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Jal Jeevan Mission Will Substantially Enhance Ease of Living With a Positive Impact on Health Status and Women Empowerment

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The Context

India's population is about 17 percent of the world population, but it is endowed with only 4 percent of the global freshwater resources.

Inadequate use of modern demand-supply management tools, technology, and lack of emphasis by policy makers and other stakeholders of the need to treat water as a precious natural resource with economic value and not as a free gift of nature, has exacerbated water security issues in India.

Many districts and cities in India face water scarcity, and this is likely to become more acute unless transformative initiatives are taken involving all stakeholders.

Research by NITI Aayog (National Institution for Transforming India) suggests that nearly 600 million Indians already face high to extreme water stress. 21 cities, including Delhi, Bengaluru, Chennai and Hyderabad, are projected to run out of groundwater by 2020, affecting 100 million people.

NITI Aayog has argued that without transformative initiatives, water security will worsen as the country's water demand is likely to double by 2030 due to sustained high growth, and India's vision of becoming a USD 5 trillion economy before then. Unless corrective measures are taken, involving all stakeholders, India's economic and social ambitions will be adversely affected.

Better quality water is not only a necessity for humans, but also for crops and for animal health, and for the fisheries sector. It is an essential component of sustainable broad-based development.

One of the major challenges faced by Jal Jeevan Mission (JJM) is groundwater contamination. In many rural areas, groundwater contains fluoride, arsenic, iron, salinity, nitrate and heavy metals[1].

The Design and Structure of the JJM

Among the key initiatives of the Prime Minister Narendra Modi-led government, Jal Jeevan Mission (JJM) was launched in August 2019. JJM aims to achieving greater ease of living throughout the country by fulfilling an essential need of providing good quality piped water to the households across the country (*Har Ghar Nal Se Jal*) on a regular and long-term basis by 2024. Robust systems and public health system reengineering are being undertaken to achieve the goal.

JJM also aims to reduce the burden of the women who need to walk many kilometers to fetch water, in some cases endangering their safety. JJM can be expected to address this aspect, and enable use of saved time for improving household welfare through market-based home production, or other pursuits. These aspects however need to be subjected to rigorous empirical policy-relevant research.

As on 15 August 2019, only 16.9 percent of rural households, or 32.3 million, out of the total 191.1 million rural households in the country had piped water connection[2].

The task therefore is challenging. Given the low level of water connections, for many rural households, JJM has the potential to significantly improve the quality of life as well.

JJM completion is expected to fulfill the Sustainable Development Goal number 6 of the United Nations.

Technology for achieving the JJM objectives have been part of the stock of global knowledge for decades. But in India, what has been lacking is the vision of the leadership, and the determination to organize with competence a system-based approach across the country, with coordination among many layers of government and stakeholders.

Prime Minister, underlining the pivotal role in the implementation, has strongly urged all sarpanches and village heads of the country to ensure more effective implementation of JJM.

On October 2, 2020 government launched a 100-day Jan Andolan (People's Movement) to ensure potable water supply to all schools and Anganwadi centers across the country.

Anganwadi is a type of rural mother and child care center in India. They were started by the Indian government in 1975 as part of the Integrated Child Development Services (ICDS) program to combat child hunger and malnutrition.

