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A Geographical Study of the Effects of the Water Crisis in India

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Abstract
At present, a large part of this limited water body has become polluted, as a result of which the problem of drinking water has arisen. The proportion in which water pollution is increasing, if this increase continues like this, then the day is not far when the next world war will be fought for water. This situation of non-availability of water is called water crisis. Scientists say that by the year 2025, two-thirds of the world's population facing severe water problems will be forced to live in other countries. There are many reasons for water crisis. There are many sources of water on the earth such as rain, rivers, lakes, puddles, springs, underground sources etc. Due to excessive use of underground water for irrigation and other works in the last few years, the level of underground water has declined. Water obtained from all sources is not useful for humans. The water of rivers is getting polluted due to industrialization, due to these reasons the problem of drinking water has arisen in the human world.

I. Introduction :-

Without water, neither human life is possible nor can he perform any work. Water is the basic need of human. Although more than 70% of the earth's surface is filled with water, but the water of most of these parts is not saline or drinkable. Only 0.6% of the total water on earth is available in the form of soft water for human use. The government has announced an ambitious plan. Under which a target has been set to provide piped water to all the rural houses of the country by the year 2024. While this is a laudable goal, it is not clear how exactly the government intends to achieve this very difficult target in the present circumstances. The acute shortage of water in many cities like Chennai in India has once again drawn people's attention towards the water crisis in our country. Although experts, environmentalists and voluntary organizations have been telling loudly about the impending water crisis in India for a long time. But, no one paid heed to his warning until the water in the taps of the big cities of the country dried up. The fact is that in June last year, the government's organization Niti Aayog released a report warning about the coming water crisis, which was named - "Composite Water Management Index (CWMI), A National Tool for Water Measurement, Management and Improvement." In this report, NITI Aayog had accepted that India is facing the worst water crisis in its history. And about 600 million people of the country (this population is equal to the total population of Latin America and Caribbean islands) i.e. 45 percent of the population are facing acute water shortage. It was further warned in this report that by the year 2020, ground water (which is an important source of water in more or less all the cities of India) will end in 21 important cities of the country. By the year 2030, drinking water will not be available to 40 percent of the country's population and by 2050, there will be a loss of 6 percent of the country's GDP due to water crisis. Exactly one year after the release of this report, the government has now announced an ambitious plan to provide piped clean drinking water to all rural households in the country by 2024. However, this goal is commendable. But, the government has not made it clear that how it is going to achieve this goal.

Water crisis in India: -

To deal with the water problem in India, we must first understand the basic reason for the current water crisis. The current water crisis is not delayed monsoon or lack of rain, as India's media is claiming. The reality is that the current water crisis is standing in front of us because of years of neglect by the government, promotion of wrong habits and misuse of the country's water resources. To deal with the water problem in India, we must first understand the basic reason for the current water crisis. The current water crisis is not delayed monsoon or lack of rain, as India's media is claiming. The reality is that the current water crisis is standing in front of us because of years of neglect by the government, promotion of wrong habits and misuse of the country's water resources. We also have to understand that due to the climate change of the earth, our country may have to face a bigger water crisis in the coming decades. According to a World Bank report, an increase of only 2 percent in the average temperature of the Earth before the industrialization of the world will create a huge gap between the

demand and supply of water. This can pose a big threat to India's food security. However, in recent decades in India, the demand for water is being seen increasing in every sector. Then whether it is agriculture, factory or domestic use. Today, 90 percent of fresh water in our country is extracted for irrigation purposes. That is why if we have to work seriously on any plan regarding water management in our country, then first of all we have to consider the management of water used in agriculture. In India, the maximum groundwater is extracted for irrigation in the world. Countries like China and America are behind us. (see Table 1). It is clear from this table that China (6.9 million hectares of irrigated land) where there is more land for irrigation than India (6.7 million hectares of irrigated land), there too the exploitation of ground water for agriculture is less. That is, we waste a lot of water and use it unnecessarily. but it won't last long

Over the years, India has seen many changes in the source of water for irrigation. The share of canal irrigated area in the total irrigable land is continuously decreasing. In today's date, the share of land irrigated by ground water has increased to more than half of the total land. This misuse of ground water resources in the north-western regions of the country is the biggest reason for the water crisis in the country. In addition, in Punjab, Uttar Pradesh and Maharashtra, crops that require a lot of irrigation, such as paddy and sugarcane, are sown on a large scale. Rice is the most important grain eaten in our country. It takes 3500 liters of water to grow one kg of rice.

