

WATER SECTOR: REFORM & PERFORM

By Subhash Sethi, Chairman, SPML Infra Limited



India is facing an alarming water scarcity challenge. A large size of the population is deprived of clean drinking water facilities at their premises. The ever increasing demand of fresh water due to rapidly developing economy, industrializing and urbanizing society are faced with limited resource augmentation.

India is the host of approximately 18 percent of the world's population, holds only about 4 percent of global water resources. With just a fraction of world's fresh water, imagine the crisis that out of the very limited water availability, almost 80 percent of our surface water is contaminated. Nearly 60 percent of India's groundwater reserves are contaminated with biological, organic, and inorganic pollutants. Across India, the

groundwater that provides an invaluable buffer between monsoons is severely depleted and in danger of being irreversibly lost. This is perceived as a symptom of the larger problem that would affect efficient water management in a country aspiring to be an economic super power and the most populous on the planet in few years' time.

The Central Pollution Control Board (CPCB) has found that 18 major rivers in India are unfit for any domestic and industrial water use. The Niti Aayog has flagged the issue saying that the water situation in the country is reasonably stressful and around 100 million people will be affected by the shortage of groundwater in 21 Indian cities including the mega cities of Delhi, Bengaluru, Chennai and Hyderabad. They also highlighted



19 MLD Water Treatment Plant, Gagreen, Rajasthan

600 million people in India is facing severe to extreme water scarcity and the number will keep on increasing unless strong measures for water source augmentation is not taken rapidly.

that more than 600 million populations in India is facing severe to extreme water scarcity and the number will keep on increasing unless strong measures for replenishing of water sources is not taken instantaneously.

India, by extracting more groundwater way beyond the permissible limit has already reached a point where water supply disruptions may pose a difficult political and economic challenge. The country is also amongst the largest users of groundwater in the world. About 85 percent of rural drinking water needs, 65 percent of irrigation needs, 50 percent of urban drinking water and



500 MLD Water Pumping Station, Bangalore

industrial needs are fulfilled from the ground water sources.

With a vast geographical area in the country, water woes are prevalent in terms of supply as well as

distribution, which is a much bigger challenge. A huge part of the total population is living mostly in rural areas and on the periphery of cities and towns and are not connected to the piped water supply which forced them to mine groundwater



2074 Million Litre Raw Water Reservoir, Sindhanur, Karnataka



Bisalpur Jaipur Water Supply Pipeline

to survive. With the expansion of urban habitats and business hubs across cities in India, these emerging growth centres are putting tremendous pressure on both surface and ground water resources.

Extensive ground water extraction, unmonitored and unregulated, has caused India's water table to plunge to depths of unimaginable level. With over 230 billion cubic metre groundwater drawn out each year for irrigating agriculture lands in India, many parts of the country are experiencing rapid depletion of groundwater. The UNESCO World Water Development Report states that India is the largest extractor of groundwater in the world.

Depleting Groundwater

An earlier report of Central Ground Water Board (CGWB) suggests that nearly 5,900 wells in majority of districts in India experienced significant depletion in groundwater storage. While districts with significant decrease in groundwater are located in the Indo-Gangetic plain, northwest, and central regions, a few districts in Punjab also showing substantial decline in groundwater table. With depletion occurring at a rate of 91 cm per year, Punjab has been witnessing a steep decline in groundwater table since 1996. Even Delhi is becoming the epicentre of this fast-developing crisis.

Per capita water availability in India has fallen to

1,545 cubic metres in 2011 which may further reduce to 1486 cubic meters and 1367 cubic meters in the years 2021 and 2031 respectively. The average annual per capita water availability in the year 2001 was assessed as 1816 cubic meters from 5,177 cubic metres in 1950. Less than 1,700 cubic metres water availability is considered a water-stressed condition, whereas below 1,000 cubic metres is considered as a water scarcity condition and many districts in the country are coming closer to that in near future.

By 2030, the country's water demand is projected to be twice the available supply, implying severe water scarcity for hundreds of millions and an eventual loss of around 6 percent of the country's GDP.

Water Pollution

Quality of water is also a challenge. Muddy and contaminated, the diminished resource threatens the future of the citizens who depends upon it. India is currently ranked 120 among 122 countries in the global water quality index with more than 70 percent of overall water being contaminated.

The increasing contamination of water is a matter of great concern. This widespread problem of water pollution is threatening our health, economy and entire ecological system. Water pollution kills more people each year than war and all other forms of violence combined. UNESCO has

estimated that around 80 percent of wastewater flows back into the ecosystem without being treated or reused thus causing wide spread water pollution killing nearly 1.8 million people globally. It also suggested that every year nearly 1 billion people get sick due to unsafe water. In India alone, the death caused by the polluted water is very alarming and it is estimated that about 36,000 people were diagnosed with water-borne diseases every day.

