RESEARCH ARTICLE

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The Role of Water Harvesting in our Life: A Study

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ABSTRACT

Although 70% of earth's surface is occupied by water and 90% of this water is salty water. Salt water has minerals etc. and cannot be used for drinking. Water is a natural resource. Environment is the surrounding medium. It consists of many ecosystems like Pond, Grassland and Forest Ecosystems etc. Each ecosystem has biotic (Living) and abiotic (Non living) components. For survival each living organism either animal or plant depends upon water. Due to excess wastage of water in industries and irrigation through canals, many areas are facing water crisis. To avoid this crisis, water harvesting is compulsory.

Key words: *Ecosystem, Natural Resource, Water Crisis, Water harvesting.*

INTRODUCTION:

Among the natural resources water is very important. People are aware of the limited supply and importance of water especially in dry continents like Australia. Water is the fundamental necessity of life everywhere in the world. For instances human body has averaging 57-60% of water. From the ancient time water harvesting became an important part of life. Around the third century BC, farmers used rain water harvesting for agriculture and other purposes. Water harvesting means the capturing of rain water, where it falls. The traditional water harvesting systems were Bawaries, Step-wells, Jhries, lakes and Tanks etc. In other words rain water harvesting is the accumulation and deposition of rain water for reuse on-site, rather than allowing it to run-off. Keeping the rain water in reserve is termed as water harvesting. In India rain water harvesting was done in M.P., Chhattisgarh, Rajasthan, Maharashtra etc. In Ratanpur (M.P.) 150 ponds were used for agriculture work. The Viranam tank of Tamilnadu is 16 K.M. long and has a storage capacity of 41,500,000 cubic meters. In ancient Tamilnadu, rain water harvesting was done by Chola Kings. The people belong to Thar Desert of Rajasthan traditionally share in rainwater harvesting. Chauka system, a type of rainwater harvesting is used in Jaipur region of Rajasthan.

METHODS OF RAIN WATER HARVESTING:

There are so many methods of water harvesting as surface runoff harvesting, rooftop harvesting and flood water harvesting are the main types used for rain water harvesting. The surface runoff harvesting method is used in urban areas where rain water flows away. In rooftop method the fallen rain water is collected from the roof of building in storage tank. It is very effective method and helps in augmenting the ground water level of that area. There are also some methods for rainwater harvesting like Dams, Rain Barrels, Trenches and slopes which also used for the said process. In Dam method these are used as barriers that are designed to trap water. The collected water is mostly used for irrigation and after treatment distributed for domestic use. At some places water collector Reservoirs are made. The collected water through reservoirs may be contaminated. Reservoirs collect water from roads and pavements. Another method for rainwater harvesting is Barrage. It is a type of dam having several openings. These openings can be opened or closed to control the quantity of water. Many states of India

like Tamilnadu, Maharastra, Rajasthan, Uttar Pradesh etc. are playing an important role in water harvesting since a long time. Water is the basis of life. We use it for drinking, irrigation and for production of hydro-electricity. It is cyclic resource which can be used again and again. In U.P., Punjab and Haryana, over irrigation through canals create problems According to a survey agriculture contributes 22% to India's GDP and 60% of the cropped area dependent on rains.

