THE WATER AND SANITATION PROGRAMMES: EVOLUTION AND LEARNINGS

The 2021 Joint Monitoring Programme Report published by the World Health Organization (WHO) and United Nations International Children's Emergency Fund (UNICEF) states that 56 per cent of India's population receives safe drinking water.[1]

As India undergoes rapid economic growth, it is aiming to reach the water supply, sanitation and hygiene targets under the United Nations-mandated Sustainable Development Goals (SDGs). This is well reflected in the water and sanitation programmes of the Swachh Bharat Mission, launched in 2014, and Jal Jeevan Mission, launched in 2019. In a country where around 68 per cent of the population is rural,[2] delivery of the public service in rural areas has to improve significantly for the country to be able to reach its SDG targets by 2030.

India has focused on rural water supply and sanitation since the First Five-Year Plan (1951–56). States were given the responsibility to build infrastructure and provide water to rural areas, and allocations were made in state budgets for this. Till the 1960s, a few states had limited access to water. To analyse the reasons, the Centre conducted a survey in water-stressed states.[3]

Over the last 25 years, when access to safe drinking water has been a flagship national goal (along with Sustainable Development Goals target committed for 2030), Indian habitations have continued to suffer from lack of safe drinking water. At the core of this failure is inadequate access to safe and sustainable sources of water. The Central government's latest promise on rural water supply—to provide every household a functional household-tap connection under Jal Jeevan Mission (JJM) by 2024—has seemingly factored in this challenge. JJM's grand promise came on the eve of India becoming open-defecation free in October 2019.

Every household with a toilet would, however, add to the demand for water at the household level. One of the biggest reasons for people not using toilets has been the lack of availability of water. So far, around 60 million houses have been connected to taps. This is a huge achievement.

Between 2006–07 and 2013–14, there was an 80 per cent increase in deep tube-wells, leading to plunging groundwater levels. As groundwater is the source of drinking water depletion of underground sources meant that many villages that were once "covered" slipped back to "not-covered" status.[4]

Water supply to households may also lead to generation of grey water from bathrooms and kitchens, resulting in water stagnation, mosquito breeding, foul odour and health impacts.

Jal Jeevan Mission, envisioned to provide safe and adequate drinking water, has factored in wastewater generation for the first time.

Swachh Bharat Mission (Grameen) was launched in 2014. The first phase targeted access to a toilet for every household. By October 2019, every household of rural India had access to some kind of toilet, whether individual or community type. As per government records, Phase I of SBM helped communities in rural areas to build over 100 million toilets in 0.6 million villages.[5] In February 2020, the Union Cabinet approved SBM Phase II, which targets managing solid and liquid waste, including faecal sludge in rural areas.

The current Covid-19 pandemic underlined the importance of clean water. Washing our hands with clean water is the minimum we can do to avoid getting infected. Already, massive numbers of people do not have access to clean water. If we do not safely treat and reuse faecal sludge and wastewater it will end up contaminating available sources of water, reducing supply and adding to the health burden of communities.

Centre for Science and Environment (CSE) researchers travelled over several states to cover stories of safe management of water, wastewater and faecal sludge and to explore the level of implementation of water supply and sanitation programmes (including for grey water). A few villages focused on rejuvenation of water sources while others spoke about strategically using both surface water and groundwater or shifted their focus to clean surface-water as the groundwater source had limited options for recharge.

This compendium brings together state water-supply programmes. The case studies illustrate how villages moved towards sustainable water supply by metering water supply, recharging local use and even using solar energy where the power supply is highly interrupted. It examines the management of grey water coming out of bathrooms and kitchens through household-, community- and village-level interventions. As safe water sources also need safe treatment of faecal sludge, it explores the different models set up by the states for treating and reusing the faecal sludge both onsite and offsite.

The last decade has seen an improvement of health in villages as a result of increased awareness of maintaining clean habitations. Innovations in rejuvenating and recharging water sources, protecting, ensuring sustainability and monitoring water sources are vital. Erratic rainfall patterns make recharging sources difficult, and building the capacity of the stakeholders hence needs special focus.

This volume comprises sixty-four case studies to illustrate successful action for rural water supply, grey-water and faecal-sludge management.

Government programmes for rural water supply, management of grey water and faecal sludge

In the 1950s, the first government-implemented rural water-supply scheme was launched to provide basic water supply to rural areas. Till the mid-1960s, schemes targeted only easily accessible villages. To tackle this, the Central government asked the states to identify their problem areas.

The introduction of the Accelerated Rural Water Supply Scheme (ARWS) in 1972–73 accelerated the push for drinking water supply. With the introduction of the Minimum Needs Programme (MNP) in 1974–75—introduced to improve the living standards of people—ARWS was withdrawn. But the outcomes of MNP were unsatisfactory, and ARWS was reintroduced in 1977–78.

