

IMMINENT WATER CRISIS IN INDIA



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*'anyone who can solve the problems of water will be worthy of
two nobel prizes - one for peace and one for science'*

John.F.Kennedy



Imminent Water Crisis in India

Introduction

More than two billion people worldwide live in regions facing water scarcity and in India this is a particularly acute crisis. Millions of Indians currently lack access to clean drinking water, and the situation is only getting worse. India's demand for water is growing at an alarming rate. India currently has the world's second largest population, which is expected to overtake China's by 2050 when it reaches a staggering 1.6 billion, putting increasing strain on water resources as the number of people grows.

Since independence India's primary goals have been economic growth and food security, completely disregarding water conservation. This has caused serious ramifications being felt today, as many citizens still operate under these principles. Unlike many other developing countries, especially those with acute water scarcity issues such as China, Indian law has virtually no legislation on groundwater. Anyone can extract water: homeowner, farmer or industry as long as the water lies underneath their plot of land.

The needs of India, are unique. Nowhere else in the world does population growth and poverty play such a large role in affecting water resource issues. This reflects the importance of providing for basic human needs to ensure that the livelihoods of all can be improved. In the case of rural India, poverty and reduced access to safe water resources has limited the ability of the poor to improve their situation, which has only served to perpetuate the poverty cycle especially among rural populations and women.

A rapidly growing economy and a large agricultural sector stretch India's supply of water even thinner. Meanwhile, India's supply of water is rapidly dwindling due primarily to mismanagement of water resources, although over-pumping and pollution are also significant contributors. Climate change is expected to exacerbate the problem by causing erratic and unpredictable weather, which could drastically diminish the supply of water coming from rainfall and glaciers. As demand for drinkable water starts to outstrip supply by increasing amounts in coming years, India will face a slew of subsequent problems, such as food shortages, intrastate, and international conflict.

India's water crisis is predominantly a man made problem. India's climate is not particularly dry, nor is it lacking in rivers and groundwater. Extremely poor management, unclear laws, government corruption, and industrial and human waste have caused this water supply crunch and rendered what water is available practically useless due to the huge quantity of pollution. In managing water resources, the Indian government must balance competing demands between urban and rural, rich and poor, the economy and the environment.

Competition for Water

It has been said that the next wars will be fought over water. Increasing competition for dwindling water resources will continue to pose a greater threat to national and international security. Already, conflicts have arisen between a number of South Asian countries and also between neighbouring states within these countries. But, competition for water occurs not only between neighbouring countries or states, but also between different user groups within a given watershed. Already, the urban, agricultural and industrial demands for water are greater than the available supplies.

Context

The central government in India also lacks the ability to store and deliver drinkable water to its citizens, especially as supply shrinks. There is currently a water storage crunch, because means for storage, such as temple tanks and steep wells, have fallen apart. China is able to store 5 times as much water per person as India, making it blatantly clear how poor India's water management is. The government claims that 9 out of 10 people have access to water. Yet, even if this were factual, it disregards the fact that almost all of that water is too contaminated to use. None of the 35 Indian cities with a population of more than one million distribute water for more than a few hours per day. The water situation in the capital, New Delhi, is typical of most cities in India, in that New Delhi does not lack water, merely good infrastructure.

Furthermore there is an inadequate storage capacity. Developed, arid countries (United States, Australia) have built over 5000 cubic metres of water storage per capita. Middle-income countries like South Africa, Mexico, Morocco and China can store about 1000 cubic metres per capita. India's dams can store only 200 cubic metres per person. India can store only about 30 days of rainfall, compared to 900 days in major river basins in arid areas of developed countries.

Tamil Nadu

Located in southern India, the state of Tamil Nadu has a population of about 58 million, or just over 6 per cent of India's total. Although Tamil Nadu is one of India's most industrialized states, its economy depends largely on agriculture. About 60 per cent of its population is rural and about 37 per cent of the state's population remains below the poverty line.

Tamil Nadu has achieved dramatic improvements in social indicators in recent years, and its government is committed to achieving even greater improvements in the health of the state's population by increasing the effectiveness of health services. In this regard, it is attempting to provide universal year-round access to safe drinking water because it recognises that limited or no access to safe water increases the risks of serious waterborne diseases such as cholera, typhoid fever, dysentery, and jaundice, as well as exposure to vector-borne diseases such as malaria and elephantiasis.

A recent study suggests that less than 50 per cent of the state's rural inhabitants has access to adequate safe drinking water throughout the year. Facing severe water scarcity problems and rising demands for water from agricultural, industrial, and domestic users, Tamil Nadu finds that supplying safe, protected drinking water is becoming ever more difficult.

Water Consumption in India

Average water consumption around the world is about 53 litres per head per day. India expects to soon have only about 20 litres available per head per day. There has been extensive droughts lasting a long time and now with global climate change, things will become even more difficult. The glaciers are receding from the Himalayan Mountains. They are about one fifth the size they were about 60 years ago

Pollution

Given that India does not regulate water usage, it should come as no surprise that there is also little regulation on pollution and even less enforcement of what regulations do exist. A combination of sewage disposal, industrial effluents, chemicals from farm runoffs, arsenic and fluoride has rendered India's rivers unfit for drinking, irrigation, and even industrial purposes.

