

# ENSURING SAFE AND ADEQUATE DRINKING WATER

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Rainwater harvesting is one of the most important initiatives which can help in a long way in sustaining the supply of safe drinking water in the rural areas. The Central Government is working on a master plan envisaging construction of about 23 lakh artificial recharge and rainwater harvesting structures in rural areas and 88 lakh in urban areas. The Central Ground Water Board has prepared a conceptual document entitled 'Master Plan for Artificial Recharge to Ground Water in India'.

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. United Nations Conference on Environment and Development (UNCED) has rightly themed this year's Water Day as 'leaving no one behind'. This goes on par with the promise on the 2030 Agenda for Sustainable Development. The Sustainable Development Goals 2015-2030, a successor to Millennium Development Goals, include Goal 6 for clean water and sanitation for ensuring their availability and sustainable management. Goal 6.1 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 makes a mention 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.



Water consumption of the world is doubling every 20 years, which is more than twice the rate of increase of our population. Central Water Commission estimated that only about 1,123 km<sup>3</sup>, (690 km<sup>3</sup> from surface water and 433 km<sup>3</sup> from groundwater) can be used due to topographical constraints and spatio-temporal variations in resources. In India, due to a 3-fold increase in population during 1951–2010, the per capita availability of water in the country as a whole decreased from 5,177 m<sup>3</sup>/ year in 1951 to 1,588 m<sup>3</sup>/ year in 2010.

## Water Availability in the Rural Areas

India is among the world's most water-stressed countries. In 1950, India had 3,000–4,000 cubic meters of water per person. Today, this has fallen to around 1,000 cubic meters, largely due to population growth. Water resources are not evenly distributed. Half of India's annual precipitation falls in just 15



rain-soaked days, making floods and droughts a fact of life in the country. Rural India has more than 700 million people residing in about 1.42 million habitations spread over diverse ecological regions. According to the National Sample Survey Office (NSSO) (2011-12), about 88.5 percent households in rural India had improved source of drinking water and among these, 85.8 percent had sufficient drinking water. Further, 46.1 per cent of the rural households do not have drinking water facilities within their premises. A person in rural India has to spend, on an average, 20 minutes to fetch drinking water. The country has already spent an estimated Rs. 1,105 billion on providing safe drinking water since the First Five Year Plan launched in 1951 yet thousands of crore are still spent on controlling water-borne diseases, indicating that the problem needs to be addressed from different perspective. India loses 73 million working days due to water-borne diseases.

### Government Initiatives

Supply of potable drinking water has been a top priority of Central and State Governments. Constant efforts have been made in this direction starting from the Bhore Committee in 1946 to Accelerated Rural Water Supply Programme (1972), and 'Swajal Dhara' scheme (1999) by empowering and involving local communities in tackling water and sanitation issues. In 1981, Government of India launched the International Water Supply and Sanitation Decade (81-90) Programme with one of the targets being 100 per cent coverage of rural

and urban population with safe drinking water supply facilities. To supplement this effort, Technology Mission for drinking water was set up in 1986 which was renamed as Rajiv Gandhi National Drinking Water Mission in 1991. Again in 1999, the Department of Drinking Water Supply was created in the Ministry of Rural Development. Then came 'Bharat Nirman', a flagship programme of the Central Government which created the required infrastructure to have good quality water to rural households. Rural drinking water was one of the six components of Bharat Nirman. During Bharat Nirman period, 55,067 un-covered and about 3.31 lakh slipped-back habitations were to be covered with provisions of drinking water facilities and 2.17 lakh quality-affected habitations were targeted to be addressed for water quality problem.

