

# Managing Water Resources: Industry Initiative

10

**Sabyasachi Nayak**

*Confederation of Indian Industry, India*

## INTRODUCTION

Water is inextricably linked to every aspect of life and development. The burgeoning population leading to spike in anthropogenic activity and climate change has put enormous strain on the fragile water resources. Continuing with the current water trajectory, country like India has witnessed a progressive decline in per capita availability. Numerous steps are initiated by the government to address the issue plaguing the water sector in India. But the involvement of various stakeholders is equally important.

The Indian industry has taken a proactive role in ensuring the proper management of the limited water resources by engaging with concerned stakeholders. This paper seeks to capture the grass roots interventions undertaken by industry in improving the management of water resources. As water can directly impact the livelihood therefore the conservation, revival and development of water resources calls for a comprehensive, holistic, scientific and sustainable approach. It puts into perspective the operational modality of industry in engaging with the community to manage water resources. The objective is to provide a dynamic insight into the operational model of the industry in addressing the accumulated neglect in the water sector. An assessment of the operating model reiterates the positive social, economic and environmental outcome in a sustainable manner. Therefore, it is proposed to explore operating beyond the level of “watershed” to larger level “river basin”. Going forward it is imperative to revive a culture of community base management of natural resources.

## BACKGROUND

Water use has been increasing worldwide by about 1% per year since the 1980s. (United Nations Educational Scientific and Cultural Organization [UNESCO], 2019) Global water use has increased by a factor of six over the past hundred years. Levels of physical water stress are likely to increase as populations and their demands for water grow, and the effects of climate change intensify (UNESCO, 2018). The planet’s capacity to sustain the growing demands for freshwater is being challenged and by 2050, global water demand is projected to increase by 55% (UNESCO, 2017). Declining water resources are already affecting many parts of the world and an estimated 20% of the world’s aquifers being over-exploited (UNESCO, 2014). The gap between water supply and demand is projected to be of 40% in 2030. Asia will need on average 65% more freshwater withdrawals for their industry and energy sectors by 2030 in order for their national economies to grow as forecast (Water Resource Group, 2012). India is among the ten major water users in the world in terms of volume, which uses 646 km<sup>3</sup> of water a year (UNESCO, 2009).

DOI: 10.4018/978-1-7998-3479-3.ch092

## **Water Resources: India**

India's finite and fragile water resources are stressed and depleting, while sectorial demands (including drinking water, industry, agriculture, and others) are growing rapidly in line with urbanization, population increases, rising incomes and industrial growth (Government of India, 2001). The average rainfall is about 1170 mm which varies temporally and spatially (Government of India, 2015). About 80% of the country's surface water is polluted. The rivers Yamuna, Ganga, Gomati, Ghaghara, Chambal, Mahi and Vardha are amongst the most coliform-polluted water bodies in India. (WaterAid, 2015). India is the largest user of groundwater in the world with an annual extraction of 210 billion cubic meters. As per NASA study groundwater depletion in Rajasthan, Punjab, Haryana and Delhi was equivalent to a net loss of 109 cubic km from August 2002 to October 2008 (Government of India, 2010).

The irrigation sector consumes about 80% of the total water use which may reduce to about 70% by 2050, whereas the domestic sector and industrial consumption is projected to double during the same period (Government of India, 2014). India faces an unprecedented crisis in the next two decades. Today, major urban areas are unable to provide a reliable and regular water supply. Not surprisingly, aquifer depletion and inefficient water use are now endemic (UNESCO, 2012). The demands of a rapidly industrializing economy and urbanizing society come at a time when the potential for augmenting supply is limited, water tables are falling and water quality issues have increasingly come to the fore. It is no wonder then that conflicts across competing uses and users of water are growing by the day (Government of India, 2011).

### **Industry Water Initiative**

In the advent of water crisis, the industries operating in the country will be the hard hit. Therefore the Indian industries collectively have taken a proactive role in ensuring the proper management of the limited water resources (Confederation of Indian Industry, 2006). The embracing challenge for industry is to play its appropriate role in effectively addressing unsustainable exploitation and contamination of freshwater resources (UNESCO, 2012). Industry has been showing ways of effectively managing the scarce water resource through proper engagement, networking and partnering with stakeholders (Confederation of Indian Industry, 2013). Industry is continuously seeking better ways to manage its water resources efficiently (Associated Cement Companies, 2013). Using a participatory development approach, construction and revival of water harvesting structures including Revival of village Ponds and Pasture land development is ensuring available water pre and post rainy season for drinking, cattle and irrigation purposes. Community is empowered to take local ownership of Water Projects and actively engages in creating solutions to water challenges .(Ambuja Cement Foundation, 2017).

Watershed Development Programme, designed to assist farmers in identified moisture-stressed has improved the water situation. The focus is not only seeking to achieve water conservation and soil enrichment, but also improving village-based management of water and other natural resources by evolving a culture of optimum water usage, finally leading to maximizing the benefits of water resources. (ITC Limited, 2017) Measures such as construction of check dams, ponds, excavation of streams, farm bunds for soil and water conservation practices enhances the availability and accessibility of natural resources on which rural livelihoods and economy depend (Lupin Human Welfare and Research Foundation, 2016). Rejuvenation of Rivers and Streams have proved extremely useful to convert rain fed farming into irrigated thereby improving the crop productivity. The intervention of Stream Revival mainly involves the excavation of the river beds and creating embankments to help channelize the water from the natural

7 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage:

[www.igi-global.com/chapter/managing-water-resources/260271](http://www.igi-global.com/chapter/managing-water-resources/260271)

## Related Content

---

### BTCBMA Online Education Course Recommendation Algorithm Based on Learners' Learning Quality

Yanli Jia (2023). *International Journal of Information Technologies and Systems Approach* (pp. 1-17).  
[www.irma-international.org/article/btcbma-online-education-course-recommendation-algorithm-based-on-learners-learning-quality/324101](http://www.irma-international.org/article/btcbma-online-education-course-recommendation-algorithm-based-on-learners-learning-quality/324101)

### N-Clustering of Text Documents Using Graph Mining Techniques

Bapuji Rao (2021). *Encyclopedia of Information Science and Technology, Fifth Edition* (pp. 828-846).  
[www.irma-international.org/chapter/n-clustering-of-text-documents-using-graph-mining-techniques/260232](http://www.irma-international.org/chapter/n-clustering-of-text-documents-using-graph-mining-techniques/260232)

### Information-As-System in Information Systems: A Systems Thinking Perspective

Tuan M. Nguyen and Huy V. Vo (2008). *International Journal of Information Technologies and Systems Approach* (pp. 1-19).  
[www.irma-international.org/article/information-system-information-systems/2536](http://www.irma-international.org/article/information-system-information-systems/2536)

### Mobile Enterprise Architecture Framework

Zongjun Li and Annette Lerine Steenkamp (2010). *International Journal of Information Technologies and Systems Approach* (pp. 1-20).  
[www.irma-international.org/article/mobile-enterprise-architecture-framework/38997](http://www.irma-international.org/article/mobile-enterprise-architecture-framework/38997)

### 3D Media Architecture Communication with SketchUp to Support Design for Learning

Michael Vallance (2015). *Encyclopedia of Information Science and Technology, Third Edition* (pp. 2410-2423).  
[www.irma-international.org/chapter/3d-media-architecture-communication-with-sketchup-to-support-design-for-learning/112657](http://www.irma-international.org/chapter/3d-media-architecture-communication-with-sketchup-to-support-design-for-learning/112657)