

STRATEGIES TO MAKE WATER ATMs SUSTAINABLE

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SEWAH SWE ALLIANCE PARTNERS



EXECUTIVE SUMMARY

On May 18, 2023, at Beyond the Pipe Forum in India, under the program SEWAH – Sustainable Enterprises for Water and Health, an alliance between Safe Water Network India and USAID/ India, the decentralized, safe water solution or Water ATM implementers and stakeholders convened for an interactive discussion to discuss ‘Strategies to make Water ATMs Sustainable’ in Delhi. The forum had participation from ULBs, Water Board, SWE implementers, water sector experts, funders, civil society, and academia. The roundtable initiated policy dialogue on subsidy support for SWEs similar to the piped water utility, and the Chief guest, Mr. Virender Kumar- Chief Engineer Delhi Jal Board, invited the SWE implementers to provide suggestions for the upcoming tender of ~500 Water ATMs in Delhi.

The program began with lighting the lamp, followed by addresses by the Chief Guest, Mr. Virender Kumar- Chief Engineer Delhi Jal Board, who highlighted the need for Water ATMs in urban cities for quick, safe water access to the citizens as the cities are expanding rapidly due to migration and urbanization. He focused on the reliability of services and transparency of data sharing.

This was followed by the release of the report ‘Financial and Operational Performance of Safe Water Enterprises in India’ by the panelists. Poonam Sewak V. P. Program and Partnerships, Safe Water Network shared the report highlights. The Report is based on the actual performance data and not projections. As per our analysis of +7000 Water ATMs set up by SWE Implementing partners under the [SWE Alliance](#) – Drinkwell Systems, JanaJal WoW, Rite Water Solutions, WaterHealth India, Waterlife India, and Safe Water Network India across more than 20 States of India over the last two decades identifies the level to which these SWEs can fund themselves from the water sale revenue and what subsidy is required for reliable service delivery. The Report also captures the Financial and Operating Performance of SWEs set up by the State governments. **The Report has four sections:** Section I: The introduction captures the need of SWEs and some of the leading SWE implementers. It defines categories of SWE Life Cycle costs into various levels, such as field, cluster, partial cost, full cost, etc., to understand to which level the SWEs are sustainable and what are the sustainability gaps. Section II: SWE Operating and Financial Performance describes the various SWE models and their risks. Section III: Viability Gap and Subsidies presents the annual viability gap for SWEs to be sustainable and describes the costs that are unmet from the revenues of the daily water sale. Section IV: Subsidy Model explains the various subsidy models in cash or kind available for the SWEs.

This was followed by panel discussion where each of the SWE implementing partner shared their model, its operational and financial data and funding gaps. Participating in the panel were i) Sudip Sarkar, Chief Coordination Officer, Drinkwell Systems ii) Kapil Sharma, Head of Operations & IT, JanaJal WoW iii) Arti Verma, Head – CSR, Waterlife India iv) Sanjay Kumar Jairath, DGM, WaterHealth India v) Aseem Kumar, Director, Maithri Aquatech and vi) Poonam Sewak, Trustee & VP – Programs & Partnerships, Safe Water Network

The presentations and discussions highlighted the success factors that determine the operational and financial sustainability of the Water ATMs over the long term: (a) Cluster-level O&M support required for the ATMs, (b) Need for an Asset Renewal Fund for long-term high value spares (c) Financial Discipline among communities and social entrepreneurs, (d) Affordable Pricing and equitable distribution ensures that no one is left behind, and (e) importance to Relocate the unviable ATMs to preserve capital invested.

For the survival and sustainability of the SWEs, targeted result-based subsidies can be a powerful and progressive solution. Subsidies need to be smartly targeted, transparent, tapering, and efficient. SWEs need an average subsidy of \$1000-1400 per annum to cover the Cluster management costs while ensuring affordability to the most underprivileged communities. The actual subsidy is a function of many factors, including population served, demand generated, pricing, willingness to pay, the proximity of SWEs in the cluster, raw water quality, community involvement, and ownership, among many others. There is need for **Innovative financing** that mobilizes blended financing options by increasing the returns earned or reducing the risks investors bear. However, given low revenues due to affordable prices (US\$ 7 ¢ - 15 ¢), these SWEs often need viability gap funding.