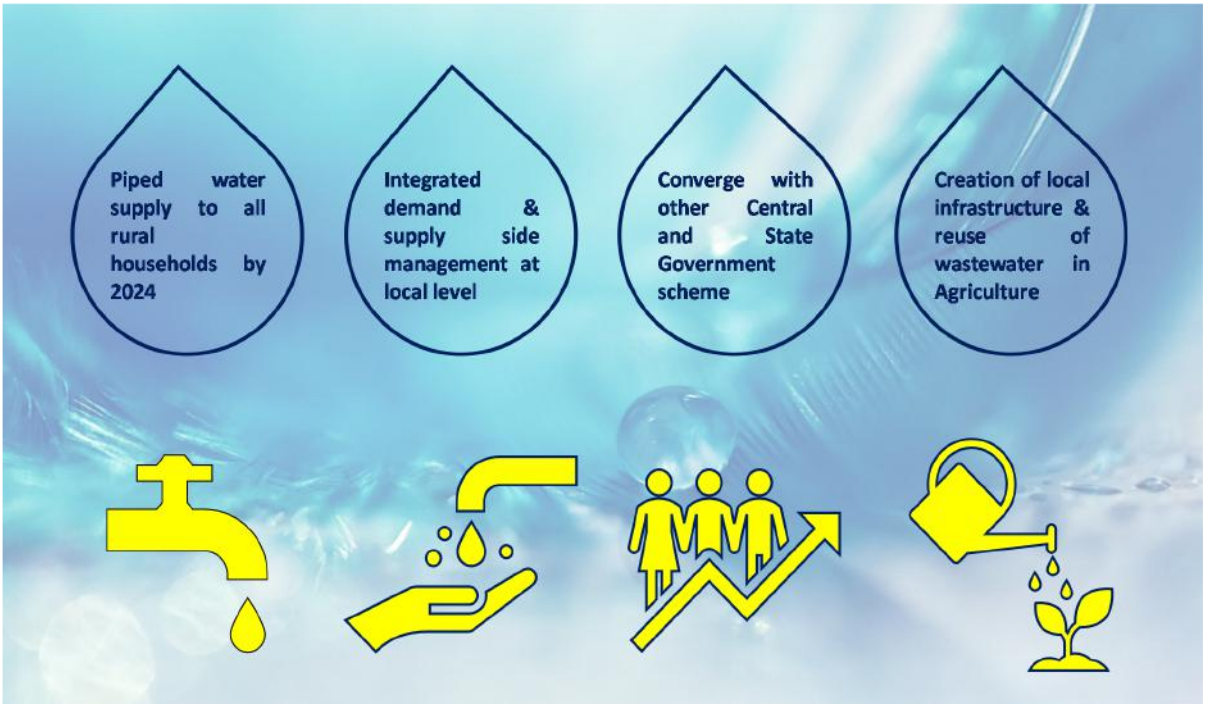
A typical Anganwadi center provides basic health care to Indian villages. It is a part of the Indian public health care system. Basic health care activities include contraceptive counseling and supply, nutrition education and supplementation, as well as pre-school activities.

To underline the determination, and to signal mind-set change, a new Ministry Jal Shakti to address all water issues has been established since May 2019.

The Ministry was formed by merging existing Ministries and divisions of Water Resources, River Development, Ganga rejuvenation, and Ministry of Drinking water and sanitation.

Jal Shakti' ministry has the responsibility for issues ranging from providing clean drinking water, international and inter-states water disputes, to the Namami Gange project aimed at cleaning Ganga and its tributaries, and sub-tributaries[3].

Figure1: JJM: A Systems- Based Integrated Approach[4]

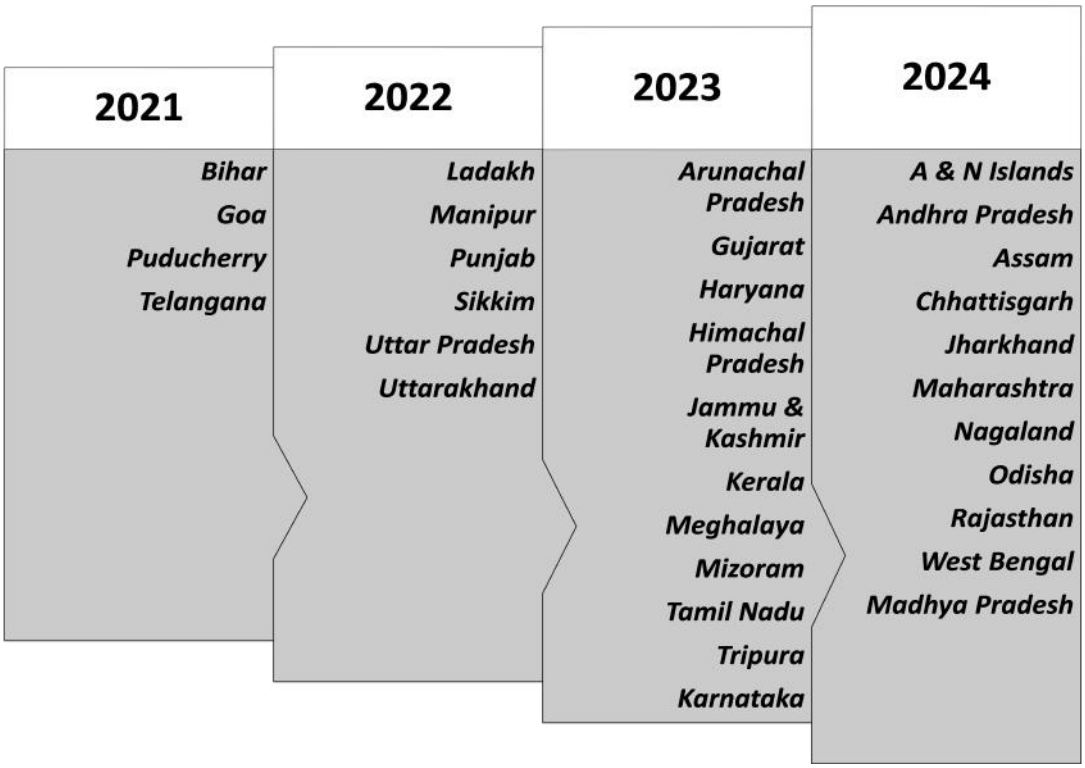


Another positive design feature of the JJM is the openness to new technologies in delivering the citizen-centric outcomes.

