WATER A PRECIOUS RESOURCE

INTRODUCTION

We all depend on the same vital substance water, diverse by its nature, it is solid, vapour and liquid. It is in the air, on the earth surface and within the ground ever-changing and giving shape to a dramatic range of natural ecosystems. For the earth's inhabitants, diversity of the resource also means great disparities in well being and development . As we degrade the quality of our water and modify the natural ecosystems on which people and life depend, we also threaten our own survival.

AVAILABILITY OF WATER

Water is the most widely occurring substance on this planet. Globally distributed by the hydrological cycle, or driven by the energy cycle, the circulation of water powers most of the other natural cycles and conditions the weather and climate. Water has shaped the earth's evolution and continues to fashion Its programmes. This is the water precipitated from the atmosphere on to land, where it may be stored in liquid or solid form, and can move laterally and vertically and between one phase and another phase by evaporation, condensation , freezing and thawing on the land surface. We are aware that about 71 % of the earth's surface Is covered with water. Almost all the water on the earth is contained in the seas and oceans, rivers , lakes, ice caps, as groundwater and in the atmosphere. However, most of this water is not fit for human consumption.

1. Pure water is a colourless, odourless, tasteless, transparent liquid.
2. Water exists in all he three states, solid (as ice), liquid (as water) and gas (as water vapour).

FORMS OF WATER

When water circulates through the water cycle it can be found in all the three forms i.e., solid , liquid and gas -at any given time somewhere on the earth. The solid form, snow and ice, is present as ice caps at the poles of the earth, snow covered mountains and glaciers. Liquid water is present in oceans, lakes, rivers and even underground. The gaseous form is the water vapour present in the air around us. The continuous cycling of water among its three forms keeps the total amount of water on the earth constant.

WATER CYCLE

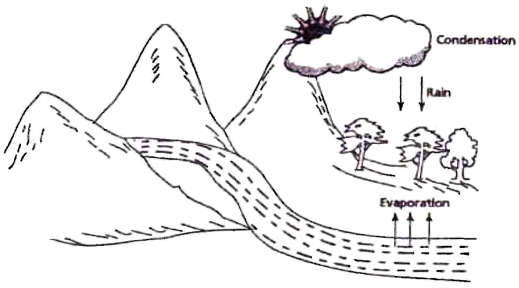
The supply of water in nature does not run out. This is because water is continuously recycled in the water cycle.

1. Heat from the sun causes the water on the earth's surface to evaporate. The vapour rises, cools and condenses to form tiny water droplets. These droplets form clouds.

2. The clouds get carried along by air currents. They cool and the droplets join to form larger drops. These fall as mist.

3. If the temperature in the region is very low, these water droplets fall as hail, sleet or snow.

4. Some of the rain water flows along the ground as streams. Some soaks through the ground and then reappears as springs. Streams and springs join to form rivers. Rivers flow back into the sea. Thus the water cycle is complete.



The water cycle

IMPORTANT SOURCE OF WATER

Ground water is an important source of water. If we dig a hole in the ground near a water body we may find that the soil is moist. The moisture in the soil indicates the presence of water underground. If we dig deeper and deeper, we would reach a level where all the space between particles of soil and gaps between rocks are filled with water. The upper limit of this layer Is called the water table. The water table varies from place to place, and it may even change at a given place. The water table may be at a depth of less than a metre or may be several metres below the ground. The water found below the water table is called groundwater. What is the source. of this groundwater ? The rainwater and water from other sources such as rivers and ponds seeps through the soil and fills the empty spaces and cracks deep below the ground. The process of seeping of waler into the ground is called infiltration . The groundwater thus gets recharged by this process. At some places the groundwater is stored between layers of hard rocks below the water table. This Is a known as a aquifer. Water in the aquifers can be usually pumped out with the help of tube wells or handpumps. We have at many places in India an age old practice of water storage and water recharge like the bawris. bawris was the traditional way of collecting water.

DEPLETION OF WATER TABLE

Increase in population, industrial and agricultural activities are some common factors affecting water table. Scanty rainfall is another factor that may deplete the water table.

(a) Increasing population:

Increasing population creates demand for construction of houses, shops, offices, roads and pavements. This decreases the open areas like parks and playgrounds. This, in turn, decreases the seepage of rain water into the ground. Moreover a huge amount of water is required for construction work. Often groundwater is used (or this purpose).

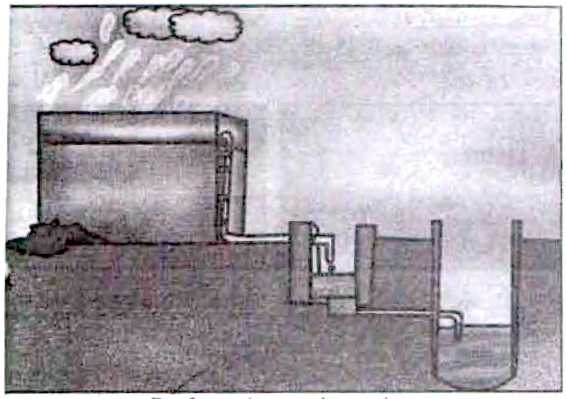
So, on one hand we are consuming more groundwater, and on the other we are allowing lesser water to seep into the ground.

(b) Increasing Industries :

Water is used by all the industries. Almost everything that we use needs water somewhere in its production process. The number of industries is increasing continously. Water used by most of the industries is drawn from the ground.

WATER MANAGEMENT

We have seen that most of the water that we get as rainfall just flows away. This is a waste of precious natural resource The rainwater can be used to recharge the groundwater. This is referred to as water harvesting or rainwater harvesting. We have at many places in India an age old practice of water storage and water recharge like the bawris Bawri was the traditional way of collecting water. With time the bawris fell into disuse and garbage started piling these reservoirs. However, because ofthe acute water shortage, people In these areas have had to rethink. The bawaris are being revived. Today the situation is that inspite of scanty rains these places are managing their water needs well. A farmer using water in the field can also use water economically. May be you have heard of drip irrigation. Drip irrigation is a technique of watering plants by making use of narrow tubings which deliver water directly at the base of the plant.



Rooftop rainwater harvesting

EFFECT OF WATER SCARCITY ON PLANTS

Plants need water to get nutrients from the soil to prepare their food . Just imagine the conse quences if water is not available to plants.

The green character of the planet shall be tost This may mean the end of the life, for a wond without plants shall mean no food, no oxygen, nol enough rain, and innumerable other problems.

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