to divert rainwater to a central collection area. Concrete walls are built to direct the water as it trickles down the rock surface into a sand and gravel filter. In the final stages, it flows down the pipes connected to the covered storage tanks. This type of system has seen the Kibwezi sub-county have plenty of water, a project conducted by the Africa Sand Dam Foundation (ASDF) an NGO since 2010.

![Sand Dam Wall](https://www.mdpi.com/2073-4441/10/6/708/htm)

This has not only ensured that the residents have accessibility to clean water, but also empower a community by providing opportunities to earn a living and sustain their livelihoods.

c. High efficiency toilets:
This type of toilet is also known as a water-efficient toilet and is designed to remove waste by using water velocity rather than using water volume. High-efficiency toilets use 5.8 litres per flush as compared to older version toilets that could use up to 7.6 litres per flush.

d. Placing a bottle/brick in your toilet cistern

Placing a bottle filled with water and sand/rocks or a brick in the toilet cistern helps in reducing an equivalent amount of water that could otherwise wound up as wastewater. By placing the bottle/brick less water is needed to fill up the tank therefore less water is being flushed.

e. Turning off tap water/Fixing leaking pipes and water hardware:

Kenya losses up to 430 million litres of water through leaks, burst pipes, and non-revenue water every year. The lost water earns no revenue thus affecting the sustainability and economic viability of a country’s water resources and utilities.

Simple acts such as turning off tap water while brushing the teeth, using a glass to fetch water to use for brushing teeth, taking showers for a short duration of time, fixing new sustainably low-flow shower heads that do not waste lots of water and ensuring that all leaking sources are fixed or replaced.

f. Rehabilitation and protection of forests:

Preservation and protection of forests and water catchment areas are paramount to the source and availability of clean water not only for the present population but the future as well. This can successfully be done through the collaboration of local communities, civil societies, environmental activists, development partners and local authorities.

g. Watering the lawn:

The best time to water the lawn is during dawn or dusk hours so that the water is not lost/evaporated by the sun.

Humans and all life on earth are dependent on water, therefore, water is an extremely valuable resource and should be used sustainably. More efforts should be placed to ensure that every person, in rural, urban or arid and semi-arid areas has access to clean, affordable and reliable water for their everyday use. This will lead to a healthy and clean nation thus boosting the social and economic livelihoods of the people ensuring we achieve Goal number 6: “Clean water and sanitation” in the 17 Sustainable Development Goals.
References

https://www.american.edu/cas/economics/ ejournal/upload/marshall_accessible.pdf