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Effect of Increasing Economic Activities on Potable Water Availability in India

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Abstract

The present paper tries to highlight how India being a water available country in 1951, today has become a water-stressed country because of growing economic activities of our exponentially growing population and also because of inefficiencies in our economic activities of production and consumption. A country will be water-stressed if its annual per capita availability of water is less than 1,700billion cubic metres(BCM's),when the annual per capita availability of water becomes less than 1,000 BCM's, the country will be termed as water-scarce. From 5,177 BCM's in 1951, the per capita availability of water has decreased to just 1,545 BCM's.The inefficiencies in all the uses of groundwater and non-utilisation of rain water is creating serious situation of drinking-water crisis in many parts of our country.The technological improvements and the steps taken by the Government like Jal Shakti Abhiyan are needed to cope with this emerging danger. In addition to this, the public at large is to be sensitized as to this hazard and involved in this Himalayan task of replenishment and environmental conservation.

Keywords: Economic Activities, BCM, Scarcity, Economic Development, Environmental Hazard, Water-Stressed.

Introduction

Environment means the biological and non-biological things that surround and affect organisms.It includes water, air, land and material things and their inter actions amongst them selves and with the living organisms. There are four basic functions which the environment provides for supporting the economic activities on this planet. These are life-support,supply of natural resources,absorption of waste products and supply of amenity services[A. P. Thirlwall]. Environment provides biological, chemical and physical system which includes the atmosphere, river systems, the fertility of soil and the diversity of plants and animals without which the human life on this planet cannot exist.Environment also provides various types of raw materials and energy for the economic production and the consumption by households. It absorbs the waste products of economic activities of business and household activities and it also provide samenities like natural beauty and space.

Today every country tries to have economic development for its people as achieved by todays advanced countries.Economic development means improvement in the basic needs of the individuals. Economic development will occur when there is a great sense of self-esteem for the country and its individuals and when material advancement expands people's entitlements and capabilities [A. P. Thirlwall]. It means the changes in the state of the economy in which economic and social structures change in such a way that everyone's well-being in the society increases with increase in the economic growth of the economy. There is reduction in poverty, unemployment and unequal distribution of income and assets and increase in the health and the education facilities leading to a greater degree of freedom for everyone in the society to achieve his or her potential.

Aim of study

1. To find the status of drinking water crisis in India
2. Secondly, the study tries to find the reasons for water crisis in India
3. Further, the study tries to find the solutions of the problem of water crisis in India

Increasing Demand for Environmental Scarce Resources

Up to 1900 the world population growth was slow and stable but after 1930 with the growth of technological advancement the world

population expanded exponentially.In 1800,the world population was just 1 billion.It just took 130 years to reach 2 billion mark in 1930, 45 years to reach 4 billion in 1975, and just 36 years to reach 7 billion in 2011.Now according to UN report the world population will increase to 11.21 billion by 2100.Our country, India, with a population of about 1.35 billion is now the second most populous country in the world.We are now 18% of world population with just 2.4 % of the world geographical area.In near future, in 2024 it is expected that our population will be more than China's population and we will be the world's most populous country. With increasing population and technological advancement, the human economic activities are exerting greater pressure on the renewable and non-renewable resources of the environment.One of these resources is potable water.In this paper it is highlighted how India being water available country in 1951, today, has become a water-stressed country. A country will be water-stressed country if per capita availability of water is less than 1,700 billion cubic metres (BCM's). Further, if per capita availability of water is less than 1,000 BCM's, the country will be called as water-scarce country. From 5,177 BCM'sin 1951, the per capita availability of water has decreased to just 1,545 BCM's. In the following passages the causes and reasons of this depletion and dissipation have been analysed.

Non-utilisation of Rainwater

One of the main reasons for the scarcity of potable/drinking water in India is non-utilisation of rainwater.Every year our country faces flood situations in many parts of the country but water is drained away into the Arabian Sea and the Bay of Bengal by river systems because of non-utilisation of rain water. India receives, on an average, 4000 billion cubic metres of rainwater every year.According to Central Water Commission, India's annual requirement is 3000 BCM's,yet only one-fourth of the rainfall is utilised in our country. Hence three fourths of rainfall water are wasted away.As per the report of the National Commission on Integrated Water Resources Development report, 1,123 BCM's of water is used in this country which includes 690 BCM's of surface water and 433BCM's of replenishable groundwater.