Many urban and semi-urban areas are not connected with proper sewerage system resulting in wastewater being released into the environment without any form of treatment thus polluting ground and surface water. Municipal, industrial, medical and all other kind of waste is frequently being dumped into the rivers and other water bodies causing great harm and further limiting the availability of clean water sources.

Significant Strides

The NITI Aayog of India has highlighted an extremely critical condition of drinking water availability and water contamination and there is policy revisit by the concerned ministries revolving around the condition. Government of India has launched Jal Shakti Abhiyan, a five year time-bound campaign on a mission mode which is envisioned to improve water availability including groundwater conditions in the water stressed blocks of 256 districts covering 1593 blocks with

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a focus on water conservation and rain water harvesting. The officials' of central government along with technical officers from Ministry of Jal Shakti are deputed to visit water stressed districts and assess the condition and work in close collaboration with district level officials to undertake suitable interventions.

In India, water is a state subject and efforts to conserve and manage groundwater are primarily states' responsibility. It is encouraging that a number of states have done remarkable work like 'Mukhyamantri Jal Swavlamban Abhiyan' in Rajasthan, 'Jalyukt Shivar' in Maharashtra, 'Sujalam Sufalam Abhiyan' in Gujarat, 'Mission Kakatiya' in Telangana, 'Neeru Chettu' in Andhra Pradesh, 'Kapil Dhara' in Madhya Pradesh among others.

Government of India has initiated a scheme aimed at improving groundwater management over a period of 5 years called as Atal Bhujal Yojana, or AtalJal. This is a World Bank-funded scheme to improve ground water management through community participation with a budget outlay of Rs. 6,000 crore.

Then we have a long running government supported rural water infrastructure development for the construction of water harvesting and conservation works primarily through Mahatma Gandhi National Rural Employment Guarantee

The 2021–22 budget allocation for water sector reflects the seriousness of the government.

Scheme (MGNREGS) and Pradhan Mantri Krishi Sinchayee Yojana. The major water resource conservation and management programs taken up under these schemes included check dams, ponds, renovation of traditional water bodies, land development, embankment, field bunds, field channels, plantations, contour trenches etc. During the 5 years period in 2014–2019, 143 lakh hectares of land benefitted through these interventions thus improving the productivity of land and increasing water availability.

With Hon'ble Prime Minister taking personal interest in Jal Jeevan Mission for the ambitious plan of 'Har Ghar Jal'; the budgetary allocation of Rs. 2.87 lakh crore by the Finance Minister in 2021–22 union budget reflect the seriousness of the government. The task under Jal Jeevan Mission when announced was to provide functional household tap connection (FHTC) to almost 160 million unconnected households by year 2024. This is a mammoth task looking at the size and scope of the work involved.

This scheme is implementing the water source sustainability measures in villages as mandatory elements, such as recharge and reuse through wastewater management, water conservation, rain water harvesting and other recharge measures. This community driven approach for water infrastructure development and operation & maintenance with information, education and communication as the key components getting good traction at the ground level. The service level benchmarking has been decided that every rural household in the country will be provided clean drinking water at the rate of 55 litre per capital per day (LPCD) through functional household tap connection (FHTC).

These large budget allocations and project execution at ground level is certainly encouraging for the water sector and hopefully the large infrastructure development under all central schemes will help in controlling the alarming water situation in the country.

SPML Contribution

SPML Infra Limited, India's leading water management company is indeed a flag bearer of Jal Jeevan Mission. With a rich legacy of four

decades in which it has executed more than 600 water supply projects; SPML Infra is currently providing drinking water facilities to over 50 million people in India and have the unique accomplishment of being the first Indian Company featured amongst the World's Top 50 Private Water Companies.

SPML Infra is executing a number of rural water supply projects under the Jal Jeevan Mission in different states to provide drinking water facilities to every household. With an excellent track record and dedicated teamwork, the company has completed 2 such projects in Manipur in a record time of 18 months as against the stipulated period of 24 months despite being a challenging task due to hilly areas and high intensity of rainfall. The company is also executing several projects under the mission and will be completing them within the stipulated time to achieve the target set by our Hon'ble Prime Minister.

Looking Forward

With the prevailing situation of water scarcity and government's initiatives towards reducing the impact, we really need robust institutions and governance at every level. There is an ardent need to better manage the water resources with regulations that control the groundwater extraction, wastewater treatment and reuse, water harvesting, mechanism for reducing pollution in ground and surface water, effective environment balancing and all other which are part of the water crisis.

About the Author

Mr. Subhash Sethi is Chairman of SPML Infra Limited. An ISO 9001 : 2015 Company nurtured by him has become the leading infrastructure development company in India with over 600 completed projects in a rich legacy of four decades. He has been bestowed with a number of awards for his significant contributions towards the development of water and power sector in India.

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