Not unlike the water utilities globally, recognizing subsidies in the SWE sector is necessary to ensure affordability for the poorest of the poor, Operational and Financial sustainability over a lifetime of the asset, adherence to the highest quality standards, and creating livelihoods for economic prosperity. Piloting more **Results Based Framework Subsidies** designed to fund viability gap on achievement of desired social outcomes can help the sector perform better.

At the Forum the report ‘Financial and Operational Performance of Safe Water Enterprises in India’ was released. The report can be accessed [here](#).

Access the SEWAH video [here](#).

HIGHLIGHTS FROM THE REPORT

Lifecycle cost of safe water enterprises

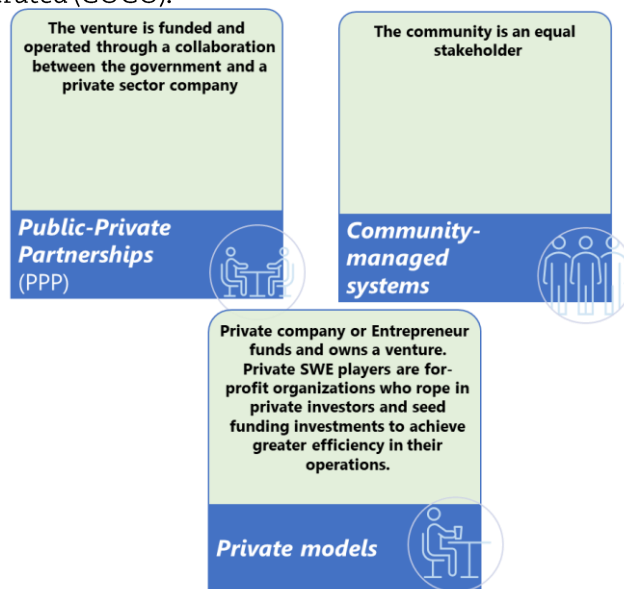
For SWEs to achieve financial sustainability, it is critical to cover the total life cycle costs. These costs include

- **CapEx:** Capital Expenditure, which is the capital invested in constructing fixed assets, largely infrastructure. The total CapEx required to set up a SWEs depends on the treatment technology deployed, the unit's capacity, technological innovations, water extraction cost, and civil construction.
- **OpEx:** This refers to the local Operating cost that includes the operator's salary, entrepreneur return, costs of monthly electricity, raw water source, consumables, sim cards, daily digital reporting, and water quality testing using Field Test Kits (FTKs).
- **CapManEx:** This refers to the (occasional) costs of renewing (replacing, refurbishing, restoring) and servicing, stocks and spares, and technicians.
- **ExDS:** The Direct Support expenditure costs include IEC activities, training, monitoring, reporting, audit, management costs, and rentals.
- **ExIS:** The Indirect Support expenditure costs which include trained skilled professionals, technicians, and management cost

The pricing for water is affordable based on the MoU with the local governing authority the ULB in cities and the Gram Panchayat in rural. The affordability usually makes it difficult to reach full CapManEx making it one of the main reasons for high slippages in the sector. The private sector is reluctant to participate as the SWE tenders are not fair to risk leaving the CapEx, ExDS and ExIS to be borne by them.

Operating models of SWEs

Safe Water Enterprises fall broadly into three basic categories of economic models which include public-private partnerships (PPPs), company-owned and operated (COO), and company-owned, community-operated (COCO).



SWEs have been limited to either being implementers as part of Government tenders or as Corporate social responsibility (CSR) partners. They are usually starved of fund/capital. Therefore, there is a need for new-age innovative operating models that can attract significant funding to enable the scale-up of SWEs.