Every river in India is polluted to some degree. The water quality in underground wells violates the desired levels of dissolved oxygen and coliform, the presence of which is one measure of filth, in addition to having high concentrations of toxic metals, fluoride, and nitrates. India's rivers also have high fluoride content, beyond the permissible limit.. The polluted water then seeps into the groundwater and contaminates agricultural products when used for irrigation. Over 21% of transmissible diseases in India are related to unsafe water. Millions of the poorest are affected by preventable diseases caused by inadequate water supply and sanitation

The key issues

According to a recent report on Water in India, the various issues related to Water Management in India are as follows:

- **River Pollution:** All of India's fourteen major river systems are heavily polluted, mostly from the 50 million cubic metres of untreated sewage discharged into them each year
- **Water Conflicts:** Severe water shortages have already led to a growing number of conflicts across the country. Nearly 90% of India's territory is drained by inter-state rivers. The lack of clear allocation rules and uncertainty about water sharing has led to major disputes between states.
- **Ground Water Pollution:** The primary reasons are industrial pollution and extensive farming leading to agrochemical pollution of the groundwater. In case of industries, it is due to lack of treatment of effluents that are pumped into rivers and streams leading to groundwater pollution.
- **Poor management, crumbling infrastructure and depleting resources:** By 2020, India's demand for water will exceed all sources of supply.
- **Corruption:** About one in 10 households paid bribes to regularise ater connection

The Plight of Women

In rural India, women play a central role in the provision, management and safeguarding of water resources More often than not, the ultimate victim of rural poverty is the female. In most cases, the women are classed as secondary level citizens. Within these communities women are extremely vulnerable, asset less and invisible on the socio-economic front. They do not have access to any form of financial credit and are denied rights to property. They are therefore engaged in even greater menial work than their spouses and are often engaged in subsistence occupations to eke out a meager living.

10 Facts on Women and Water

- Women and children fetch the majority of water for household uses in rural areas. Often this keeps them from attending school or working at a job.
- The average distance that women and children walk for water in India is six kilometres (3.7 miles).
- Women carry heavy loads of water (about 20 litres) on their heads in some locations. This causes severe damage to the neck and spine over time.
- Women make most household water and sanitation decisions, but they are rarely invited to be involved in planning or management of water and sanitation systems.
- Water projects that involve women in planning and management are proven more likely to succeed.
- In India, women's land rights are not recognised, and they are unable to access water for agricultural uses.
- On average, women work twice as long as men for unpaid work (housework, cleaning, cooking, washing, etc.) than men.
- Women are primary caretakers of the millions of children that fall ill each year from water-related illnesses. This reduces time spent working or on education.
- For mothers and pregnant women, an improved water supply and proper water storage is essential to protect lives and ensure good health.
- Women are underrepresented in water and sanitation sector posts with men having most jobs in this field

What we are doing

Kamla Foundation as part of one of its key objectives is supporting a programme in rural water supply, in line with its commitment to fighting rural poverty. The project is sourcing and delivering the provision of safe water to the poorest segments of rural society—the scheduled castes and tribes, which make up about 20 per cent of Tamil Nadu's population and represent the largest part of its agricultural work force. Concentrated in rural areas, Tamil Nadu's poor often have to rely on contaminated rivers or open wells for meagre water supplies. In cases of extreme scarcity, the state is currently supplying water by tank trucks to poorer villages at an extortionate cost.

Water management has become the primary concern in India today. In particular providing clean drinking water by installation of hand pumps is seen as essential for survival in rural areas where we operate. Our broader aim is to enhance the quality of life for the rural poor. This project aligns well with the Foundation's goals of assisting to reduce rural poverty and improve the health of its rural population.

Outcomes and Reasons for Success

By the end of 2015, some 25,000 villagers are expected to be benefiting from the installation of our hand pumps, 90 per cent of whom will be from scheduled castes and tribes. The project is helping beneficiaries to get safe, dependable water close to their doorsteps, thereby reducing the drudgery of hauling water from open wells and rivers. Village women report that it takes them half the time formerly needed for getting daily water supplies for their households, providing more time for more productive activities such as day labour or childcare.

Beneficiaries also tell of dramatic reduction in water-related diseases once the pumps go into operation. In addition, simple technology means that the pumps can be easily operated and maintained by local villagers. On completion of a hand pump Health Care Workers from the Panchayat Union Office will facilitate village wide meetings and provide information to local residents on the safe use of water, the need to avoid water stagnation around the pump, and the importance of hygiene in its vicinity.

The rural water supply component represents an effective marriage of initiatives between Kamla Foundation, local NGO's and locally elected village councils identifying rural hamlets that are in desperate need of improved water supplies. The villagers will then take ownership of and maintain the completed hand pumps. We will provide key technical expertise to locate the best sites, supervise construction, certify the water as satisfactory for drinking purposes, and provide a plan for future maintenance.

Some final thoughts.....

India is facing a looming water crisis that has implications not only for its 1.1 billion people, but for the entire globe. India's demand for water is growing even as it stretches its supplies. Water infrastructure is crumbling, preventing the government from being able to supply drinking water to its citizens. Pollution is rampant due to unfettered economic growth, poor waste management laws and practices.

Although many analysts believe that demand will outstrip supply by 2020, there is still hope for India. Water scarcity in India is predominantly a manmade problem; therefore if India makes significant changes in the way it thinks about water and manages its resources soon, it could ward off, or at least mollify, the impending crisis.

Indeed, India could become the stage for major international water wars because so many rivers that originate in India supply water to other countries. India has the power to avoid this dark future if people take action immediately: start conserving water, begin to harvest rainwater, treat human, agricultural, and industrial waste effectively, and regulate how much water can be drawn out of the ground.

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