It is reported that the JJM has constituted a Technical Expert Committee to prepare a road map for measurement and monitoring of water service delivery system in rural areas. The JJM, in partnership with State Governments and sector partners, has started facilitating a sensor-based water supply system on a pilot basis in various villages. Gujarat has begun navigating the sensor-based rural water supply systems in 1,000 villages spread across five districts. Other States have also started pilot projects[5].

JJM in collaboration with Ministry of Electronics & Information Technology, announced Information and communication technology contest to develop innovative, modular and cost-effective solution to develop a smart water supply measurement and monitoring system to be deployed at the village level[6].

Time-Line for Completing JMM Goals by Different States and union Territories[7]



The primary KPI (Key Performance Indicator) of JJM is Functional Household Tap Connection (FHTC). This is supplemented by others such as the water quality, length of period during the day when water is available, and others.

Funding Arrangements

The JJM is projected to cost INR 3.5 trillion (USD 47 Billion) over a five-year period. Funds for regular Operations and Maintenance (O and M), often neglected in many infrastructure projects, have also been included as an integral part of project costs and funding.

Various local committees such as Gram Panchayat/ Village Water and Sanitation Committee/ Paani (water) Samiti or User groups are to play an important role in the operations and maintenance of the infrastructure developed under the mission. The inclusion of cost recovery for maintenance in another feature of good design of JJM.

The project cost does not include voluntary contributions, and labor and other services and materials supplied by the beneficiaries. Such efforts enhance acceptability of JJM to the community[7].

In the funding arrangements, principle of co-funding is applied. This is another positive feature of the JJM design as such co-funding reduces incentives for states and local bodies towards inefficient behavior, what economists call reducing moral hazard.

Thus, for the Himalayan and North-eastern states, Centre and State share the cost in the ratio of 90:10. For all the remaining states, funding ratio is 50:50. This arrangement takes into account differing geographies and capacities of different states, albeit in a rough manner.

Union territories receive 100 percent funding from the Central government, as their budgets are borne by the Central government.

The inherent nature of the Indian administrative structure, with 28 States 9 Union Territories, and 739 Districts (as of 2020), implies that coordination task for JJM is complex, and variations among the administrative entities is to be expected.

The 15th Finance Commission, whose Report (as of 22 November 2020) is not publicly available, has allocated tied grants of INR 58.2 Billion to the states to be spent mandatorily on (a) supply of drinking water, rainwater harvesting and water recycling and (b) sanitation and maintenance of ODF (Open Defecation Free) status.

Fund disbursement to the states has been kept flexible in this program. State that is performing better is entitled for the additional resources available from the center. This motivates the states to achieve their targets in timebound manner and encourages them to build sustainable water resources.

Progress in Achieving JMM Goals

The JJM has constructed very detailed dashboard which enables monitoring of progress, and detailed data for researchers and others to conduct micro-level surveys and analysis of extent of achievement of not just the broad goals, but also the intended health and economic impacts and behavioural change. The JJM also has political behaviour implications which could be researched[8].

JJM dashboard reports that out of 191.1 million rural households in India, as of 15 August 2019, there a were only 32.3 million households (16.9% of the total) which had tap water supply in the homes. This has increased to 58.6 Million (30.7% of the total) by 21 November 2020. In absolute numbers, in a period of about 15 months, during COVID pandemic period, 26.3 million households have been provided tap water, a very encouraging progress.

Among the states targeted for 2021 to achieve JJM goals, Goa is first state in the country to achieve 100% households tap water supply connections. In Telangana, the FHTC coverage has increased from 28.8% on 15 August 2019 to 98.8% as on 21 November 2020. It is also going the meet the 2021 target timeline.

Bihar has also made encouraging progress as evidenced in Figure 3. Its FHTC coverage has increased from only 1.6% of rural households to 57.0% by 20 November 2020. This augurs well for Bihar meeting its completion date of end 2021. The JJM is likely to significantly empower women in Bihar, and enhance their safety. There is scope for much policy relevant empirical research on the JMM progress in Bihar[8].