Punjab is completely dependent on ground water for rice cultivation. However, in terms of productivity from land, Punjab's performance is very good. But, it is far behind the northeastern states in terms of better use of water.

The cultivation of the country's main crops — wheat, rice and sugarcane — consumes a lot of water. Most of the rice is exported from our country. It takes 3500 liters of water to produce every 1 kg of rice. Punjab is the third largest producer of rice. Punjab is completely dependent on ground water for rice cultivation. However, in terms of productivity from land, Punjab's performance is very good. But, it is far behind the northeastern states in terms of better use of water. Punjab uses two to three times more water to produce one kilo of rice than Bihar and West Bengal. Electricity is cheap in Punjab and the government also follows good policies to buy farmers' crops. In such a situation, rice cultivation becomes very beneficial for the farmers of Punjab. On the other hand, farmers of Bihar, West Bengal, Assam and Tripura do not get such facilities. Unfortunately, our water-scarce country is a huge exporter of rice. This means that we are actually exporting lakhs of liters of our precious water to other countries in the form of rice. This is the story of sugarcane crop, which demands a lot of water. Farmers of Maharashtra cultivate sugarcane on a large scale. And use ground water for its irrigation. Because they know that their sugarcane will be bought by the sugar mills of the state. On the other hand, Bihar, where the climate is most favorable for sugarcane cultivation, produces only 4 percent of the country's total sugarcane. That is why the state governments should encourage the cultivation of low water-consuming crops like pulses, millets and oilseeds. Especially in those areas where the ground water level is continuously falling. Rice cultivation should be done only in those areas where water is available in abundance. Apart from the wrong selection of crops for farming, there is also no proper use of water in farming. In India, the method of irrigation of crops by filling water in the fields is very common. In this way, a lot of water is wasted in irrigation. If we want to prevent doomsday from coming in our country i.e. that day when both food and water will run out in the country, then there is a dire need to implement water conservation steps in our country.

facing.

If it is less than 1,000 cubic meters, then it is believed that the country is facing water scarcity.
If it is less than 500 cubic meters, then it is believed that the country is facing absolute water scarcity.

Status of Water Management in India

Current Status: India is the largest extracter of ground water in the world. This amount is more than the combined extraction of the world's second and third largest groundwater extractors (China and the United States).
However, in India only 8% of the extracted groundwater is used as drinking water.
80% of it is used for irrigation
The remaining 12% is used by industries.
NITI Aayog's Composite Water Management Index has warned about the looming water crisis in India where more than 600 million people of the country are facing severe water scarcity.
It has also been estimated that by the year 2030, the country's water demand will double as compared to the available supply.

Constitutional provision :-
Fundamental Right: Water is a fundamental requirement for human existence and is a part of the Right to Life enshrined in Article 21 of the Constitution of India.
Entry 56 of the Union List: The Central Government may regulate and develop inter-State rivers and river valleys to such extent as may be determined by Parliament to be appropriate in the larger public interest.
Entry 17 of the State List: It deals with water supply, irrigation, canals, drainage, embankments, water storage and water power.
Article 262: It states that in case of disputes relating to water—
Parliament may, by law, provide for the adjudication of any dispute or complaint in relation to the use, distribution or control of the waters of, or in, any inter-State rivers or river valleys.
Parliament may, by law, provide that the Supreme Court or any other court shall not exercise jurisdiction in respect of any such specified dispute or complaint.

