

The importance of water and conscious use of water

Abstract

Water is one of the most essential needs for life. About 0.3% of the water resources in the world are usable. Water shortages already exist in many regions, with more than one billion people without adequate drinking water. This situation is one of the most important indicators of why we should be very sensitive and conscious towards our water resources. As the world population increases need water also increases. However, as a result of different effects and especially human activities, water resources are decreasing, polluted and still used unconsciously. Water use has doubled increased between the years 1940-1980 and is faced with the danger of water shortages in many countries such as Turkey. Therefore, it is necessary to take and implement measures as soon as possible and we have to use water resources carefully. The aim of this study is to review the literature on the subject, to better understand the importance of water and to evaluate the issues such as preventing water pollution and waste from a theoretical perspective.

Keywords: water, water resources, water conservation, water scarcity, water waste

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Introduction

Water and water resources is very important for maintaining an adequate food supply and a productive environment for the all living organisms. As human populations and economies grow, global freshwater demand has been increasing rapidly. In addition to threatening the human food supply, water shortages severely reduce biodiversity in both aquatic and terrestrial ecosystems.¹ The negative effects of global population increase, climate change impacts, and lifestyle changes are exerting growing pressures upon our vital water resources leading to widespread water stress in many countries. As a result, there is growing realisation of the urgent need to conserve water. Water is essential to life because it heavily influences public health and living standard. However, water is unequally distributed throughout the world. Water is a very important required substance in order to sustain vital activities of human such as nutrition, respiration, circulation, excretion and reproduction. In addition water is also a life space as well as being one of the basic substances in the formation of life environment.

Sun heat causes to evaporate water; it forms masses in the atmosphere in the form of clouds of water droplets that evaporate and descend to the earth in the event of rain, hail or snowfall and enable life to continue. Plants absorb water from the soil and release a certain part of it back into the atmosphere through transpiration; evaporation, precipitation and perspiration make up the water cycle. One of the main features that distinguish our world from other planets is that it contains water. Water has been the most important factor in the formation of civilizations in history and the most important point determining the residential areas. Water resources in the world are found in air, sea, land, rivers, lakes and oceans. While the water in the air moves between the earth and the atmosphere as a result of the hydrological cycle, the water on the land is in the form of underground waters.² Three-quarters of our world is covered with water and the human body is mostly made up of water. Water has a vital importance for all living things and some of the main functions in the human body can be summarized as follows; it is a biological solvent that provides both the transport and dissolution of vitamins and minerals in the body; it is important in regulating body temperature; facilitates the work of the kidneys and other organs, protects and acts as a cushion;

plays a fundamental role in moisturizing the skin, removing toxins and cleansing the body; it supports the conversion of nutrients taken into the body into energy and also helps the absorption of nutrients; water also the main ingredient of carbohydrates, fats and proteins in the human body. In addition to all these, water has an important place in performing many vital activities such as circulation, excretion and reproduction,³ 80-90% of our blood and 75% of our muscles are made up of water.² Water is an indispensable element of life and we feel uncomfortable when we are dehydrated even for a short time. When we lose very important blessings like the water we have, we begin to realize how water is a precious substance.

“Population growth, accompanied by increased water use, will not only severely reduce water availability per person but also create stress on biodiversity in the entire global ecosystem. Other major factors that limit water availability include rainfall, temperature, evaporation rates, soil quality, vegetation type, and water runoff. Furthermore, serious difficulties already exist in fairly allocating the world’s freshwater resources between and within countries”.¹ It has been reported that water consumption has increased seven times in the last century.⁴ Potable water resources in the world; irregular urbanization, excessive population growth, water pollution, water waste, increase in greenhouse gases and excessive industrialization are increasingly damaged and decreasing over time. Pollution of already small quantities of usable and potable water resources, unsuitability of water used in energy production for human consumption by recycling, uncontrolled use of pesticides, improper agricultural practices, waste of water, climate changes due to global warming, drought, insufficient knowledge of water and unconscious reasons such as consumption mean that all living things are deprived of water, which is the source of life. Water resources are one of the natural resources that are extremely important for countries. In order for a country to be considered rich in water, the annual water amount per capita must be at least 8.000-10.000m³. The amount of water falling per capita in Turkey is approximately 1.430m³ therefore is not between water-rich countries. Water resources create habitats for various flora and fauna members, contribute significantly to hydrological and chemical cycles, and despite all these benefits, water resources are among the most endangered ecosystems.