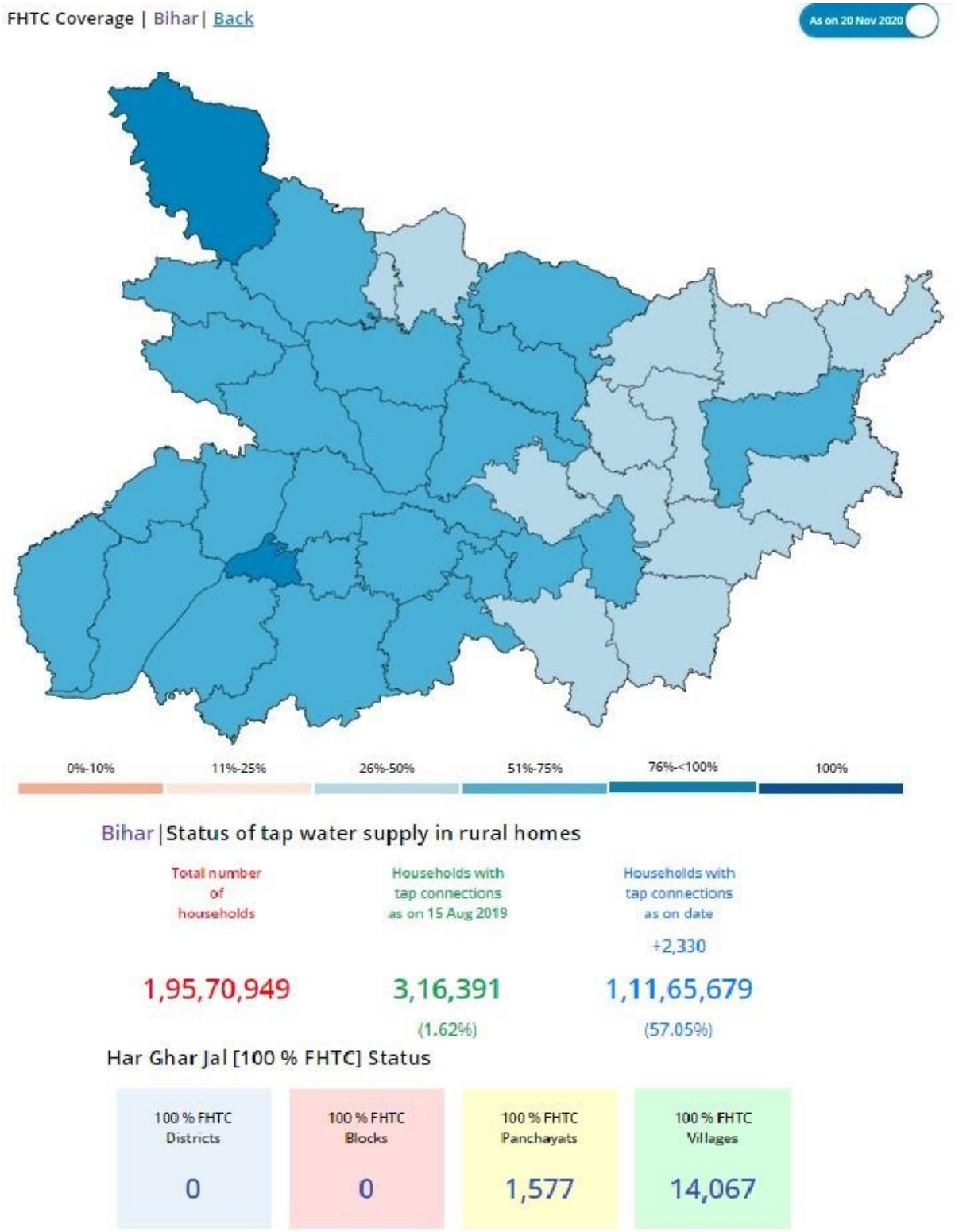


Figure 3 Progress of JJM in Bihar

A State where progress of JJM needs to be accelerated is Uttar Pradesh. It has 26.3 million households to cover, but the FHTC coverage has increased only from 2.0% of the total households on 15 August 2019 to 6.2 % of households as on 21 November 2020. The target date for Uttar Pradesh is 2022. This would require much greater focus on JMM in the state[8].

Concluding Remarks

The JJM, launched in August 2019, is among the transformative initiatives of the Prime Minister Narendra Modi-led government. As the column suggests, JJM has many features of good design and structure.

To deliver potable water supply to all households in the country by 2024 will not only substantially improve ease of living, but also improve health status, and empower women. Freeing women from the task of fetching water, which sometimes creates safety issues, will also potentially provide them with opportunities to improve household welfare by market, home production, and other activities. It may bring about positive social and political behavioural change.

These however need to be ascertained through rigorous objective empirical evidence-based research. The JJM has developed an excellent dashboard providing almost real time progress of the JMM throughout the country. It is up to the research community, both those in technological and scientific fields, and those in social sciences, to utilize it, and constructively contribute to the goal of ensuring potable water to all households, and good quality water for animals, crops, and fisheries sector.

It has been said that in the 21st century water as a natural resource will be what oil was to the 20th century. Everyone in the country has a stake in helping to achieve the goals of JJM.

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