WATER AND SANITATION FOR HEALTHY INDIA

Harender Raj Gautam

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Water is the most precious and essential commodity in the lives of the human beings and every human being has the right to have continuous availability of potable water. Continuous availability of potable water is one of the important parameters of human index. To highlight the importance of water, one of the most significant, recent milestones has been the recognition in July 2010 by the United Nations General Assembly of the human right to water and sanitation. UN recognized the right of every human being to have access to enough water for personal and domestic uses which must be safe, acceptable and affordable. Emphasis has also been given to the fact that the water costs should not exceed 3 per cent of household income. Moreover, the water source has to be within 1,000 metres of the home and collection time should not exceed 30 minutes. Water is also in the main agenda items of the Sustainable Development Goals (SDG). Sustainable Development Goal 6 specially focuses on this issue: "Ensure availability and sustainable management of water and sanitation for all." Goal 6.1 of the SDGs specifically says that by 2030, countries including India should 'achieve universal and equitable access to safe and affordable drinking water for all'. According to global reports released by the United Nations, 2.1 billion people live without safe drinking water at home and 80 per cent of those who have to use unsafe and unprotected water sources reside in rural areas. Further, more than 700 children under five years of age die every day from diarrhoea due to unsafe water and poor sanitation. This report also states that in eight out of 10 households, women and girls are responsible for water collection. Nearly two-thirds of the world's population experiences severe water scarcity at least for 31 days per year. The intense impact of water scarcity could displace 700 million people by 2030.

In India, the provision of clean drinking water has been given priority in the Constitution, with Article 47 conferring the duty of providing clean drinking water and improving public health standards to the State. India is facing its worst-ever water crisis, with 600 million people facing acute water shortage and the crisis is "only going to get worse" in the years ahead as per the The NITI Aayog Report, which is based on the data from 24 of India's 29 states. In addition to the availability of water, quality of drinking water is also a crucial issue. According to a recent report based on sample tests done by Bureau of Indian Standards (BIS), tap water in Mumbai is the safest for drinking while Delhi's water is the worst among 21 big cities where the samples were drawn. Of greater concern is the fact that all the samples of tap water taken from 15 out of 21 cities failed to meet one or more safety parameters out of 28 parameters prescribed for drinking water standards of BIS notified in 2012. According to the test findings, only one of the samples in Hyderabad

and Bhubaneswar failed and the two cities were ranked second in the list followed by Ranchi and Raipur. Central Water Commission estimated that only about 1,123 km^3 water (690 km^3 from surface water and 433 km^3 from groundwater) can be used due to topographical constraints and spatio-temporal variations in resources. In India, due to a threefold increase in population during 1951–2010, the per capita availability of water in the country as a whole decreased from 5,177 m^3/ year in 1951 to 1,588 m^3/ year in 2010.

Water, Sanitation and Hygiene

Contaminated water and a lack of basic sanitation are undermining efforts to end extreme poverty and disease in the world's poorest countries. In 2017, 2 billion people worldwide did not have access to basic sanitation facilities such as toilets or latrines and 673 million people still practised open defecation. According to the WHO/ UNICEF Joint Monitoring Programme for Water Supply and Sanitation, at least 1.2 billion people worldwide are estimated to drink water that is not protected against contamination from faeces. Unclean water and poor sanitation are a leading cause of child mortality. Childhood diarrhoea is closely associated with insufficient water supply, inadequate sanitation, water contaminated with communicable disease agents, and poor hygiene practices. Diarrhoea is estimated to cause 1.5 million child deaths per year, mostly among children under five years of age living in developing countries. The prevalence of stunting in India (38.4 per cent) is among the highest in the world, and diarrhoea is a major killer of children younger than 5 years. The links between lack of water and sanitation access and the development goals are clear, and the solutions to the problem are known and cost-effective. A 2012 WHO study shows that every US $1 invested in improved sanitation translates into an average global economic return of US$5.5. Those benefits are experienced specifically by poor children and in the disadvantaged communities that need them most.