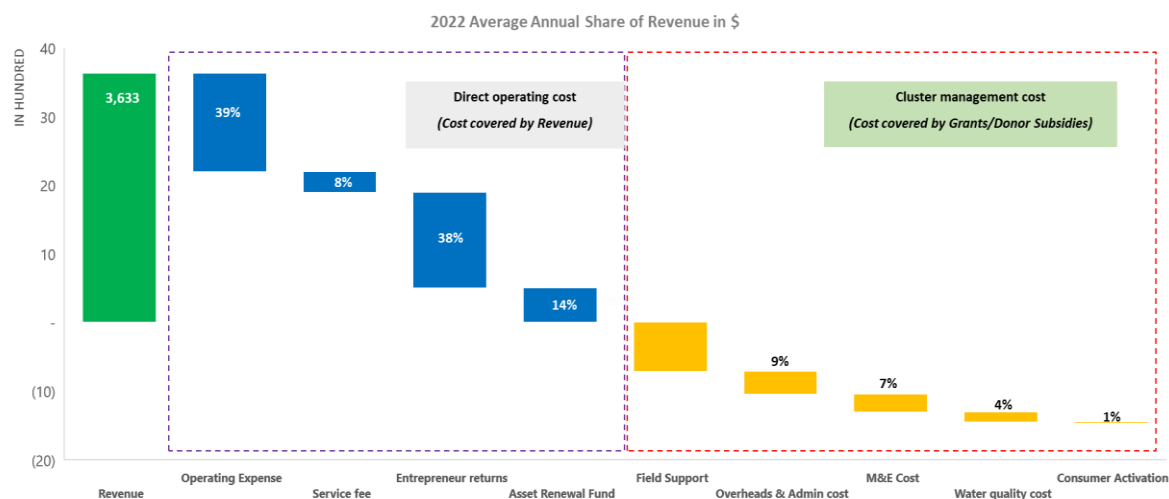
Highlight of the Chief Guest Address- Shri Virender Kumar, CE, Delhi Jal Board

Water ATMs are a much-needed solution for the 24x7 availability of Safe Drinking Water. The government of Delhi is planning to set up ~500 Water ATMs in the city. We are keen on private sector/ NGO participation and building upon the gaps of the past tenders. We seek the organization setting up the Water ATM to select their site and plan sustainability. The contract period would be for five years, and water pricing will be decided in consultation with all stakeholders.

I am happy to see two of my Delhi partners at the conference. I invite SWE Alliance to share suggestions for the Delhi Jal Board Tender for Water ATMs. Share the Tender suggestions in the week of May 22 and join us for discussion.

UNDERSTANDING THE FINANCIAL PERFORMANCE

Financial sustainability has been one of the biggest bottlenecks in scaling Safe Water Enterprises. Revenues from the water sold at the SWEs are priced affordably, usually at Rs. 5/20L, \$c 7/20L. These are sufficient to cover operating costs, including regular repairs and preventive maintenance. Refer to the graph below, which shows the typical revenue share for various expenditure heads in an optimized SWE operation.



Revenues from water sales cover the costs at the local operating level, including operator's salaries, electricity, chemicals, and consumables, and the cost of regular repair and maintenance, the cluster management costs associated with ensuring sustainability are not covered by revenues. SWEs need performance-linked result-based viability gap funding support, both direct and indirect 20% for field support, 1% for consumer activation, 4% for water quality testing and 7% for Monitoring & Evaluation, and 9% for overhead and admin cost. The total VGF needed is approximately 41%.

VIABILITY GAP AND SUBSIDIES

Many private-sector players show a willingness to expand their services footprint but do not have the capital for investment and hence seek public subsidies and investments. Therefore, many such SWEs need constant viability gap funding support, both direct and indirect, and to support weaker SWEs, a portfolio approach helps cross-subsidize.