Fig. 1: Rainwater harvesting through Rooftop method

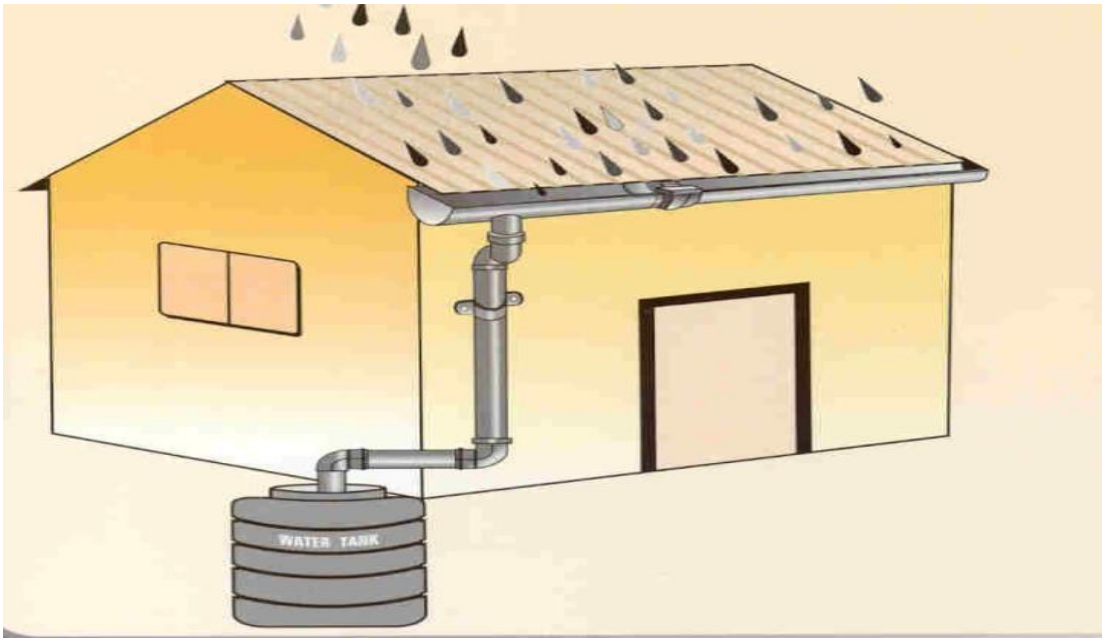

Fig. 2: Rain Water harvesting through Rainsaucer method

In Bangladesh Ratagul fresh water flooded forest helping in rain water harvesting without any harm to the income of used land. Rain Saucer is a device which looks like an up-sided down umbrella, collects the rain water directly from the sky. In this method there is no chance of contamination of water and makes potable for developing countries. Now many state governments making the guidelines for rain water harvesting compulsory. The municipal board and concerned authorities of that area provide permission only when they are satisfied by the building map having water harvesting system. In Banglore, The government constructed a "Rain water Harvesting Theme park" in the name of Sir M. Visvesvaraya in 4900 square meter land, located at Jainagar. This park has 26 different types of rain water harvesting models.

In Uttar Pradesh, government has announced many areas as dark zone where a farmer cannot drill a tube-well without the permission of higher authority. For these areas government has sanctioned new canals for irrigation and also to increase water level. Due to increase population, the ponds and other natural sources of water are occupied. Seeing the decreasing water level, government is taking action against those bodies and decide that areas as water conservation site. In different cities of Uttar Pradesh like Kanpur, Agra, Ghaziabad, etc. rain water harvesting has become mandatory.

In New Delhi, its Central Ground Water Authority (CGWA) body has made rain water harvesting mandatory in all its institutions and residential notified areas. The CGWA also banned drilling of tube-wells in notified areas.

ADVANTAGES AND DISADVANTAGES OF RAIN WATER HARVESTING:

Water conservation or harvesting is necessary for life. With the help of it we can get rid of the tendency to drought. To avoid water crisis we should create a tendency for water harvesting. The harvested water will be used in drinking, irrigation etc. Rainfall is a good source of water for both domestic and commercial purposes. It helps in preventing water pollution. Rain water harvesting stops the ground water contamination. At the time of rainy season, the water is filled in empty tyres, tins containers etc. and contaminated after a few hours. It becomes a breeding ground for mosquitoes, flies, which cause Dengue, Malaria, etc. Those countries which have arid environment use rain water harvesting as a cheap and reliable source of clean water.

There are also some disadvantages of rain water harvesting. The rain fall water is acidic due to polluted environment. It may cause the death of crops because it contains chemicals. Due to rainwater harvesting, the water level of seasonal water sources reduces which affect the wild life. There are also some other disadvantages of water harvesting like additional expenditure to treat water and risk of contamination of harvested water etc. If there is no rainfall, we cannot harvest rainwater. It means this process of rainwater harvesting is solely dependent upon the availability of water. The rainwater harvesting process or storage facility set back us financially in a way because we pay normal water bill and second maintenance of the rainwater harvesting.

CONCLUSION:

In India many areas of some states are suffering by drought due to scarcity of water like Bundelkhand region and Latur in Maharastra since a long time. Here people and crops are facing water crisis. The government of concerned state should make arrangement to supply the water. For this with collaboration of government machineries, Non Government Organization (N.G.O.) also participates to reduce water crisis. Many countries have their own national water laws. India's national water policy 2002 is cogent and converts into a law. The Village Panchayat, Municipal Corporation, concerned developmental authorities and we must share for water harvesting. Saving water for life is necessary.

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