



# Rainwater Harvesting: An Ancient Technique Of Water Storage

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**Abstract :** Rainwater harvesting is an age old tradition that has been used to collect rainwater for domestic use, as well as irrigation and drinking purposes. This method of water conservation has garnered attention in contemporary times due to increasing water scarcity in the world. The increasing importance of this method has compelled people to understand the relevance of such issue. Hence, this article tries to understand the meaning of rainwater harvesting, its historical background and advantages and disadvantages of using this method.

**Keywords :** Rainwater Harvesting, Water Storage, Water Conservation, Irrigation, Water Scarcity

## Introduction

Earth contains 75% of water to fulfil the requirements of living species. In the beginning of civilisation this was sufficient for people but with the changing climate conditions and life style earth began to experience the issue like high temperature and water pollution that lead to the extinction of many ponds, lakes and rivers like Saraswati River. Apart from that, the explosion of population and industrialization have contributed to the water scarcity in the world. According to the UN Habitat publication 'Rainwater Harvesting and Utilisation', "the urban population will be more than five Billion by 2025 of which 90% will be in developing countries"(UN, 2005). An increase in continuous and frequent population has increased the role of water conservation.

## Rainwater Harvesting

The idea of water conservation is not new and from the ages, people have been following this practice to meet their necessities related to water especially in the non-monsoon days. The largest civilisation in the world that is Harappan Civilisation also used to practice water conservation of which 'Great bath' is a good example (Ganguly, 2014). "Dholavira, a region in Mohenjo-Daro was situated between the two water channels" (More, 2020). This highlights the importance of water in people lives. The idea of construction of dams and bundhs to conserve water for the purpose of irrigation have described by Kautilya in Arthashastra (Ganguly, 2014). In India, several states practice water conservation in their own ways like in Andhra Pradesh, people use Cheruvu

(a tank or a pond used to store water). In Bihar, Ahar and Pynes are used to conserve flood water using land slopes (More, 2020). Therefore, from the above analysis, one can say that the water harvesting is an ancient technique of water storage.

Rainwater harvesting is a method of water collection. It is a practice of collecting rainwater through various mediums such as roof tops, land surface and within water channels for daily use (Kumar, 2017). The rainwater can be stored either in a small tank or a large catchment area depending upon the volume of rainfall in that particular area. The process of rainwater harvesting depends on three elements – collection, conveyance and storage systems (UN, 2005). The collection system can be described as the collection of water, conveyance system refers to the movement of water through pipes or gutters and storage system means storing the water into water tanks or reservoirs for further use (UN, 2005). The amount of rainwater and catchment area are the two factors that influence the whole system of rainwater harvesting. Wells, bore- wells, reservoirs, recharge trenches and recharge pits can be used to recharge the aquifers present below the surface area in order to prevent water scarcity (UN, 2005).

### **Advantages of Rainwater Harvesting**

The advantages of Rainwater Harvesting is discussed below :

1. The technique for rainwater harvesting can be easily installed and operated by people (Kumar, 2017).
2. The training for the execution of such techniques and materials for construction of rainwater harvesting can be easily available to people (Kumar, 2017).
3. It can also provide the control of water in the hands people which can help in reducing the problems associated with operation and maintenance of rainwater harvesting method (Kumar, 2017).
4. It is a cost- effective method as it can reduce the burden of buying water tankers from the market to meet the requirement of water in water scarce area (Prajapati et.al, 2023).
5. The most important advantage is that it can improve the groundwater and save the future generation from going through the situation of water scarcity (Prajapati et.al, 2023).

Seeing the advantages of such methods and techniques of rainwater harvesting, many parts of the world has supported this method of water conservation such as in Berlin, rainwater harvesting system was introduced in October 1998 to control flood, save water in the city and to create good micro climate (UN, 2005). In India, cities like Indore, Chennai and Aizawl adopted the system of rainwater harvesting (UN, 2005).

Despite of having several advantages , this method possess some disadvantages as well which can be discussed under the heading.

### **Disadvantages of Rainwater Harvesting**

1. The biggest disadvantage of rainwater harvesting is that it depends on the rainfall which is uncertain (Kumar, 2017).
2. The implementation of this technique requires down to top approach which can make it less attractive to the government agencies which have the responsibility of water supply (Kumar, 2017).

## **Methodology**

This article is based on the primary and secondary sources. The primary source includes Blue Drop Series 3 by UN -HABITAT and secondary source includes different books and articles concerning the topic. The articles and journals have also been collected from academic platforms like ResearchGate and online resources.

## **Conclusion**

Earth is home of several species because of its uniqueness in giving life. This is possible due to the presence of air, water, soil, fire and ether. Among these, water is the most important element after air due to its ability of providing good health to human as well as the other species. But, with increasing industrialisation, population explosion and the changing climate conditions, the importance of rainwater harvesting has increased in current time to fight against the problem of water scarcity. Though, it has some disadvantages but they cannot overshadow the advantages it offers. Several countries have adopted this system such as Berlin and India which shows the utility of this method in today's time.

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