

**Favorite book/author...**

Unshakeable by Tony Robbins

Favorite Movie

Dangal, for its unshakable determination

Favorite holiday destination...

New Zealand

WATER SECURITY: PPP PERSPECTIVE

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Among all natural resources, water is considered the most vital. In India from being infinite and renewable, it has become a finite and vulnerable natural resource. The water resources in India are under tremendous pressure from increasing population, rapid urbanization, changing life styles, economic and industrial development, and our traditional agriculture method. Access to clean drinking water for the large population is inadequate, water related disasters such as floods and droughts are increasing year after year, vulnerability to climate change poses immense pressure for sustainability of water systems and humanity. The battle against time remains top of mind for water utilities, for maintaining or expanding the life of their assets as their biggest challenges.

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India is one of the world's largest crop producers. Over the years, there has been an increase in water consumption in the agricultural sector. The volume of water used for irrigation in India is expected to increase by 68.5 trillion liters between the year 2000 and 2025. A number of demographic and economic factors are driving the use of water in agricultural production. The 2030 International Water Resource Group (IWRG) report suggest that India has low agricultural water productivity and efficiency, combined with aging supply infrastructure. The situation if not drastically improved, would make severe supply-demand gaps with currently planned crop choices. India's aggregate water demand is expected to double from the current level of about 700 billion cubic meters to 1498 billion cubic meters by 2030. With an estimated supply of about 744 billion cubic meters by then, the water gap is estimated to be 50 per cent. This gap would be driven by a

rapid increase in demand of water for agriculture, coupled with a limited water supply and storage infrastructure. India's demand for food grain will grow from 178 MMT in year 2000 to 241 MMT by 2050. Change in consumption pattern of agricultural products is also resulting in increase of water usage. Demand for agricultural products with high water footprint is projected to rise with increased disposable income and urbanization.

Water is becoming a high-tech proposition. Technology is driving much innovation in water sector and provides strong analytics that give operators actionable information for system optimization, cutting costs and allowing them to do more with less, even as assets grow older. The utilities are now focusing more on sustainability, value and innovation, a new trend in water business is emerging.

The Challenges

Declining availability: India's average annual water resource potential is estimated at 1,869 billion cubic meters (BCM). The water availability per capita in India has fallen from about 5 million liters in the 1950's to 1.3 million liters in 2010. This 75 percent drop in the last 50 years has made water availability at 1545 cubic meter per capita per year in 1991 which is less than 1000 cubic meter per year at present. With an estimated population of 1.37 billion currently, the available and utilizable water resources per capita per year are not enough to sustain the demand.

Increasing Demand: India's population has increased from 449 million in 1960 to 1,370 million currently and it is projected to continue growing for years to surpass China's population by 2024,

and is projected to touch 1,500 million in 2030 and 1,660 million by 2050 to become the most populous country in the world. The total water withdrawal for all uses in 1990 was approximately 520 BCM per capita per year that has increased to 790 BCM in 2014 and estimated to reach 1,422 BCM by the year 2050. It would be a very difficult task to increase the availability of water from the 1990 level of 520 BCM to the desired level of 1,422 BCM by the year 2050 as most of the undeveloped utilizable water resources are concentrated in a few river basins such as the Brahmaputra, Ganga, Godavari, and Mahanadi.

Water Quality: High fluoride concentration beyond the permissible limit of 1.5 ppm in ground water is a major issue affecting large rural population spread in over more than 200 districts in 17 states in the country. The presence of excess Arsenic in ground water has also been a matter of concern in different states. Almost 80 per cent of our surface water resources are contaminated. Nearly 60 per cent of India's ground water reserves are already contaminated with biological, organic, and inorganic pollutants. The Central Pollution Control Board (CPCB) has listed 18 major rivers in India as unfit for any domestic and industrial water usage. Groundwater contamination with chemicals is another big health hazard.

