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Water Crisis in India – an Alarming Problem

KEYWORDS

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Introduction

In India, population is growing as if a woman doesn't need 9 months to give birth to an infant. Every Second, a new Indian takes birth, but he/she doesn't know that what he is going to see in future and especially about Water. If this is the level of Water Crisis now, then what will be in future with global warming and pollution ? .Is our future generation is so unlucky that they will not get entity called water without which no one can survive. In every city, no matter whether near a river or far from a river, Water level has decreased horribly. Even in metro cities, rich people are not getting water regularly. In Gurgaon, Delhi, Noida, Hyderabad and even in tier-2 and 3 cites water is main problem and without water power crisis also exists. If we don't wake up now, it will be too late. Remember one thing that "we can't generate water; It can come only from Cloud". Water is one of the most crucial elements in our national developmental planning for the 21st century. The proper management of our limited water resources will be essential to ensure food security for our growing population and to eliminate poverty. It will be essential also to avoid the growing conflicts and the possibility of social unrest in the country in future due to water scarcity.

Water Scarcity

Simply put, water scarcity is either the lack of enough water (quantity) or lack of access to safe water (quality). It's hard for most of us to imagine that clean, safe water is not something that can be taken for granted. But, in the developing world, finding a reliable source of safe water is often time consuming and expensive. This is known as economic scarcity. Water can be found it simply requires more resources to do it. In other areas, the lack of water is a more profound problem. There simply isn't enough. That is known as physical scarcity. The problem of water scarcity is a growing one. As more people put ever increasing demands on limited supplies, the cost and effort to build or even maintain access to water will increase. And water's importance to political and social stability will only grow with the crisis.

In India, more than 90 per cent of the groundwater is consumed for agriculture. Of this a large percentage of water is used on that land which requires constant irrigation. According to the Ministry of Water Resources, industrial water use in India stands at about 50 billion cubic meters or nearly 6 per cent of total freshwater abstraction. This demand is expected to increase dramatically in the next decade. This water is also primarily drawn from the land. However, we Indians are not still ready to accept the reality of depleting groundwater reserves. This condition has caused a major water crisis.

Population and Water Availability

Year	Population(Million)	Per Capita Average Annual Availability(m^3/year)
2001	1029(2001 census)	1816
2011	1210(2011 census)	1545
2025	1394(Projected)	1340
2050	1640(Projected)	1140

Source: GOI, Ministry of Water Resource

A per capita availability of less than 1700 cubic metres(m^3) is termed as a water-stressed condition while per capita availability below 1000m^3 is termed as a water scarcity condition. The per capita water availability figures given above are the national average figures while the position is quite different in the individual river basins.

Water Crisis in India

According to the UNICEF report on water, there will be constant competition over water, between urban dwellers, farmers and industrialists. Even the World Bank report shows alarming results. These reports show that in 1997, the available underground water was approximately 600 cubic kilometers per annum and the demand was also almost equal to the availability. But by 2050 the level of ground water will be below 100 cubic kilometers per annum mark and the demand will rise to 1200 cubic kilometers per annum. Further, in the same year, the level of surface water was approximately 300 cubic kilometers per annum which would fall to 50 cubic kilometers per annum by 2050. In 2006 between the domestic, agricultural, and industrial sectors, India used approximately 829 billion cubic meters of water every year, which is approximately the size of Lake Erie. By 2050 demand is expected to double and consequently exceed the 1.4 trillion cubic meters of supply.

Water Resources of India- an Overview of statistical data India's Water Budget

	Analysis based on MoWR	Analysis based on MoWR Estimates based on worldwide comparison
	(Values in BCM)	
Annual rainfall	3,840	3,840
Evapotranspiration	3,840 – (1,869+432) =1539(40%)	3,8402,500(65%) World –wide comparison
Surface runoff	1,869 (48.7%)	Not used in estimate
Groundwater recharge	432(11.3%)	Not used in estimate
Available water	2,301(60%)	1,340 (35%)
Utilizable water	1,123(48.8% of 2,301)	654(48.8% of 1,340)
Current Water use	634	634
Remarks	Current use (634) well below 1,123	Current use (634) well below 654

Source: GOI,Ministry of Water Resource

Overall Water Demand (In Billion Cubic Meters)

Year	Assessment(As per existing practices of water use)	Assessment (with efficient practices of water use)
2010	808	710
2025	1093	843
2050	1447	1180