For the survival and sustainability of Safe Water Enterprises, subsidies can be powerful and progressive tools ensuring that all people benefit from reliable water supply services. Subsidies need to be smartly targeted, transparent, tapering, and efficient. The reforms recommended include:

- Promoting subsidies that help extend services to under-or unserved areas by reducing upfront costs and by spreading out costs over time, such as through no- or low-interest loans
- Identifying valid and feasible indicators correlated with income: Design CapEx subsidies to attract and leverage additional long-term sources of capital.
- Viability Gap funding grants as a subsidy tool that the Governments can use to incentivize private investment
- Performance-linked subsidies to be disbursed on achieving measurable outcomes can be an effective tool for results-based financing

Innovative financing models/Subsidy models can play a critical role in mobilizing investments and strengthening the financing and operational systems in the SWE sector. Pay for success, impact bonds, viability gap funding, free water mandates support, and other direct or indirect subsidies will help stimulate the sector.

SUBSIDY MODELS

- **Result-Based Funding:** A performance-based contract that allows a financier, usually a philanthropic or governmental/public entity, to hire and pay for the services of a service provider, such as an impact-oriented enterprise or NGO, to execute a socially or environmentally beneficial initiative during an agreed-upon timeline
- **Impact Bonds:** Impact bonds are highly structured products that require collaboration between multiple stakeholders, quality data collection, and a sophisticated and stable legal framework. Thus, it can be challenging to implement in developing countries like India.
- **Operational Viability Gap Funding, Free Water Mandate Support, Mixed subsidy – Cash and Kind, and other funding models and optimization routes** can play a critical role in mobilizing investments and strengthening the financing and operational systems in the SWE sector

SWE implementors prioritize funding mechanisms that align with the organization's mission and values, and that do not place a significant financial burden on them. Therefore, they are not interested in repayable funding mechanisms, which typically require repayment of the funds over a specified period of time with interest.

Realistic pricing, guidance on tariff structures, performance-linked subsidies, defined outcomes with transparency, institutional alignment, and PPP with diverse stakeholders will help derive maximum value in the sector.

WAY FORWARD

A few crucial sector-wide interventions to mainstream SWEs as a sustainable drinking water supply approach and achieve desired positive impact on public health are:

- Recognize that water cannot be priced fully and SWEs like the water utilities need long-term subsidies and capital to fund the viability gap
- Pilot more results framework-based subsidies designed to fund the viability gap on achievement of desired social outcomes.
- Build in Life Cycle Costs to ensure the sustainability of the projects and ensure capital preservation.
- Incentivize private sector participation to improve efficiencies and reduce the gap in funding over the longer term.
- Promote digital innovations and reallocate government investments to include sustainability initiatives, e.g., skills building.
- Developing SWE benchmarks with social, operational, financial, institutional, and environmental indicators rather than focusing on just cost recovery



Model documents for Water ATM Scale Up

1. [Design Construction, Installation, Operation & Maintenance of Water ATMs with Viability Gap Funding](#)
2. [Operation & Maintenance of Water ATMs & Terms of Reference](#)
3. [Water ATM Audit](#)
4. [Community Drinking Water Treatment Plants](#)
5. [Code of Practice for Design, Installation and Maintenance of Community Drinking Water Treatment Plants \(CWTP\)](#)

In the Beyond the Pipe Forum, on 18th May 2023 at India Habitat Center titled 'Strategies to make Water ATMs Sustainable' the report 'Financial and Operational Performance of Safe Water Enterprises in India' was released.



From left to right: Kapil Sharma – Head of Operations & IT, JanaJal WoW, Sudip Sarkar - Director, Drinkwell Systems, Virender Kumar – Chief Engineer, Delhi Jal Board, Chigozie Okwu –AOR USAID India, Poonam Sewak - V.P. Programs and Partnerships Safe water Network India, Arti Verma, Head – CSR, Waterlife India, Sanjay Kumar Jairath - DGM, WaterHealth India, Aseem Kumar - Director, Maithri Aquatech

“ On basis of our experience of operating ~750 Water ATMs pan India , Water ATMs are barely OpEx sustainable in majority of cluster and suffer from surplus unutilized capacity. Consumer finds it difficult to carry 20L water, and the catchment area is limited to a maximum of 500m. for a walk-in consumer. We propose that safe water be classified under the “Essential Commodities” category and be exempt from commercial tariffs regarding electricity, raw water, and rents, and the consumer be provided the convenience of water delivery at home. ”

