

Inputs for the National Water Policy 2020

Submission by: S M Sehgal Foundation, Gurugram, Haryana

In 2020, India is determined to overcome the challenges in achieving the Sustainable Development Goal 6 focusing on access to clean water and sanitation for all its citizens. The initiative to revise the National Water Policy is a timely step by the Ministry of Jal Shakti, Government of India to consolidate the efforts aimed at effective water resource management, and its governance.

The approach adopted in The National Water Mission under the aegis of the Ministry includes: citizen engagement in water conservation efforts and improved water use. Utilizing this foundational approach, in this document we, the S M Sehgal Foundation (SMSF) outline key issues related to water security and safety from our experience in rural pockets of the country and offer potential solutions for replication and scaling up through inclusion in the policy document.

1. Improving Water Use Efficiency through Demand Side Management

Sensitization, Awareness Generation & Capacity Building

The water landscape in India continues to grapple with a critical issue of effective demand side management to achieve higher use efficiency. A critical factor to consider is the low water literacy amongst the population, failing which supply side enhancements will yield limited success.

- **Community radio as a media tool. There is a need for innovative approaches and technologies that overcome the barriers of lower water literacy. Community radio provides one such mechanism and tool.** It presents itself as an effective medium in providing vital information and resources to villagers on water awareness and water-related health topics. This medium overcomes barriers of literacy and access. A working example of this recommendation is Alfaz-e-Mewat (Rural Voices of Mewat), a community radio station run by SMSF (SM Sehgal Foundation) that reaches hundreds of marginalized communities in Nuh district of Haryana through its water literacy programs that are suited to the cultural ethos of the region and place rural citizenry on a pedestal where they can phone in to seek answers to their queries and express their thoughts.
- There is a need for wider exhibition and dissemination of rain-water harvesting technologies. The National Institute of Rural Development and Panchayati Raj (NIRDPR), Ministry of Rural Development, Government of India, created the **Sehgal Foundation Water and Wastewater Resource Center (SF-WWRC) at the Rural Technology Park on the NIRDPR campus in Hyderabad.** It exhibits rainwater harvesting models, technology for the creation of freshwater pockets in saline aquifers, and drinking water adaptive technologies. Working and demonstration models are displayed that serve as capacity-building tools for rural villages from across the country alongside practitioners who seek innovative solutions and can replicate the demonstrated models thereby amplifying outreach and impact. There is a need to scale up the creation of such centers.

Safe Water Consumption at Point of Use

Drinking water provisions in rural areas are often marked by service delivery issues that make safe water quality difficult to ensure. There is a need to promote point of use Household Water Treatment Systems (HWTS) while ensuring improvements in service delivery infrastructure. This can further be accomplished by the following measures.

- **‘Water Safety Plans’** need to be created through undertaking comprehensive risk assessment and management to ensure safe supply from catchment to consumer. This can help eliminate

substantial risks associated with the water delivery and consumption chain. This will also ensure higher success rate of state wide drinking water schemes specific to every state's context.

- It has been experienced for long that in villages having water quality issues, groundwater community based systems are not successful. There is a need to **promote simple and sustainable HWTS which do not need external support**. JalKalp Bio sand filters (JalKalp¹) for safe drinking water represents an effective, sustainable, low-cost filter developed by SMSF. It is effective against pathogens such as E. coli, total coliforms, parasites, microbes, and worms, as well as eliminating turbidity, iron, manganese, and arsenic contamination. The filter is a sustainable solution requiring no maintenance cost and is priced at Rs.3500. Such technologies need to be devised and promoted on a large scale.

2. Rainwater Harvesting to address water scarcity for WASH

Freshwater availability is very often a challenge in supporting WASH infrastructure such as sanitation and adequate water availability to ensure hygiene. The best route is to procure and store freshwater through rainwater harvesting to address long term availability.

Locally Managing Water Sources in Public Schools

- Creating water availability in schools should be top priority. There is scientific evidence to prove that by creating water availability in schools, enrolment increases, academic records improve, and clean water is available for drinking and preparing midday meals, all of which result in better overall health. Numerous examples of converging school infrastructure development with water requirements for WASH have been demonstrated in Rajasthan and Haryana². Where groundwater is deep, rainwater from the school roof is collected into a filtering tank through interconnected pipes and stored. Excess rooftop rainwater is diverted into a recharge well for groundwater recharging. Overflow wastewater from drinking water faucets is diverted to an underground tank for horticultural use.
- **A freshwater pocket within the saline aquifer is created by an innovative rainwater harvesting model developed by SMSF³**. By extending the height and the depth of a recharge well—higher above ground, and deeper into the underground saline aquifer—hydrostatic pressure increases within the well, allowing the harvested rainwater to form a “pocket” of freshwater within the saline water. Pressure from the surrounding saline water keeps the freshwater pocket intact. A hand pump is used to extract harvested rainwater, and does not require cost-intensive water storage structures of limited capacity. This technology is being successfully used to improve access to sweet water in public schools that suffer from acute groundwater salinity. It has been shown that the costs incurred to obtain drinking water has drastically reduced and schools have become more water secure.

Community Based Sanitation Solutions

- There is a need to promote innovative designs and technologies for safe disposal of domestic wastewater. Wastewater accumulation on streets is a common sight in Indian villages. This leads to creation of dirty puddles that eventually act as breeding grounds for pathogens and their carriers. SMSF installs **soak pit structures at household and community level. The innovative design of silt trap integrated with soak pit is aimed at safe disposal of wastewater**.

¹ Refer to <http://www.smsfoundation.org/wp-content/uploads/jalkalp-water-filter.pdf>

² Refer to Transform Lives Project run by Sehgal Foundation <http://www.smsfoundation.org/transform-lives>

³ Refer to <http://www.smsfoundation.org/wp-content/uploads/2016/06/Rainwater-Harvesting.pdf>

3. Renovation of Traditional Structures while Securing Livelihoods

- **Revamping traditional water structures** is an efficient and cost effective method to improve water harvesting and availability. This needs to be promoted on a large scale. In the states of Kolar and Anantpur, SMSF has rejuvenated traditional water tanks and alongside initiated an innovative practice of using silt extracted from tanks in farmlands to improve farm productivity.
- On similar lines, **rejuvenating old village ponds** through desilting can be successful in improving water availability for agriculture and livestock.

4. Ensuring Sustainability

- **Local citizens need to be involved in creating an institutional mechanism that is accountable for developing and implementing water safety plans for local water supply and ensuring water security.** The sustainability of these mechanisms can be simultaneously ensured through developing a robust system of capacity building involving NGOs working at the grassroots.
- **Documenting existing/historical water structures and their catchment areas is essential.** .Lack or absence of documentation of catchment areas of traditional water harvesting structures has led to their incremental encroachment over time. Thus, we are continuously losing an enormous amount of recharging potential. Documentation on such lines can help in phase wise revamping of structures and rejuvenation of recharging potential.
- **Improving Watershed designs for improved & sustainable water quality- Minimising the length of runoff surface flow through mass recharging via battery of recharge wells is essential.** As the length of run off increases, the accumulation and quantity increases proportionately along with simultaneous addition of contaminants along the way leading to incremental deterioration in water quality. As much as the length increases, the contaminants will keep adding leading deterioration in quality of water. As soon as we install a mechanism to recharge it the quality will improve, the quantity will be handleable and it will add to the local water resource.