According to WHO and UNICEF, 2.2 billion people lack access to safely managed drinking water services and 4.2 billion people lack safely managed sanitation services. Loss of productivity to water and sanitation-related diseases costs many countries up to 5 per cent of GDP. Universal access to safe drinking water and adequate sanitation and hygiene would reduce the global disease burden by 10 per cent. The impact on child mortality rates is devastating with more than 2,97,000 children under five who die annually from diarrhoeal diseases due to poor sanitation, poor hygiene, or unsafe drinking water. In urban areas, for every US$1 invested in basic drinking water, an average of more than US$ 3 is returned in saved medical costs and increased productivity. For every US$ 1 invested in basic sanitation, the return is US$ 2.5. In rural areas, the return on investment is even higher with every US$ 1 invested in basic drinking water, an average of nearly US$ 7 is returned in saved medical costs and increased productivity. And in the case of basic sanitation in rural areas, every US$ 1 returns on average more than US$ 5 in saved medical costs and increased productivity.

Government Initiatives

Scientific management of water is increasingly recognized as being vital to India's growth and ecosystem sustainability. The Government of India is being proactive about water management and has created the new Ministry of Jal Shakti, in which the erstwhile ministries of Water Resources and

Drinking Water and Sanitation will be merged, to consolidate interrelated functions pertaining to water management. The newly formed Jal Shakti Ministry has launched the Jal Shakti Abhiyan—a campaign for water conservation and water security in 1592 water stressed blocks in 256 districts, to ensure five important water conservation interventions. Interventions will be in the form of water conservation and rainwater harvesting, renovation of traditional and other water bodies/ tanks, reuse, bore well recharge structures, watershed development and intensive afforestation. The Jal Shakti Abhiyan is a time-bound, mission-mode water conservation campaign.

Central and State Governments are actively pursuing the achievement of SDGs, including SDG 6. These initiatives include the Water Framework Law of India 2016, National Rural Drinking Water Program (NRDWP), Accelerated Urban Water Supply Programme (AUWSP), Namami-Gange (National Mission for Clean Ganga), and National Water Policy. NITI Aayog in 2018 came out with a baseline index of Indian States' performance on various UN Sustainable Development Goals (SDGs) and the States of Himachal Pradesh, Kerala and Tamil Nadu and the Union Territories of Chandigarh and Pondicherry, were among the front-runners. Himachal Pradesh has surged to the top backed by its success in providing clean water and sanitation, in reducing inequalities and in preserving the mountain ecosystem. Central and State Governments are making efforts to increase the coverage of water availability and as on 31 December 2018, 79 per cent of rural habitations has been covered at 40 litres per capita per day (lpcd) but only 47 per cent at 55 lpcd. Till 6 January 2019, 18 per cent of rural households were provided with Piped Water Supply (PWS) household connections. There is also a significant variation in piped water coverage across States. Some States, such as Gujarat, Sikkim and Himachal Pradesh have provided piped water to more than half of the rural households while others such as Uttar Pradesh and Bihar have minimal (less than 5 per cent) piped water coverage. These disparities could be a reflection of State priorities and geography. For instance, the Himachal Pradesh Government has spent the most on water supply and sanitation over the last eight years (in terms of the share of state government spending), according to data from PRS Legislative Research.

Sanitation is also one of the important components of the quality parameters in the composite human index. The Swachh Bharat Mission (SBM), India's flagship and the world's largest sanitation programme, aims to accelerate universal access to sanitation in rural and urban India. Since its launch in 2014, SBM reports building close to 100 million toilets by way of providing financial incentives to needy families, involving local governments and communities in construction and in monitoring progress, and by conducting mass awareness campaigns. Today, India is at an important juncture, with SBM data showing more than 98 per cent sanitation coverage and sample studies reporting good progress but lower coverage in terms of latrine ownership (71 per cent) and sanitation coverage (93.1 per cent) in rural India.

