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Water Conservation: A paramount need of the hour

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Abstract

Water is one of the essential and basic necessities for all the living organisms existing on the earth. It is an important component for all the natural processes. Total water on the earth is constant and is balanced through continuous hydrological cycle. Despite earth's majority of the cover is filled by water, but only a small fraction of freshwater is suitable for the living organisms including human beings. In recent year's water table has faced serious threat due to rapid increase in population, industrial development, over usage, climate change, global warming, shifting of precipitation pattern, slow replenishment and negligence of people to use it in a sustainable way. Therefore management and conservation of water has become a paramount need of the hour to maintain the quality of life on earth.

Keywords: Water, Use, Shortage, Conservation.

Introduction

Water is one of the precious natural resource. Water covers about 70% of the earth's surface out of which 97% of water is in oceans and only 3% is available as fresh water. 77.2% of the fresh water is locked in ice caps and glaciers, 22.4% occurs in underground pools and soil moisture and 0.36% is distributed in swamps, lakes, streams and rivers. At global level, 70% of water is used for agriculture, 25%

for industry, and 5% for domestic use. However this percentage varies from country to country. Worldwide water usage has increased more than 10 times from the beginning to the end of 20th century. In different continents increase in water use is highly variable. In African continent in 1950 the water usage was 56 km³ which in 2005 arose to 217km³. In Europe in 1950 the use of water was 94km³ which has increased to 673km³ in 2005. In Asia, it was 856km³ in 1950 which increase by 2005 to 3187 km³. The UN has estimated that by the year 2050, 4 billion people will be seriously affected by the water shortage. At present about 100 countries of the world are sharing the waters of 13 large rivers and lakes. More than 650 million people in almost 40 countries suffer from water scarcity. Among them 36 countries face extremely high water stress including several countries in the Sub-Saharan region, Middle East, Africa and Asia. Among the Asian countries the water shortage in India, China, Nepal and Bangladesh is very common due to failure of tropical monsoon, drying up of streams, lowering of water table, excessive pumping of ground water, increased drought and due to biological and chemical contamination. Spain, France, Cyprus, Bulgaria, Romania, Germany, Czech and Croatia are the water stressed country among the European Union.

The usage of water across various sectors in India is on the rise. India use 90% of the available water for agriculture, 7% for industry and 3% for domestic use. The total annual freshwater withdrawal in India is estimated to be at 3800 cubic km twice as much as just 50 years ago. India is expected to face critical level of water stress by the year 2025. Water withdrawals

across all the sectors including domestic, livestock, irrigation and thermoelectric power generation has drastically increased worldwide. When compare with few decades during the past, the drought condition in all over the world including India have been doubled.

Very recently with increasing demand of water requirement its management and preservation has become an issue. It is anticipated that water level may go further down and its necessity may further increase more in future. Majority of water bodies on the earth contain toxic chemicals. In some countries along with toxic chemicals bad sanitary conditions makes the water to carry biological pathogens and replenishment of such types of contaminated water may take several years. Moreover with increase in population, chemical and biological contamination tend to increase more in future if no strict water conservation/management policy is maintained in and around the developing countries, industries, in houses, commercial sectors, municipalities, metropolitan cities and in agriculture. People living in developing countries are likely to get exposed to toxic contaminants due to elevated aquifers, ground water contamination, decrease in the water table, less waste water treatment facilities and unplanned industrial development etc.

Wastage of potable water occurs in several ways especially from domestic kitchens, bathrooms due to unnecessary and continuous running of tap, several flushing of toilets with more than expected water to wash, home garden/lawn watering and car washing. In developed countries the water consumption per home is almost 50-70 gallons/person/ day whereas in developing countries like India, the approximate usage

of water per home is 60 gallons/person/ day in which almost 15% of the water got wasted. However with conservative method 20 gallons/home/day are sufficient enough to meet the day to day water needs resulting in the saving of 92% of water. For the regional humans welfare and the development, the reliable sources and supply of drinking water is utmost important. Considering these facts, water conservation/management policies should be implemented at the grass root level. The ultimate goal of any water conservation effort can be focused to reduce unnecessary water intake and to alter the flow to the places where physical and chemical properties of the water are encouraging to reuse. In addition, water conservation plans can be implemented by new planning, management, technology, regulatory and enforcement in water supplying systems and rehabilitate in water usage habit to individuals.

The key point in water conservation plans must include the monitoring of the water resources including the reservoirs of stream flows, surface water resources and ground water levels. Moreover in case of India the method adopted so far can be modified which would able to conserve about 90% of the water. For example brushing, washing hands and shaving by running tap for 9 minutes require 81 litres of water while using mug and tumbler it require meagre 3 litres. Similarly flushing traditional toilet consumes 104 litres, while with modified adaptation of wet down, tap off, soap up, rinse off method and using modern dual flush system in toilet it needs 25 litres of water only. Besides, watering plants, washing floor, and washing car by running hose for 20 minutes may exhaust 720 litres of water while with a

bucket or two buckets car washing method may require 41 litres of water only.

Therefore it is the utmost responsibility of the human being to take care of the water resources, its usage pattern, sustainable management and conservation. Keeping in view the necessity of water resources various methods/ measures such as storage of surface water, rain water harvesting, artificial recharge of ground water, adaptation of drip and sprinkler irrigation, protection of catchment area, afforestation, management of cropping pattern, reducing evaporation from water bodies, recycling of domestic and industrial water etc. must be adapted for its conservation and proper management. Awareness must be created among the general public/masses about the importance of water, its management and conservation so as to save the planet earth for maintaining the quality of human life in a good safe.

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