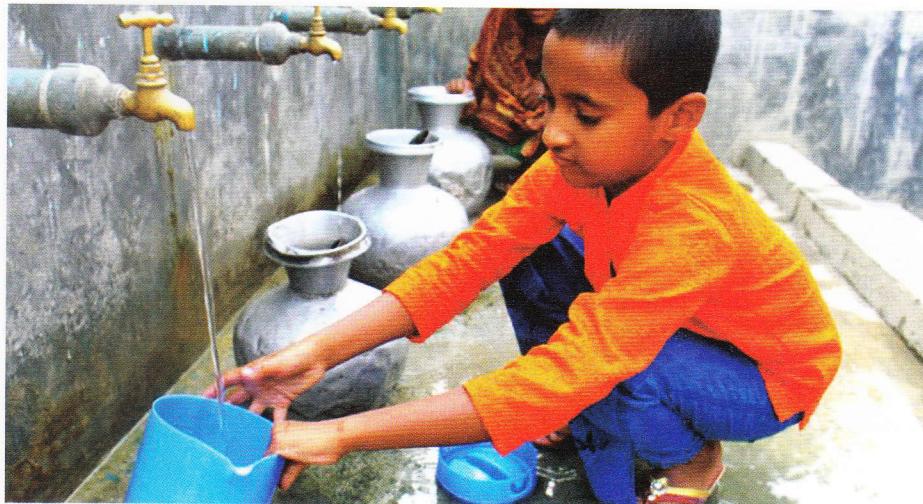
Now, the task of providing safe drinking water in rural areas is through the National Rural Drinking Water Programme (NRDWP) which aims at assisting States in providing adequate and safe drinking water to the rural population in the country. In 2018-19, the scheme was allocated Rs. 7,000 crore and the Ministry is aspiring to achieve 'Har Ghar Jal' by 2030, in line with the UN's Sustainable Development Goals. In Financial Year 2019-20, Central Government allocated Rs. 8,201 crore for NRDWP. This is a 49 per cent increase from FY 2018-19. Source of drinking water assumes great significance as it should be sustainable. Earlier, drinking water to the rural population has been provided through hand pumps, tube wells and piped water supply but now the thrust area is piped water supply, preferably through a balanced mix of sustainable surface and ground water based resources. In 2011, the Ministry came out with a strategic plan for the period 2011-22. The plan identified certain standards for coverage of habitations with water supply, including targets for per day supply of drinking water. NRDWP now targets providing rural populations with 40 litres of water daily to cover domestic uses. On this measure, water coverage has increased from 70 per cent in 2011-12 to 81 per cent now. However, in 2012, the

target was increased to 55 lpcd (litres per capita per day), more than the World Health Organization's recommended amount of around 50 lpcd. As on 31 December 2018, 79 per cent of rural habitations had been covered at 40 lpcd but only 47 per cent at 55 lpcd. Till 6 January 2019, 18 per cent of rural households had been provided with Piped Water Supply (PWS) household connections. There is also 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. 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. The Central Government aims to cover 90 per cent rural households with piped water supply and 80 per cent rural households with tap connections by 2022. A pilot project in the name of "Swajal" that is designed as a demand driven and community centred programme to provide sustainable access to drinking water to people in the rural areas. Swajal was originally launched as a pilot scheme in February 2018 in six States of Bihar, Maharashtra, Madhya Pradesh, Uttar Pradesh, Uttarakhand and Rajasthan. Later, it was extended to all the 112 aspirational districts identified by NITI Aayog.

The Central Government has also come up with a ₹6,000-crore World Bank-aided Atal Bhujal Yojana with community participation to ensure sustained groundwater management in overexploited and ground water-stressed areas in seven states. It has been found that 1,034 blocks out of the 6,584 assessed blocks in the country are overexploited.

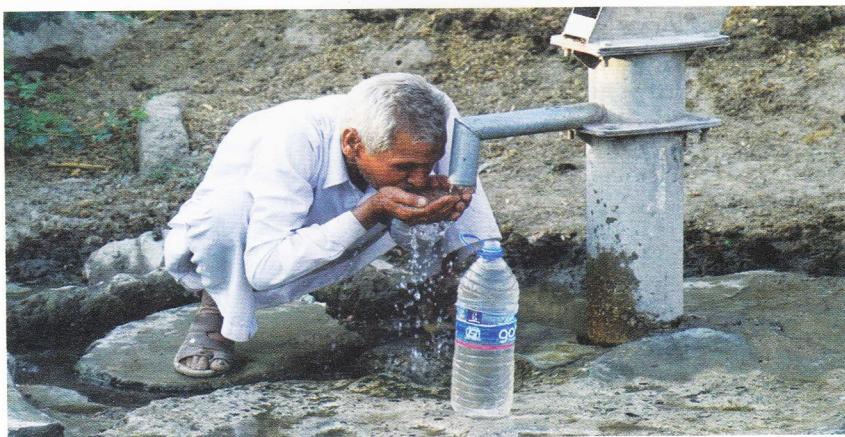
The quality of water supplied is also a major issue. According to one study in *The Lancet*, 105,000 children lost their lives in 2015 to water-induced diarrhoea. Official NRDWP data reveals that around 60,000 of all habitations are



