Water of Depletion(WoD)

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ABSTRACT:

Depletion of water means scarcity of water which means that there is a lack of water. Water scarcity is the lack of sufficient available freshwater resources to meet water demand. It is manifested by partial or no satisfaction of expressed demand, economic competition for water quantity or quality, disputes between users, irreversible depletion of groundwater and negative impacts on the environment. One of the problems that hinder sustainable development in countries is the lack of renewable water resources. Some of the negative effects of ground-water depletion include increased pumping costs, deterioration of water quality, reduction of water in streams and lakes, or land subsidence. "WATER EVERYWHERE, NOT A DROP TO DRINK", it's true that we find water everywhere but consumable water is minimal. It is high time that we be alarmed of this and takes necessary steps to prevent water depletion. Water is the most precious resource for the existence and survival on earth. 3/4th of the earth's surface is covered with water. Out of this 90% is salt water unfit for utilization or consumption. Only 2% of the total water is fresh water that can be consumed. There quantities are naturally increased by rains and naturally decreased by evaporation, climate changes and human activities.

Key Words: Ground water, Depletion of Water(WoD),Water Everywhere, Not a drop to drink, climate change.

INTRODUCTION:

Water of Depletion(WoD): Depletion of water means scarcity of water which means that there is a lack of water. Water scarcity is the lack of sufficient available freshwater resources to meet water demand. It affects every continent. It is manifested by partial or no satisfaction of expressed demand, economic competition for water quantity or quality, disputes between users, irreversible depletion of groundwater, and negative impacts on the environment. One of the problems that hinder sustainable development in countries is the lack of renewable water resources. Some of the negative effects of ground-water depletion include increased pumping costs, deterioration of water quality, reduction of water in streams and lakes, or land subsidence. "WATER EVERYWHERE, NOT A DROP TO DRINK", it's true that we find water everywhere but consumable water is minimal. It is high time that we be alarmed of this and takes necessary steps to prevent water depletion. Water is the most precious resource for the existence and survival on earth. 3/4th of the earth's surface is covered with water. Out of this 90% is salt water unfit for utilization or consumption. Only 2% of the total water is fresh water that can be used/consumed[1]. The better use of this valuable natural resource is very essential. Around 60% of the human body is water, 90% of the blood is water and the human brain is 75% of water. Some of the fresh water sources are ground water, surface water, frozen water, and desalination. Ground water means the fresh water that is present in the surface of soil and rocks. Ground water is seeped into the ground through surface water and this is commonly used for agriculture and household purposes.

Surface water is the water in lakes, rivers and oceans. There quantities are naturally increased by rains and naturally decreased by evaporation, climate changes and human activities. Half of the largest cities in the world experience a scarcity of water. Although a mere 0.014% of all water on Earth is both fresh and easily accessible (of the remaining water, 97% is saline and a little less than 3% is hard to access), technically, there is a sufficient amount of fresh water on a global scale, for humanity to get by.

OBJECTIVE:

01. To study water conservation habits of people.
02. To identify awareness of different Government schemes available for promotion of water conservation systems and equipments.
03. To study peoples attitude on water conservation techniques.
04. To assess the cause and impacts of water depletion
05. To identify the health, safety and environmental risks associated with the water depletion.

SIGNIFICANCE:

The benefits of recycling are gigantic. As it gained much importance and also has a high scope for future, the importance of recycling is very high. Recycling is the ever best way, no matter what the product is. It can be done from our homes to the biggest of big companies.