The Accelerated Rural Water Scheme started by rectifying its shortfalls until the latest programme, Jal Jeevan Mission (JJM), was launched in mission mode. Under JJM, hand pumps and pipes for water supply were found to be the major extraction structures for groundwater. A large number of no-source villages were not fully covered due to declining groundwater, poor water quality and defunct water sources.

In 1985, the responsibility for rural water supply and sanitation at the Central level shifted from the Central Public Health and Environmental Engineering Organization (CPHEEO) to the Department of Rural Development that later became part of the Ministry of Rural Development (MoRD). In 2011, the Department of Drinking Water and Sanitation (DDWS)—which was part of MoRD—was separated from MoRD to form a separate ministry focusing on development of drinking water and sanitation in rural areas. The new department was called Ministry of Drinking Water and Sanitation (MDWS). In 2019, the Ministry of Jal Shakti was formed by merging the Ministry of Water Resources, River Development and Ganga Rejuvenation and the Ministry of Drinking Water and Sanitation. So, the Department of Drinking Water and Sanitation constituted again (as a department, not a separate ministry) under the Ministry of Jal Shakti. It provides technical and financial assistance to states to provide safe and adequate drinking water to and safe sanitation services to rural areas.

Shortfalls of the Accelerated Rural Water Supply Programme (ARWSP)

- In the selected districts, ARWSP covered 86 per cent of the villages, of which nearly 20 per cent were partially covered and 1 per cent had permanently defunct systems. Inconvenient locations of public supply points demotivated beneficiaries from using these sources.
- Excess iron, fluoride and bad odour made the water non-potable in many states.
- During the period of survey, around 87 per cent of extraction structures (for water) broke down.
- Several independent surveys reported absence of participation of communities in planning, implementing and O&M of water supply systems.
- Erratic electricity disturbed water supply in several villages.

Source: Planning Commission, 1996 https://niti.gov.in/planningcommission.gov.in/docs/reports/peoreport/cmpdmpeo/volume1/165.pdf as viewed on April 11, 2022.

In 1986, the introduction of the National Drinking Water Mission (NDWM) gave the Accelerated Rural Water Supply Scheme (ARWS) a mission approach. The Planning Commission and the Programme Evaluation Organisation undertook a study to evaluate the performance, implementation and impact of ARWS.[6] The study was conducted in January 1996 and completed by the end of March 1996 (except in Himachal Pradesh, where it was completed by the middle of May 1996). Two districts with one block each were selected with the maximum number of "no source" villages. Two villages under ARWS, one under MNP, and one no-source village were selected randomly from each block. In all, around 1,305 households, spread over 87 villages in 29 districts of 16 states, were selected for the study.

In 1991, ARWS was renamed Rajiv Gandhi National Drinking Water Mission (RGNDWM). In 1999, a Comprehensive Action Plan (CAP 99) was prepared to identify and cover not-covered (NC) and partially covered (PC) habitations. Over and above this, the Bharat Nirman Programme, launched in 2005, had a rural drinking-water supply component, which took care of all uncovered habitations identified under CAP 99. Bharat Nirman Programme also addressed the problems of slip-backs (on coverage of water supply) and water quality in the four years between 2005 and 2008–09. According to the 2008 Comptroller and Auditor General of India's report, in 2002–07 it was seen that except in 2005–07, only a little above 50 per cent of the target habitations got access to water.[7] Only in the last two years of survey the achievement was 78 per cent of the target (see *Table 1: Coverage of water supply in habitations in 2002–07*). It could be that the progress of coverage only geared up after the launch of the Bharat Nirman Programme which took care of the slip-backs of coverage although the fund utilization was high in the initial period of the study (see *Table 2: Fund utilization by states in 2002–07*).

In 1999–2000, the Sector Reform Programme was launched on a pilot basis in 67 districts of 26 states. Its goal was to transform from a target-based supply-driven approach to a participatory, demand-driven approach. In 2002, the programme was modified and launched as Swajaldhara, with two components known as Dharas. The first Dhara (Swajaldhara-I) was for a gram panchayat or a group of gram panchayats or an intermediate panchayat, and the second Dhara (Swajaldhara-II) was for districts as the project area.

Table 1: Coverage of water supply in habitations (2002–07)

Year	Targets (in millions)			Achievements (in millions)		
	Not covered	Partially covered	Total	Not covered	Partially covered	Total
2002–03	0.012	0.065	0.077	0.010	0.038	0.048
2003–04	0.017	0.073	0.090	0.010	0.042	0.052
2004–05	0.022	0.099	0.121	0.015	0.048	0.063
2005–06	0.051	0.055	0.106	0.031	0.052	0.083
2006–07	0.048	0.094	0.142	0.034	0.067	0.101

Source: Report No. 12 of 2008 for the period ended March 2007, Performance Audit of Accelerated Rural Water Supply Programme—ARWSP (Ministry of Rural Development, Department of Drinking Water Supply); https://cag.gov.in/en/old-audit-reports/view/13573 (as viewed on April 12, 2022).