Need for Better Water Governance

The water crisis in the 21st century has more to do with poor management than scarcity and stress. Water management normally refers to the government making decisions to manage water systems. Water governance includes both internal and external processes through which societies manage their water resources. According to the UN World Water Report (2006), the crisis of water is largely due to the failure of water governance, and for the sustainable development of water resources, water governance should be given due priority. One of the most successful examples of how water governance leads to sustainable water management is the example of the Phnom Penh Water Supply Authority (PPWSA) in Cambodia. In the span of just 15 years, an almost bankrupt poor-performing water utility was transformed into an efficient profitable taxpaying entity, providing 24 hours of uninterrupted water supply to the residents of the Cambodian capital. This was achieved by focusing on different aspects of water governance such as legal and regulatory aspects, human resources, cost recovery, and financial sustainability. The case of PPWSA can be relevant to India, because both India and Cambodia are developing countries located in South and Southeast Asia, respectively. There is a need to improve water governance in India by educating the governance machinery in our rural and urban India managing the supply of water.

Success Stories

India has many successful examples where people with their strong will have demonstrated effective models of water conservation. Rajasthan's Mukhya Mantri Jal Swavlambhan Abhiyan, launched in 2016, is a multi-stakeholder programme which aims to make villages self-sufficient in water through a participatory water management approach. It focuses on converging various schemes to ensure effective implementation of improved water harvesting and conservation initiatives. Use of advanced technologies such as drones to identify water bodies for restoration is one unique feature of the programme. Gram Sabha in villages are responsible for budgeting of water resources for different uses, providing greater power to the community members in decision-making. The programme has benefited more than 88 lac people and 93 lac heads of livestock, covering an area of more than 33.50 lac hectares. After first phase there was 56 per cent reduction of water supply through tankers and an average rise in the groundwater table by 4.66 feet in 21 non-desert districts of the states. In addition, 50,000 ha of additional land has been made fit for cultivation in the districts and 64 per cent of the installed hand-pumps have been rejuvenated.

The Andhra Pradesh Government has launched the Neeru-Chettu Programme as a part of its mission to make Andhra Pradesh a drought-proof state and reduce economic inequalities through better water conversation and management practices. The programme has a strong emphasis on improving irrigation and focuses on ensuring water supply in drought-prone areas and reducing the acute gap through scaled-up adoption of scientific water management practices. Repair, renovation, and maintenance of irrigation assets are key activities and completing such activities before monsoons is a priority under the programme. The state has repaired about 7,000 farm ponds and over 22,000 check dams under the programme. Additionally, 102 lift irrigation schemes have been commissioned or revived by the State. Efforts under the Neeru-Chettu programme have enabled irrigation access to nearly 2,10,000 acres of land in the State. There are number of such initiatives in Uttarakhand, Kerala, Himachal Pradesh, Rajasthan, Gujarat, Maharashtra, Karnataka and other states. The efforts by local communities in India to improve water availability have been lauded in a UN report that highlights the importance of finding nature-based solutions to meet global water challenges.

Missions Ahead

NITI Aayog has identified nine key areas that require significant improvements. Among these, source augmentation and restoration of water bodies, source augmentation (groundwater), and policy and governance assumes great significance. India is still water surplus and receives enough annual rainfall to meet the need of over one billion plus people. According to the Central Water Commission, India needs a maximum of 3,000 billion cubic metres of water a year while it receives 4,000 billion cubic metres of rain. But our problem is that we are not managing our water resources well. We capture only eight per cent of its annual rainfall—among the lowest in the world. The traditional modes of water capturing in ponds have been lost to the demands of rising population and liberal implementation of town planning rules. India has been also poor in treatment and re-use of household wastewater. About 80 per cent of the water reaching households in India is drained out as waste flow through sewage that then pollutes other water bodies including rivers and also land. On the other side of the spectrum is Israel, a country that is located in desert and has learnt to deal with water crisis situation. Israel treats 100 per cent of its used water and recycles 94 per cent of it back to households. More than half of irrigation in Israel is done using reused water. We need to remember the theme of the India Water Week-2019 which emphasized the need for water cooperation to cope with challenges of the 21st century. We need to sensitize the people so that the movement towards water conservation takes place at the grassroots level, starting from primary schools, our office premises and each household.

(The author is Professor and Head, Department of Plant Pathology, Dr, Y.S.Parmar University of Horticulture and Forestry. He is also 'Earth Care Award' winner of 2010, Email: hrg_mpp@yahoo.com)