The aim of this study is to examine the importance of water in terms of environmental sustainability, water pollution and water conservation from a theoretical perspective by scanning the relevant literature.

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The deterioration of the natural composition of water resources is called water pollution due to the fact that the substances in the natural composition of water resources (streams, groundwater, lake, sea ...) rise above the ideal concentration values as a result of human activities.⁵ Water resources necessary for the life of living things, economic development and the environment. This important natural resource most affected by environmental pollution and the most vulnerable in terms of environmental pollution. The quality of water to be drunk safely by people should contain sufficient O₂ and necessary minerals and should be clear.⁶ Considering that one liter of wastewater pollutes eight liters of clean water⁷ and makes it unusable, it is better understood to what extent the natural cycle of water resources is in danger. Considering that the number of healthy and deprived people of water today is approximately 1.4 billion,⁸ it is better understood how important the issue is. Pollution of rivers, lakes, groundwater and seas is mostly caused by human activities and consequently, the natural balance of ecosystems deteriorates. "The main pollutants encountered in water are acids and alkalis, detergents, household wastes and fertilizers, food industry wastes, various gases, heat, various metals, nutrients, oils and dispersants, organic toxic wastes, pathogens and pesticides".⁹ Water pollution does not only stay in water, it passes to the soil and from the soil to plants, vegetables and fruits through irrigation, and these harmful wastes also pass to the animals that drink from these polluted water and the sustainability of food resources is negatively affected. "Use of poor quality water; diseases caused by water on living things; low productivity in agricultural activities; the reduction of biodiversity in the aquatic habitat; deaths and increases in drinking and utility water treatment costs".¹⁰

Water pollution, in addition to causing a decrease in usage and drinking water, threatens the lives of all living creatures in the water, and the biological diversity in the ocean, sea, lake and aquatic environments is damaged by the pollution of water. Water resources are also chemically contaminated by industrialization, pesticides used in agriculture, chemicals used unconsciously in agriculture and industry. Agricultural leaks, disinfection practices, faulty industrial practices, leachate from underground storage tanks, mining activities, waste of chemicals and corrosive waters are the most important chemical pollutants.¹¹ Water contaminated with chemical pollutants is transported to different places through the hydrological cycle, threatening our ecological balance and health. The healthy water drunk and used should be colorless, odorless and taste water; its chemical content should contain some basic elements needed by the body such as calcium, magnesium, sodium; they should not contain nitrite, nitrate, organic matter, chemicals, heavy metals and disease-causing microorganisms. Some of the factors that will have a pollutant effect on surface waters can be listed as follows: disease-causing organisms, organic pollutants, industrial wastes, synthetic detergents, radioactivity, pesticides, chemical pollutants, inorganic salts, artificial and natural agricultural fertilizers, waste heat. Some of the pollution in water resources can be understood by appearance. But taste, smell, pollution caused by microorganisms, heavy metals, nitrates, radon and many chemicals can only be understood by laboratory tests. For this reason, analysis of potable water should be done regularly.

Correct perception of water consumption and usage are the key factors that affect water-use behavior. The majority of the population has misconceptions on water consumption, thus leading to water wastage in households. Some measures to prevent water waste can be listed as follows; as it causes serious water loss, drip taps should be repaired, water-saving equipment should be used, instead of washing vegetables and fruits under a stream, they should be washed in a bowl, the dishes should be washed in the dishwasher, the hot water pipes should be covered with insulating material, the thermostat setting of the hot water system should not be too high, the washing machine should be operated when it is completely full, a shower head with adjustable flow rate should be used while taking a bath, a shower head that uses water efficiently while taking a shower, cool hours of the day should be chosen for watering the garden and flowers, care should be taken to grow plants that do not require much water in the garden, choose plants suitable for the climate of your location, rain large water tanks should be used to collect water. The factors to be taken into consideration in order to use irrigation water more effectively in agriculture are given below. One of the methods of sprinkler and drip irrigation should be chosen in all areas where climate, soil and topography conditions are favorable. The limited use of water needs to be widespread.