Let us unearth to its importance and benefits:

1. **Waste minimization**: The waste spills over the surrounding land and dumping would drastically reduce. As all the waste or used products are being recycled, there will be no waste left. Waste, is a very crucial question as the disposal of it is causing many issues around us. Recycling is the ever best solution for this.
2. **Prevents pollution**: When new, fresh raw materials are used there are many chance of pollution by emitting toxic gases or greenhouse gases. And also the waste spilling does not happen as it is being recycled. These two factors prevent pollution of the environment at a very fast rate.
3. **Less usage of fresh resource**: The use of fresh resources for manufacturing would be very less when the old products are being recycled. This prevents the resources from depletion and thereby saving it for future.
4. **Energy conservation**: the less use of fresh resources conserves the resources for our future generations as our old generations kept it for us. Moreover the resources that are under the threat of depletion can be saved.
5. **Jobs creation**: Recycling being an industry and have high potential, large scale companies are yet to set up and are being set up. This results in creation of wide array of jobs all throughout. United states have already witnesses the change as they already saw the growth of recycling industries and have identified the potential.
6. **Conserves natural resources**: Conserving natural energy for future is not an easy task. If that is being able to be implemented then recycling is the best solution ever.

CAUSES FOR DEPLETION OF WATER:

Poor storage : due to poor storage facilities, lots of rain water is wasted. The technological development in procuring rain water and storing it for future use is low. A lot of water is again lost due to ignorance. This again causes depletion[2].

Saltwater : deep within the ground, the water gets mixed with salt water and it is termed as saltwater contamination. This in turn reduces the availability of usable water. This is another reason for depletion of water resources.

Low rainfall : rainfall has reduced considerably over the years. This is mainly because of large scale deforestation and drastic climatic changes. These add to the reduction in water resources.

Agriculture : agricultural activities steadily increasing by the day which means more water is pumped for use. For agricultural use more ground water is pumped because it's free of cost. This can be done by fixing a bore well. This reduces the levels of water leading to its depletion. Also refer about Agricultural pollution

Excessive demand of water : due to over population, the demand of water has increased considerably. More quantities of water are used and wasted over the time.

Evaporation : due to global warming and change in the climate, more amounts of surface water and ground water is being evaporated due to excessive heat. There is a decline in the level of water in the reservoir and dams due to evaporation.

Pollution : most of the industrial waste water are dumped to these water sources. This in turn pollutes and contaminates water. This can be considered another reason for depletion of water resources.

Deforestation : This can be considered a major cause for water depletion. Large scale deforestation considerably lowers the capacity of the soil to retain water and this affects the water table.

EFFECTS OF WATER DEPLETION

Some of the negative **effects** of ground-**water depletion** include increased pumping costs, deterioration of **water** quality, reduction of **water** in streams and lakes, or land subsidence

Contamination : one of the major effects of depletion is contamination. For getting water, deep wells are dug as a result the ground water gets mixed with salty water deep within making it contaminated. This is known as salt contamination. This eventually reduces the amount of consumable water[3].

Marine life : due to the depletion, contamination and evaporation of surface water, the marine life gets affected. This is a threat to the fishes, flora, fauna and all the creature of the sea.

Agriculture : agricultural productivity depends on the availability of water. Agriculture cannot exist without adequate supply of water. Due to the depletion of water resource, the output or the productivity of agriculture reduces which affects the food supply of the country.

Aquifers : an aquifer is a permeable rock that holds ground water. This can be used for water supply for agriculture and other human activities. An aquifer can be at different depths depending on a lot of natural factors. So as a result of depletion, the aquifers also get depleted.

Deep wells : as a result of water depletion, deep wells need to be dug because of the water shortage. Pumps will have to be put deeper and deeper to extract water.

Expensive resource : water being a renewable resource, it will become very expensive due to limited availability. If this resource is used, wasted, polluted and depleted, it will become a non-renewable resource.

EFFECTIVE WATER MANAGEMENT

Alternative source : any other alternative source of water should be discovered so as to avoid further depletion.

Technology : newer technology should be developed so that proper storage of ground water can be attained without leakage. This can reduce depletion to an extent. Comprehensive research should be done to find new methods[4].