 Mr. Kapil Sharma


“ We have set up Water ATMs in various States in India, and our experience says that we need subsidies in cash or kind for Water ATMs to function for their whole life. We invest heavily in essential elements like IEC and consumer activation. This is usually unfunded but essential for revenue generated from daily water sales. Our operations are sustainable up to Cluster Management cost, but costs of supervision and staff salaries need support. Factors other than L1 must be considered while awarding Tenders, and emphasis should be on past performance, best practices, and innovation. A rigorous Need Assessment is needed by Local Govt./ ULB before issuing a Tender. ”

 Ms. Arti Verma


“ Drinkwell uses HIX nanotechnology for water purification and wherever necessary is providing solar enabled water ATMs. With respect to sustainability, we are able to cross subsidize in a cluster to achieve local OpEx. The model works well in rural and poorly in urban. There is a need for VGF at CapManEx level, supervision and staff. ”

 Mr. Sudip Sarkar


“ From our recent experience of setting up Water ATMs in Delhi, we face the challenge of timely delivery of site and associated infrastructure by the ULB, leading to cost escalation. There are rampant cases of theft and vandalism of the Water ATMs. We cannot solely rely upon the CSR funds for setting up the Water ATMs but need public funding to participate meaningfully with ~100 Water ATMs in the cluster. ”

 Mr. Sanjay Kumar Jairath

“ The Water ATMs are sustainable in rural but like other implementers we too face a huge challenge in sustainability in the peri-urban model despite the government providing subsidy in kind with respect to land and permissions for advertising. The urban consumer is unaware of the location of Water ATM, consumer footfall is poor, urban minimum wages are high, pricing is too low to generate OpEx despite keeping one person for cluster management of 10 Water ATMs. ”

 Mr. Shyam Bhattbhatt

“ Our analysis of more than 200 Water ATMs has identified a need for viability gap funding (VGF) as we balance affordability and sustainability. The VGF will help cover the costs of consumer activation, water quality testing, field service entity, supervision, and relocation. The model is currently unable to recover CapEx. Hence, we need other models like Hybrid Annuity Model and Result Based Funding for sustainability so that consumers get reliable, safe water for five years once the CapEx is spent. ”

 Ms. Poonam Sewak

Snapshot of Financial and Operation Performance of SWEs of SEWAH – SWE Alliance Partners

SWE Implementers	Operating Models	Water Tariff / liter (INR)	OpEx Recovery %	Capex Recovery %	Gap (s) identified	Challenges for full cost recovery	Types of Subsidies offered
Drinkwell Systems	CSR/ Urban/ Rural	0.25	40-50%	NA	10-20%	<ul style="list-style-type: none"> Urban competitive market Unutilized plant capacity in rural intervention Inappropriate site selection or customer mapping 	Land & water
	PPP	0.35	20%	30%	25%	Inappropriate site selection and resource selection	Land, water, electricity & manpower
	SHG	0.25	35%	NA	25%	Lack of SHG dedication	Land & water
	Impact Fund	0.35	40%	NA	20%	Lack of dedication from operating partner / donor	Land & water
JanaJal	Urban/ Rural	0.25	74%	35%	52%	High cost of delivery at door-step	Water
Water Health India	Urban	0.35	80%	35%	54%	Low population (rural), Location (CSR), Price per liter, Manpower expenses, Power charges, Increase in consumable prices, Raw water costs, unorganized competition	Land & water
	Rural	0.25	57%	18%	72%		
	CSR	0.35	65%	100%	-		
Waterlife India	Government (Urban+ Rural)	0.30-35	65%	85-100%	35-40%	<ul style="list-style-type: none"> High OpEx in urban locations leading to low viability High IEC expenses in rural intervention Gap in community support in pre- and post-implementation Lack of viability analyses in tenders; low flexibility Delayed payments in Govt. projects affects cost recovery 	Land; OpEx Support in year 1; Subsidized power at some locations
	CSR (Urban+ Rural)	0.35	60%	100%	30-35%		
Maithri Aquatech	Urban	15	47%	100%	53%	<ul style="list-style-type: none"> Low Consumer Participation Customer Awareness about water category Customer Awareness about water category 	- Electricity -
	Rural	5	55%	100%	45%		
	PPP	12	52%	100%	48%		
Safe Water Network India	Urban/ Rural/ CSR PPP	0.25-0.35 0.10-0.20			41% NA	Overhead & admin cost, water quality testing cost, customer activation cost and M&E cost	Free water Land & free water