Irrigation should be done during the periods when the plant needs the most water, other than this, limited irrigation should be done, or irrigation should be stopped completely and larger areas should be irrigated with the water saved here. Methods that will keep the soil moisture should be used in agriculture. The continuous use of commercial fertilizers in agricultural production disrupts the soil structure and reduces the water holding capacity of the soil. Green manure and the use of animal manure increase the water holding capacity of the soil. Since tillage causes moisture loss, agriculture without tillage should be preferred by using a direct sowing drill. It should be ensured that plant varieties resistant to drought and salinity are developed. In order to meet the water needs of the increasing population sufficiently, water basins should not be occupied with settlements and industrial facilities, water resources should not be polluted, clean water resources and pastures and forests that serve as natural dams should be increased rather than reduced.

Today, unfortunately, many societies are faced with water scarcity and with the expected population growth, the number of people experiencing water scarcity will gradually increase. In this case, the only and consistent way to continue to provide water supply and to protect existing resources is to recover and reuse wastewater.

Conclusion and Recommendations

Water is extremely important for the continuation of life. Water is life. Therefore, every decision and every step to be taken on water is vital. It is extremely important. In our opinion, man is at the center of nature. However, we cannot talk about a situation such as the separation of man and nature. If a person possesses ethical and moral values, values other living things and acts in a way that respects their right to life, he can have a livable environment. As a matter of fact, we, as humans, constitute the largest pollutant group in the world. The places that are most heavily affected by pollution are the places and resources that everyone uses in common. Considering the limited and limited water resources in the world and the state of risk it is in, evaluating it as a complete medium may lead to undesirable results. Water is an essential substance not only for humans but for all living things. The demand for water, whose usage areas are expanding with the change of living conditions, is increasing day by day. However,

water resources are in danger of decreasing due to climate change, global warming, misuse and pollutants. Wealthy people of developed or underdeveloped countries do not know or calculate the amount of water they consume in their homes or how much they pay for it; poor people pay very high bills for water that is already interrupted. People with low income have to pay the price of the wrong policies developed by economists who think that water scarcity or waste can be overcome by repricing water. The high water bills for domestic use and the taxes imposed on them prevent the people in need of protection from accessing water. In addition, due to the insufficient cleanliness of mains water lately, more and more people get their water needs from bottled water. The public, who cannot afford the utility water bill, cannot be expected to meet the cost of bottled and sold water. This situation means the violation of the right to life of those whose economic conditions are not suitable. The importance of water used by the rich to irrigate the flowers they grow to wash their cars or to enhance the beauty of their home's surroundings is more meaningful to the poor.

Water, soil and air, which are the basic components of the earth, constitute the basic components that ensure the continuity of life. Using and protecting the natural composition of soil, water and air without disturbing it is an absolute necessity for sustainable living and natural environment. In addition, for a sustainable natural environment, economic decisions and natural environment decisions should be evaluated together and together in accordance with the purpose of sustainable development. As a matter of fact, in order to protect the natural environment and transfer this value to future generations in the same way, all the elements that make up the natural environment should be considered as an inseparable whole, and the perception and awareness that the negative effects that may occur in any of them will affect the other elements in sequence. Although the most important role in the protection of water resources belongs to public and private institutions that provide water, education also has an important role. Environmental awareness trainings, especially at a young age, can reach larger audiences with the participation of their parents as well as children. Factors such as technological developments, economic growth and welfare level, demographic changes, differences in nutrition and social and cultural values are thought to affect water use habits. Since ensuring the sustainability of water and resources is very important for life, benefiting from water resources in various fields should be seamlessly sustainable in the future as in the past and today. For this, monitoring and evaluation studies should not be limited, improvement projects should be implemented.

As a result, it is absolutely necessary to use and protect the natural composition of soil, water and air, which are necessary for the continuation of life, for sustainable living and natural environment. Therefore, it is necessary to use, protect and plan natural resources in a sustainable way. With the conscious use of water, we can prevent

the pollution and depletion of our water resources by taking simple measures without impairing our quality of life. We must act in the awareness that the lives of future generations are in our hands. The prerequisite for this is to leave potable water and a livable environment to future generations.

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Conflicts of interest

Authors declare no conflict of interest exists.

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