Awareness : the government should organize effective campaign and make people aware of the how precious and priceless the water resources are. Awareness should be reach all levels of the society including children. Special classes should be conducted in each and every school of the country. People should be taught to reduce, reuse and recycle water to avoid wastage. All these measures can be taken to reduce and avoid water depletion.

Plant more trees : afforestation can reduce depletion to a great extend. The roots of the plants and trees helps to hold more water thus increasing the ground water. This prevents soil erosion too.

Don't pollute water : throwing of industrial waste and other harmful chemical into the water should be banned completely. Proper measures and strict laws should be passed to check pollution of the water resources. This in turn preserves the naturality of the water available which can be for future use. Less contamination and pollution reduces depletion to a large extent.

Ground water pumping : no measures are adopted to check the pumping of ground water. So more and more water is being pumped because it's free of cost. This should be completely banned so that the ground water can be preserved[5].

To conclude, water is very essential for the survival of mankind. If these available water resources are not preserved, it might become a non renewable resource. Reduce; reuse and recycle should be the motto. Effective utilization without wastage of water resources should be made effective so that the future generations of mankind is not affected[6].

CONSERVATION OF WATER:

WAYS TO PROTECT AND CONSERVE GROUNDWATER

Reduce, Reuse, and Recycle, Recover, Redesign and Remanufacture

Reduce the amount of "stuff" you use and reuse what you can. Recycle paper, plastic, cardboard, glass, aluminum and other materials[7].

Go Native

Use native plants in your landscape. They look great, and don't need much water or fertilizer. Also choose grass varieties for your lawn that are adapted for your region's climate, reducing the need for extensive watering or chemical applications.

Reduce Chemical Use

Use fewer chemicals around your home and yard, and make sure to dispose of them properly - don't dump them on the ground[8].

Manage Waste

Properly dispose of potentially toxic substances like unused chemicals, pharmaceuticals, paint, motor oil, and other substances. Many communities hold household hazardous waste collections or sites - contact your local health department to find one near you[9].

Don't Let It Run

Shut off the water when you brush your teeth or shaving, and don't let it run while waiting for it to get cold. Keep a pitcher of cold water in the fridge instead.

Fix the Drip

Check all the faucets, fixtures, toilets, and taps in your home for leaks and fix them right away, or install water conserving models[10].

Wash Smarter

Limit yourself to just a five minute shower, and challenge your family members to do the same! Also, make sure to only run full loads in the dish and clothes washer.

Water Wisely

Water the lawn and plants during the coolest parts of the day and only when they truly need it. Make sure you, your family, and your neighbors obey any watering restrictions during dry periods[11].

Natural Alternatives

Use all natural/nontoxic household cleaners whenever possible. Materials such as lemon juice, baking soda, and vinegar make great cleaning products, are inexpensive, and environmentally-friendly.

Learn and Do More

Get involved in water education! Learn more about groundwater and share your knowledge with others.

BEST Methodology to Conserve the Water by 6R principle(Reduce, Reuse, and Recycle Recover, Redesign and Remanufacturing): The recycling is in existence from the 400 BC itself. The non-existence of no much waste from the earlier times shows that all the waste or residue like ashes, potteries etc. were recycled. Europe witnessed recycling of bronze even before the industrial era[7].

Industrialization paved way for the increase in the need of recycling due to the scarcity and the increased price of raw materials. The used materials which were thrown out as waste were available on cheap prices and also in abundance. The 19th and 20th century saw the remarkable move to recycling as huge scrap was consumed on a very large scale. After the First World War, there was a significant change as many merchants collected the materials for recycling as they could identify the positive movement of market towards recycling[12].

Recycling of used papers to new papers in Japan and brick making from the ash of timber and coal in Britain were two notable moves to the development of recycling.

Conclusion

In my opinion I believe the best method to reduce water depletion is to develop public awareness among the people of every Indian citizen towards importance of water conservation and water protection by 6R principle(Reduce, Reuse, and Recycle. Recover, Redesign and Remanufacturing) of water.

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