Non-Revenue Water

One of the major issues affecting water utilities in India is the considerable loss of water from the distribution system. Non-revenue water (NRW) is a well-known issue that results in large volumes of water being lost through leaks in supply system and not being billed to customers. It is a very real challenge faced by the majority of water utilities

for me**Role of Public-Private Partnership in Water Sector of India**

The private sector can make a big difference in infrastructure development under PPP mode with long-term investment and financing plans

as a consequence of increased urbanization, higher demand, increased prices and ageing and dilapidated distribution networks. Non-revenue water level is quite high in India which results in huge volumes of treated water being lost during transmission and distribution that affects the financial capability of water utilities through lost revenues and increased operational costs. A high level of NRW indicates that our water utilities are poorly managed with governance issues, lacks in technical and managerial skills necessary to provide reliable service to their citizens. Reducing water losses is critical to efficient resource utilization, efficient utility management, enhanced consumer satisfaction, and reduction in capital-intensive capacity addition.

The central government has expressed interest in Israel's water management systems and technologies, presenting India as a potential investment option for the growing international water business. Denmark and Japan have also expressed interest in assisting India with its high level of NRW.

Asset Management

The water infrastructure in India in most cities are in a depleted state and with growing economy and changing lifestyle, more water is consumed and demand is ever growing that has put tremendous pressure on already strained water infrastructure. Cities are water stressed and require immediate attention in regards to development and maintenance of water and wastewater infrastructure. Water utilities have been caught in

a bind between time and resources. Their water and wastewater infrastructure is deteriorating, pumps are breaking down, pipes are springing leaks and other assets are reaching the end of their natural life cycle, but cash-strapped utilities have resource crunch and infrastructure knowledge to make necessary upgrades.

In cities with more than one million populations, the official water supply after average 35 percent loss in leakages is just about 125 liters per capita per day which is considerably lower than the demand of daily 210 liters per capita. Infrastructure development and regulations have not kept pace with population growth and urbanization and as a result water asset management has become a major challenge.

Lack of Funding

Funding of large-scale water and wastewater infrastructure projects is continued to be an issue with water utilities. It is estimated that overall investment required in the sector is INR 620,000 crore (USD 129 billion). India currently spends about 6 percent of its GDP on infrastructure, less than several countries in Asia, and nearly half of the 11 percent invested by China. As the need for investment is becoming more urgent, government is finding it difficult to provide enough funds to utilities. At the same time economic and demographic change is driving demand for investments in water infrastructure. The possible solution lies in the growth of private investment in the water infrastructure sector.

PPP in Urban Water

Indian water utilities face critical issues of large investment in the aging water and wastewater infrastructure. Thousand crores of rupees are needed to maintain and improve our drinking water infrastructure and to maintain and improve wastewater treatment facilities and other required infrastructure. The investment requirements are huge and cannot be met from the water utilities alone. It has become necessary to attract private sector investment in this critical sector as it is a key strategy to meet the resource deficit. The Indian Ministry of Water Resources predicts that per capita water availability will reduce by 36 percent in 2025 and by about 60 percent in 2050 from the level of 2001.

Public-Private Partnerships (PPPs), an agreement between the government or public authority and private companies for the delivery of public services for the fixed duration of the agreement. PPP is not a privatization, as the ownership of the water assets are not transferred to the private companies, only the management part are being delegated.

The PPP model is important in infrastructure development despite there have been some failures. We have example of some successful implementation of PPP in airports, ports, roads and bridges. Although there are a number of potential risks associated with this model involving land acquisition, construction, environmental clearances and other contentious issues like termination of project before the contract period etc. But looking at the water sector requirement of robust infrastructure development and maintenance of existing assets, PPP projects will be helpful in increasing the capacity and mitigating the drinking water supply gap in a major way.