Legal provision :-
Inter-State Water Disputes Act, 1956: The Inter-State Water Disputes Act enables states to nominate the central government to set up an Advisory River Board to resolve issues in inter-state cooperation. make capable.
The Water (Prevention and Control of Pollution) Act, 1974: It sets up an institutional framework for the prevention and control of water pollution by maintaining standards of water quality.
The Central Pollution Control Board (CPCB) is a statutory organization constituted in September, 1974 under the Water (Prevention and Control of Pollution) Act, 1974.

Major challenges related to water management in India : -
Potential for rural-urban conflict: Rapid urbanization resulting in rapid expansion of cities and large influx of migrants from rural areas has increased the per capita use of water in cities. In this scenario, water is being transferred from rural water bodies to urban areas to meet the water shortage.
Given the decline in water table in urban areas, it is likely that in future cities will be heavily dependent on rural areas for raw water supply, which may lead to rural-urban conflict.
River-water disputes: Since most of India's rivers flow through two or more states, there have been disputes between different states regarding the use, distribution and control of their waters.
Some of the major interstate river water disputes are:
Krishna River - Maharashtra, Andhra Pradesh, Karnataka, Telangana
Kaveri River - Kerala, Karnataka, Tamil Nadu and Puducherry
Periyar River - Tamil Nadu, Kerala
Narmada River – Madhya Pradesh, Gujarat, Maharashtra, Rajasthan
India has been facing river water disputes not only between its states but also with its neighboring countries. for example:
Brahmaputra River - India, China
Teesta River - India, Bangladesh
Inefficient Wastewater Management: Inefficient use of waste water in a scenario of extreme water-stress is preventing India from making optimum use of its water resources. In cities, this water is mainly found in the form of 'greywater'.
According to a recent report (March 2021) published by the Central Pollution Control Board, India's current water treatment capacity is 27.3% and sewage treatment capacity is 18.6% (with an additional 5.2% capacity being added).
But still most of the sewage treatment plants are not working at maximum capacity and are not conforming to the prescribed standards.
Food security risk: Water is essential for crop and livestock production. Water is extensively used for irrigation in agriculture and water is also a major source of domestic consumption. The combination of rapidly depleting groundwater levels and inefficient river water management can lead to food insecurity.
The resulting effects of water and food shortages can make basic livelihoods vulnerable and exacerbate social tensions.
Increasing water pollution: A large amount of domestic, industrial and mining wastes are discharged into the water bodies, which can lead to water borne diseases. In addition, water pollution can lead to eutrophication, which can seriously affect aquatic ecosystems.
Over-exploitation of groundwater: According to the latest study by the Central Ground Water Board, 256 out of 700 districts in India have reported critical or over-exploited groundwater levels.
Due to over-dependency and continuous consumption, the pressure on ground water resources is increasing and as a result, wells, puddles, ponds etc. are drying up. Due to this the water crisis is getting deeper.
Current Government Initiatives Related to Water Management

National Water Policy, 2012
Prime Minister Agricultural Irrigation Scheme
Jalshakti Abhiyan - 'Catch the Rain' campaign
Atal Ground Water Scheme

II. Conclusion :-

Sustainable Ground Water Management: There is a need to shape an appropriate mechanism and rural-urban integrated projects for artificial recharge of ground water and rain water harvesting at household level, conjunctive use of surface water and ground water and regulation of reservoirs. In addition, there is also a need to improve water infrastructure (wells, dams, storage tanks, pipelines, etc.), which will not only reduce the wastage of clean water, but also reduce the number of people who struggle to get clean water every day. Therefore, if we want to prevent the doomsday from coming in our country i.e. that day when both food and water will run out in the country, then there is a dire need to implement water conservation steps in our country. First of all, the cultivation of crops like rice and sugarcane, which require more irrigation, should be stopped in north-west and central India, which are facing acute water shortage. Farmers should be given various incentives to grow other crops. So that they grow crops like millet, which require less irrigation and are not affected by climate change. Apart from this, methods like drip irrigation should be promoted for irrigation, in which water is sprinkled on the crops, not the fields are filled to the brim with water. Drip irrigation should be promoted rapidly with government cooperation. The third step can be that there is a need to promote irrigation under the ground, new methods of sowing and new methods of farming like precision farming. This will reduce the use of water in agriculture.

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