Source: Ministry of Water Resource

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Projected water demand in (BCM) for various sectors

Sector	Standing Sub –committee Report of MoWR			NCIWRD		
Year	2010	2025	2050	2010	2025	2050
Irrigation	688	910	1072	557	611	807
Drinking Water	56	73	102	43	62	111
Industry	12	23	63	37	67	81
Energy	5	15	130	19	33	70
Others	52	72	80	54	70	111
Total	813	1093	1447	710	843	1180

Source: Assessed by NCIWRD(National Commission on Integrated Water Resource

Development) & Ministry of Water Resources(MoWR)
Water Crisis- Root Cause of Many Problems

This crisis is not just the disturbance in the demand and supply curve but is also about mismanagement of water resources. India's water crisis is a man-made problem. One of the major problems is water pollution. A combination of sewage disposal, industrial effluents, and chemicals from farm runoffs, arsenic and fluoride has rendered India's rivers unfit for drinking, irrigation, and even industrial purposes. Also, the over-usage of ground water due to the unavailability of sufficient water for irrigation has led to a tremendous decrease in the level of ground water. Also, due to global warming, rainfalls have become erratic and unpredictable because of which the agricultural sector has been affected seriously. Its time to think and need to take rational steps to manage water in India before it becomes an international crisis, as this will affect the nation's economy and will also lead to various water-borne diseases. At any one time, half of the world's hospital beds are occupied by patients suffering from water-borne diseases.

- Over one-third of the world's population has no access to sanitation facilities.
- In developing countries, about 80% of illnesses are linked to poor water and sanitation conditions.
- 1 out of every 4 deaths under the age of 5 worldwide is due to a water-related disease.
- In developing countries, it is common for water collectors, usually women and girls, to have to walk several kilometers every day to fetch water. Once filled, pots and jerry cans weigh as much as 20kg (44lbs).

There would also be a sharp decline in agricultural production, which will negate all of the previous efforts at food security. India will become a net importer of grain, which will have a huge effect on global food prices, as well as the global supply of food. A rise in food prices will aggravate poverty because people will have to spend larger portions of their income on food. In addition to devastating the agricultural sector of India's economy, the water crisis will have a big effect on India's industrial sector, possibly stagnating many industries. India has the power to avoid this dark future if people take action immediately. Even though the rate of urbanization in India is among the lowest in the world, the nation has more than 250 million city-dwellers. Experts predict that this number will rise even further, and by 2020, about 50 per cent of India's population will be living in cities. This is going to put further pressure on the already strained centralised water supply systems of urban areas. The urban water supply and sanitation sector in the country is suffering from inadequate levels of service, increasing demand-supply gap, poor sanity conditions, deteriorating financial and technical performance.

Water Demand Management - Basic Recommendations

1. Rain water harvesting is there, but no one is implementing it, and none of the government is forcing to implement it. This technique can solve half of our water related problems.
2. Proper maintenance of Resources like tanks and pipelines. In Mumbai 20 % of drinkable water gets wasted every year due to bad pipelines and leakages.
3. Patronage of our lakes, Dams and rivers. Number of lakes in India has reduced to 40 % as it were 50 years back. Without storage medium how can you store water?
4. Awareness among people about water use. We should not use Drinking water to clean our cars and other things. And we should not allow others to waste water as if it will never end.
5. The innovation of new techniques resting on a strong science and technology base will be needed to eliminate the pollution of surface and ground water resources, to improve water quality and to step up the recycling and re-use of water.
6. Last but not the least, main cause is population unless we control our population we can't solve any of our problem.

Conclusion

In place of the current slogan of Integrated Water Resource Management, we should look at Responsible, Harmonious, Just and Wise Use of Water. Ideally, a review at this stage should take climate change into account, but while we know that climate change may mean increased precipitation in some areas, increased drought in some others, and increased variability of precipitation, we do not yet know in detail precisely what will happen, when and where. However, an overhaul of the NWP (National Water Policy) is necessary even without reference to the issue of climate change. India's water crisis is often attribute to lack of government planning, increased corporate privitaization, industrial and human waste and government corruption. In addition, water scarcity in India is expected to worsen as the overall population is expected to increase to 1.6 billion by year 2050. To that end, global water scarcity is expected to become a leading cause of national political conflict in the future, and the prognosis for India is no different. India needs solutions now.

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