Beyond the Pipe Forum: **Strategies to Make Water ATMs Sustainable**

Suggestions for Delhi Jal Board DJB Tender

May 18, 2023

OVERVIEW

Mr. Virender Kumar, Chief Engineer - Delhi Jal Board, presented the Delhi requirement to the Safe Water Enterprise Alliance members seeking their participation in the upcoming tender for Water ATMs in Delhi. He apprised them of DJB's plan to float a tender, inviting bids from implementers for setting up ~500 Water ATMs in Delhi to serve communities facing safe water access challenges. Conditional to meeting technical requirements and competencies as laid down in the tender, DJB will select two or three concessionaires for empanelment. The concessionaires will be authorized to set up Water ATMs in Delhi, selecting the locations and communities based on the demand assessment. The concessionaire will sell water at an agreed-upon affordable price. The tender is for five years.

DJB will provide the following:

1. Land
2. Permission to dig borewell.
3. Aadhar-linked RFID cards to beneficiaries. Such beneficiaries are DJB consumers, and DJB will subsidize 50% of the price paid by these consumers (paying this directly to the concessionaire in support of O&M costs). Thus, registered DJB consumers will pay half-price.
4. The concessionaire can sell water at the unsubsidized rate to commercial (non-DJB) customers.

Goals

- o Sustainable services – DJB, through Water ATMs, aims to provide affordable drinking water access to communities lacking access.
- o Develop a Fair-risk tendering mechanism– The SWE Alliance members enjoin the DJB to include such provisions in the tender and subsequent contracting, ensuring the operational and financial sustainability of the Water ATMs, making long-term service provision possible.

RECOMMENDATIONS

The members of the SWE Alliance have collectively put up more than 7000 Water ATMs across the country using CSR funds or participating in various state government and railways tenders. We want to submit the following for your consideration:

1. Considering the large outlay of INR 40 to 60 crores to set up ~ 500 Water ATMs, it would be easier for us to mobilize leveraged CSR funds if DJB provides some upfront capex support. Several governments and ULBs provide such upfront CapEx support, such as Pondicherry, Karnataka, Rajasthan, and Punjab, to name a few. To protect the government capital from the relocation risk, the CapEx support could be split up over the 7-year concession period upon submission of proof of operation, with 65% upfront and 5% divided across the following years.
2. The members also request DJB to provide shelter in addition to land and water borehole. The concessionaire seeks a raw water source from DJB and would not like to dig the borewell for the risk of deeper digging/bore getting dry.
3. Owing to the high cost of living in Delhi, a price of Rs. 2 per litre may be allowed. For bulk dispensing, Rs 10 for 20 litres may be better for communities. Given the 50% subsidy, each household would pay Rs. 150 monthly.

4. The concessionaire will ensure price compliance for water dispensing at the water ATMs; kindly permit increased prices for value-added services such as door-step delivery at home or chilled water.
5. Please permit Mobile Water ATMs in the tender.
6. Permit price increases every alternate year to offset the inflation.
7. Permit relocation of the Water ATMs due to (a) lack of demand or (b) water borewell drying up.
8. In the tender, please clearly specify the process of
 - i. Water quality testing requirements
 - ii. Aadhaar-linked RFID cards issuance and their numbers
 - iii. Can the monthly subsidy payment be automatic through an escrow account?
 - iv. Specify the display requirements, such as pricing, TDS, or Quality Tests.

CONCLUSION

We are grateful to DJB for providing us the opportunity to give recommendations for the sustainability of the Water ATMs.





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