Private sector has good expertise, deep sectorial knowledge and an advantage in executing large and complex infrastructure projects and will do what it is paid to do, therefore incentives and performance requirements need to be clearly set out in the contract. Focus should be on performance that is out-put based, relatively easy to monitor and to make the project viable. Given the long-term nature of PPP projects and the complexity associated, it is difficult to identify all possible risk points during project development and issues may arise that were not anticipated in the documents or by the parties at the time of the contract. It is also possible that some of the projects may fail or may be terminated prior to the project term for a number of reasons including changes in government policy, failure by the developer or the government to perform their obligations or indeed due to external circumstances. While some of these issues will be able to be addressed in the PPP agreement, some of them will need to renegotiate and to be managed during the course of the project to accommodate the contingencies for successful implementation of the project.

To revive India's water sector under PPP model, we need to consider increasing public spending;

make financing for infrastructure projects easier and review the current PPP model to make changes in order to attract investors and learn from failures and past experiences. The private sector can make a big difference in water infrastructure development under PPP mode with long-term investment and financing plans to identify revenue sources as well as the extent of financing that can be enabled.

Priority Action Areas

The future of development of water infrastructure through PPP Mode should be encouraged. Central and State Governments and private sector have to work together for reliable and successful contracts. There are some weaknesses for which solutions have to be found for making PPP projects successful:

- ▶ Strong political support to PPP projects at every level of Central or State Governments,
- ▶ Sector policies and regulations have to be developed so they can be more attractive to the private sector,
- ▶ The finance market has to prepare adequate instruments and must have the capacity to meet the requirement of long-term equity needed for infrastructure projects,
- ▶ Feasible and viable projects as the PPP projects cannot turn bad project to good ones. Comprehensive feasibility studies are a must,
- ▶ The private sector has to develop its capacities in order to fully meet the challenge in investing in large numbers of projects which can be diversified.

Last Word

India's water stress is a multi-faceted issue and can therefore be tackled from a number of perspectives. Ultimately, the key lies in multiple synchronized solutions, equally funded, and operating at all levels of society. With the right approach, it is possible to manage water effectively. Safe and reliable water services are a cost-intensive process. However, by implementing best practice, asset management and leveraging technology, utilities can effectively manage these costs, achieve conservation goals and be more resilient to future challenges, both anticipated and unpredictable.

VISION OF MY COMPANY

Creating with passion and innovation, world class infrastructure to make human life comfortable.

Annual Profit-Before-Tax
INR 617.5 Million

Number of Employees
1200

Annual Revenues
INR 21,101.87 Million

Ongoing Projects
40

Major Orders Won Recently

Received Phase 2 SAUNI Yojana order worth INR 5,001.4 million from Govt. of Gujarat for drinking water and irrigation project

Key Achievements of Last Year

- ▶ Recorded Net Profit of INR 529 million in FY 18
- ▶ Successfully implemented S4A Scheme to restructure debt of INR 5,469 million (USD 82 million) by a consortium of banks for repayment from 2023 onward for five years.
- ▶ Completed SAUNI Phase 1 Project in Gujarat and Received Phase 2 order worth INR 5,001.4 million
- ▶ Started execution work for Water Projects to provide potable water to the Dholera Special Investment Region located along the Delhi-Mumbai Industrial Corridor.
- ▶ Reduced Non-revenue water in Bengaluru from 53 to 29 percent using innovative technology of helium leak detection to accurately identify and locate hidden leaks in large and small pipes, thus saving 39.2 million liter drinking water per day.
- ▶ Completed 400 kV Substation along with installation of 500 MVA Autotransformer in Mainpuri, Uttar Pradesh and Sikar in Rajasthan making eligible to bid for 400 kV and 765 kV power substation projects that will advance the company into highest capacity power sub-station business.
- ▶ More than 20,000 villages electrified in Bihar, Karnataka, Jharkhand, Odisha, UP, and West Bengal
- ▶ Commissioned 220 kV GIS (gas insulated substation) in West Bengal.

Management

Sushil Sethi Jain – Managing Director

Deepak Sethi – Director

Abhinandan Sethi – COO