Excessive and Inefficient Utilisation of Groundwater in Irrigation and Domestic Uses

In our country, irrigation is the main consumer of groundwater which is the main source of drinking water also. Irrigation uses about 80% of the water drawn from the different aquifers of this country.According to World Bank report, 60% of the water used in the irrigation in our country is drawn from the ground.According to a report, the irrigation efficiency in India is just 40% which leadsto the fact that 60% of water is wasted away [Prabhas K. Datta]and hence 48% of ground-water is wasted in the irrigation process.These facts which reveal that absence of proper and optimal utilisation of rainwater, and excessive and inefficient use of groundwater for the crops in many parts of India are putting pressure on availability of ground-water which is the main source of drinking water in India.Between 2003 and 2017, 12 new blocks have been added to the existing list of the dark zone in our small state of Haryana because of excess use of groundwater [Ramlal Kondal], which is the result of virtually free power and lack of effective management.In 1966, when the state of Haryana was created, paddy cultivation was on 1.92 lakh hectares which has now increased to14.22 lakh hectares during the last 50 years. An acre of paddy is required to be flooded around 26 times which leads to the conclusion that 5,389 litres of water are required for every kilogram of rice produced [RamlalKondal].

In India, water from sources other than ground-water is to be purified before it is used for drinking purpose.Of the total groundwater extracted from the different aquifers of India, just 8% of the water is used for drinking purposes.In our country, 80 per cent of water used in our houses is wasted away as sewage water [Prabhas K. Datta]. In the villages of Haryana, where groundwater is the main source of water for domestic uses,one will come across submersible tube-wells after every 2 to 3 houses. The groundwater drawn from these submersibles,in excess of ideal daily use,gets drained through the faulty drainage-systems leading to the total filling up, silting and contamination of all the ponds and other water structures in every part of the villages. In our country there is no facility available to treat and re-use this house hold waste-water.

Excessive Use Ground Water in The Business of Bottled Water

The remaining 12% of the groundwater is used in the industries where it is used as coolant, solvent and cleansing agent [Prabhas K. Datta].The business of bottled water fast growing in India.It is estimated that, on an average, a single bottler, that is, one single plant of the packed drinking water, draws between 5000 to 20000 litres of groundwater every hour [Prabhas K. Datta].The efficiency of water used in this business is about 65%, leading to a straightaway 35% wastage of the water.Not only,the business of bottled water has now become one of the fastest growing businesses in our country,but also in the process of purification of water at homes and offices etc.,in which reverse osmosis process is used, is growing in our country.In the latter case, that is in the process of water purification about four litres of water is required to get one litre of purified water, thus wasting about three fourths of our scarce water [Prabhas K. Datta]. Besides this, in industries like soft drinks too, there is excessive use or rather exploitation of groundwater. The Pepsi Company was extracting groundwater everyday more than 6 lac litres for its plant in Kerala. This was the time when the Kerala State was facing drinking water crisis [Prabhas K. Datta].Thus, this water packaging business is hazardous waste fulness of potable groundwater.

The inefficiencies in all the uses of groundwater and non-utilisation of rainfall water is creating serious situation of drinking-water crisisin many parts of our country. Considering the growing situation of drinking-water crisis in India, the

Government of India has last year launched the Jal Shakti Abhiyan for water conservation and water security.It was a campaign which involved the citizens' participation. The focus of this Jal Shakti Abhiyan was water conservation and rainwater harvesting, renovation of traditional and other water-bodies,the re-use of water and recharging of structures,watershed development and intensive afforestation.It was run in two phases: one during the monsoonsfrom 1st July to 15th September and other from 1stOctober to 30th November for the retreating monsoon in the northeast.The Jal Shakti Abhiyan covered 1592 stressed blocks in 256 districts of our country.The research studies and the steps taken by the Government cannot cope with this emerging danger if the public at large is not sensitized as to this hazard and involved in this Himalayan task of replenishment and environmental conservation.

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