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WATER RESOURCE MANAGEMENT SYNTHESIS REPORT

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Water is the bedrock for healthy, stable, and sustainable civilizations. Water scarcity can aggravate fragility and conflict, disrupt economic prosperity, and destroy ecology and ecosystems. Globally, at present, there is an unprecedented pressure on water resources. Increasing demands on water with a rapidly growing population, combined with climate change led hydrological uncertainty and extreme weather events, are believed to be some of the biggest threats to global prosperity and stability.

India is currently undergoing a significant water crisis. According to the average per capita water availability, India falls in the category of water stressed[1] regions. And, for a significant proportion of the population, the per capita water availability is close to water scarcity[2] level. India has about 4% of the world's freshwater resources but is home to nearly 17% of the world's population.[3] 70% of India's surface water is contaminated[4]; nearly 45% of urban India and 85% of rural India's drinking water needs, and 62% of irrigation is dependent on ground water resources[5]. Water scarcity in India, the NITI Aayog report states, is a consequence of both limited availability of water resources as well as their mismanagement.

The situation in India warrants immediate and necessary interventions to make water-use efficient and sustainable. Water Resources Management (WRM) is a process of attaining water security that includes planning, developing, and managing water resources, in terms of both water quantity and quality, across all water uses. It seeks to ensure sufficient water of adequate quality for drinking water and sanitation services, along with that for food production, energy generation, inland water transport, recreation, ecosystems, and other uses. WRM also entails managing water-related risks, including floods, drought, and contamination.[6]

On 9th June 2021, Water For People India and IRC organised a webinar to discuss steps taken towards water security in India through WRM; to exchange experiences and learnings from each other. With panellists including representatives from the government and civil society, and subject matter experts, the webinar was attended by 113 participants. The webinar highlighted that in addition to infrastructure development, better management of water resources requires mechanisms for institutional strengthening, information management, and community participation.

In terms of the institutional landscape, the most proactive step towards water management taken by the Government of India has been the creation of the Ministry of Jal Shakti (MoJS), consolidating interrelated functions pertaining to water management under one ministry. The various schemes launched by the Ministry

[1] There are multiple definitions available for 'water stressed'. The NITI Aayog in the report on Composite Water Management Index refers to the Falkenmark Index, as per which water stressed refers to a country or region that has less than 1700 m3 year of water per capita.

[2] There are multiple definitions available for 'water scarce'. The NITI Aayog in the report on Composite Water Management Index refers to the Falkenmark Index, as per which water stressed refers to a country or region that has less than 1000 m3 year of water per capita.

[3] Amitabh Kant. June 2018. 'To avert impending water crisis, India must respond urgently to managing resources better'. The Economic Times. Available at https://economictimes.indiatimes.com/news/economy/policy/to-avert-impending-crisis-india-must-respond-urgently-to-managing-water-resources-better/articleshow/64724673.cms?from=mdr. Last accessed in June 2021.

[4] NITI Aayog. August 2019. 'Composite Water Management Index'. Available at http://social.niti.gov.in/uploads/sample/water_index_report2.pdf. Last accessed in June 2021.

[5] Central Ground Water Board Ministry of Water Resources, River Development &Ganga Rejuvenation. June 2017. 'Dynamic Ground Water Resources of India'. Available at http://cgwb.gov.in/Documents/Dynamic%20GWRE-2013.pdf. Last accessed in June 2021.

[6] The World Bank. https://www.worldbank.org/en/topic/waterresourcesmanagement#2. Last accessed in June 2021.

reflect the much-needed integration in water management – that of ensuring water and sanitation services to everyone as well as management of water resources (surface and ground). For instance, the flagship scheme of Jal Jeevan Mission (JJM) aims to provide safe and adequate drinking water to all households in rural India through individual household tap connections by 2024. Schemes such as Atal Bhujal Yojana (ABY), aimed at improving groundwater management, address the water quantity needs of JJM. Further, Swachh Bharat Mission (SBM) 2, focusing on solid and liquid waste, makes a significant contribution to addressing the issue of water quality.

Water and sanitation are subjects that fall under the State List, as per the Constitution of India. The Government of India, however, makes important contributions to institution strengthening, by identifying the national goals and priorities, setting the necessary regulatory frameworks, and providing finances and technical support.

WRM entails adopting an integrated approach. In practice, however, this becomes difficult as there are multiple departments engaged in water resources that function in silos. There is, therefore, an urgent need for convergence in functioning, at the national, state and district levels, and particularly at the Gram Panchayat level.

A successful WRM initiative is dependent on a robust monitoring system that can facilitate informed decision making. Limited water data, in terms of coverage, robustness, and efficiency, is stated to be one of the key drivers of water scarcity in India.[7] There continue to remain many unanswered questions in the sector, such as the amount of slippage in water supply due to lack of source sustainability, the additional investments required to prevent slippage, the regional variations therein, or the impact of slippage on communities. Data on these questions can provide insights for ensuring sustainable services to everyone. It is extremely crucial, therefore, that data, analytics, and research drive planning, implementation, impact assessment, and policy making.