exposed to water contaminated by arsenic and fluoride. In March 2017, MDWS started a new sub-programme under NRDWP known as the National Water Quality Sub-Mission (NWQSM). The sub-programme aims to address the urgent need for providing clean drinking water in already identified 28,000 arsenic and fluoride affected habitations. Between FY 2017-18 and 2020-21, it is estimated that Central Government will provide Rs. 12,500 crore for the scheme. These funds will be taken from the water quality component of overall NRDWP allocations. To enable the rural community shoulder the responsibility in management, operation and maintenance of water supply systems at village level, decentralized, demand-driven, community-managed approach in the form of Swajal Dhara have been adopted. To further strengthen community participation in the drinking water sector for sustainability, National Rural Drinking Water Quality Monitoring & Surveillance Programme has been launched in February, 2006 under which 5 persons in each Gram Panchayat are to be trained to carry out regular surveillance of drinking water sources for which 100 per cent financial assistance including water testing kits, are provided by the Government.

### Challenges and Future Initiatives

According to a recent report by the Britain-based charity WaterAid, nearly 163 million of India's population lack access to clean water close to home. As per the report submitted by the Committee on Restructuring the Central Water Commission (CWC) and the Central Ground Water Board (CGWB), 2016 if the current pattern of demand continues,



about half of the demand for water will be unmet by 2030. In addition, climate change poses fresh challenges as more extreme rates of rainfall and evapotranspiration intensify the impacts of floods and droughts. Moreover, 60 per cent of our districts face groundwater over-exploitation and with 251 cubic kilometre (cu km) annual groundwater extraction rate, our country is the world's biggest consumer of groundwater.

We need many initiatives to counter the challenges in our way, to achieve our goals. Rainwater harvesting is one of the most important initiatives which can help in a long way in sustaining the supply of safe drinking water in the rural areas. The Central Government is working on a master plan envisaging construction of about 23 lakh artificial recharge and rainwater harvesting structure in rural areas and 88 lakh in urban areas and the Central Ground Water Board has prepared a conceptual document entitled 'Master Plan for Artificial Recharge to Ground Water in India'. There are many success stories in India which draw their success from our ancient traditional knowledge and wisdom. In 2001, the Tamil Nadu government made it compulsory for each household to have rainwater harvesting infrastructure and the results are now reflected in the improvement of overall water quality within 5 years. A similar experiment has been tried out in the cities of Bangalore and Pune, where housing societies are required to harvest rainwater. 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. The report notes that reservoirs, irrigation

canals and water treatment plants are not the only water management instruments at disposal. It also cited the example of China's Sponge City which aims to recycle 70 per cent of rainwater." According to this report the collective water storage efforts have benefitted Kadwanchi village in Jalna district in Maharashtra to go in for high value crops such as grapes, ginger and chillies. The 455 families have nearly 600 wells. The villagers also built nine check dams apart from desilting nearly 25 km of stream. In the past, villagers have created 347 farm ponds and added 40 more in 2017 to store monsoon water. The report highlights the importance of beris, traditional system of harvesting rainwater, that have been working as lifesavers for both humans and animals in parts of western Rajasthan for centuries. Shaped like matkas (pitcher), these shallow wells are dug up in areas with gypsum or bentonite beds which prevent the rainwater from percolating downwards but guide them towards the wells through capillary action. Last year, Ramgarh and its surrounding villages hardly received any rain. But even then, these beris are fully charged.

Overexploitation of ground water is a major concern in India. There is need for regulatory mechanism by the State governments to check the overexploitation of this resource. Excess digging of wells should be avoided or restricted in severely affected areas. There is need for more role of Panchayati Raj Institutions (PRIs) in making the drinking water supply schemes functional. Presently, the role of PRIs is minimal. Partnership between village communities, NGOs and the government as the facilitator and co-financing has worked successfully. Empowerment of PRIs with more resources is a viable and sustainable option for scaling up the decentralized service delivery model. We need to remember that to widen the access and availability of drinking water in rural areas, we need to make every effort to preserve and use the water judiciously with active participation of the village communities.

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