While data collection is important, it is equally important that the data is accessible to and usable by the community. For this, it is crucial to demystify the knowledge pertaining to WRM. As per the Constitution of India, Gram Panchayats have the responsibility to plan for water and sanitation services. As they are the ultimate decision makers, it is important that resources (technical expertise to strengthen understanding of WRM, and data collection and analysis) are allocated at the Gram Panchayat level for better planning, budgeting, implementation, and monitoring, towards improved services.

In civil society organisation led initiatives on WRM, it emerged during the webinar, there has been a practice of engaging community members, going beyond awareness generation to active involvement. Organisations such as Arid Communities and Technologies (ACT), People's Science Institute (PSI) and PRASARI have in their initiatives focused on developing community cadres for activities including data collection and monitoring. Taking up a two-way knowledge sharing approach, ACT made use of user-friendly tools for the community cadres, known as Bhujal Jankars, to get involved, as well as build their capacities to, as knowledge carriers, spread awareness and educate the wider community for informed decision making.

Community engagement is crucial to foster ownership and ensure sustainability of the initiatives. For this purpose, the Aga Khan Rural Support Programme engaged with and worked towards empowering the Ward

[7] NITI Aayog. Ibid.

Implementation and Management Committees (WIMC) and women's self-help groups in Bihar. PRASARI ensured that the community members were engaged from the very beginning – the planning process - of the spring water management initiative in the Himalayan West Bengal. It also provided the necessary technical know-how to the community cadres to carry out the various activities therein.

Engaging community in the process can also facilitate change in practice. In PSI's work on mitigating fluorosis contamination in Thar, community involvement in identification of dug wells suitable for drinking water brought about a change in community practice as well. While demystifying WRM is required, it is equally important to acknowledge that WRM is a problem locally addressed thus requires local solutions. For this purpose, the important contribution of local knowledge cannot be ignored. Samerth Charitable Trust, for instance, combined traditional knowledge with technical expertise to enable community led monitoring in its WRM project in the tribal areas of Chhattisgarh.

Way forward

India is severely water stressed. WRM is the need of the hour to ensure WASH services and continuance of other uses of water necessary for the economy and preservation of the ecosystem. An effective WRM strategy, however, needs to look beyond infrastructure creation and technocratic focus. It needs to focus on institution strengthening, robust data collection and community engagement.

- It requires a multi-disciplinary approach, with equal importance given to human behaviour as to technical aspects. The disciplinary silos start emerging the further one moves away from the ground. Thus, it is particularly important that at the policy level and in research/ academia, the multi-disciplinary approach is maintained.

- It is important to understand WRM as more than managing supply and demand of water. It entails cross cutting issues of competition, equity, productivity, and more. It is important to bring communities close to the resources that they depend on for various purposes, make them aware how the cross-cutting concerns affect it.

- Further, for sustainable WRM, there is an increasing need for partnerships and collaborations in the sector, keeping the community at the centre. For instance, CSOs collect a lot of data many of which does not get used because of expertise bottleneck. In a collaborative approach, CSOs will be willing to share their data with technical institutes, to process, analyse and contribute to the sector knowledge.

- Collaborations are also important between CSOs and the government (both at the Centre and the states). The webinar brought to the fore that while a lot of data is being collected by the Government of India, the usability of the same, especially at the community level, is yet unknown. There is, thus, a need for CSOs to share feedback and support the government in making data more user friendly. Further, there is also a need for CSOs to share their experience of data collection, particularly in terms of aquifer mapping (an exercise currently being undertaken by the Government of India and is expected to be continued cyclically) to make the government process more robust. Another area of support that was highlighted was supporting the government in developing the service level benchmarks for rural water supply. The Government of India, under JJM, is in the process of drafting service level benchmarks and functionality indicators, linking them to resource transfers. CSOs can, thus, share valuable inputs towards shaping the same.

Key points

1. WRM is the need of the hour in India to ensure sufficient and adequate quality water for all uses, including water supply and sanitation.

2. A successful WRM initiative requires strengthened institutions that work in an integrated manner. Therefore, it is crucial that there is convergence of departments working on water and allied fields to work towards a joint vision of attaining water security.

3. There is a crucial need for accessible and useable data, in terms of coverage, robustness, and efficiency, to influence planning, implementation and monitoring of WRM initiatives.

4. Working with communities is central to awareness building, ownership and sustainability of WRM initiatives.

5. WRM requires to go beyond technical and embrace a multi-disciplinary approach.

6. Collaborations and partnerships can strengthen WRM strategies.