



SEHGAL
FOUNDATION

Sharing Experiences and Technologies Household Water Treatment and Storage (HWTS)

**February 27 - 28, 2020
NIRDPR, Rajendranagar
Hyderabad**



Executive Summary

A learning exchange (workshop) was organized by National Institute of Rural Development and Panchayati Raj (NIRDPR); and S M Sehgal Foundation (Sehgal Foundation); and Centre for Affordable Water and Sanitation Technology (CAWST), Canada, on Household Water Treatment and Safe Storage (HWTS), which was attended by technology developers, providers, and practitioners. Participants shared experiences, demonstrated technologies, and discussed strategies for scaling up. All participants agreed that HWTS is a viable and important option to provide safe drinking water to the last mile population.

Forty-six participants from NGOs, universities/ IITs, and government research institutes from eleven states of India and from abroad (USA, Canada, and Switzerland) participated in the workshop.

In the workshop, eighteen technologies were demonstrated in the exhibition, and seventeen presentations were made covering biosand filters (stainless steel and cement concrete model), ceramic pot filters, membrane filters, and technologies to detect and remove biological, fluoride, iron, arsenic, and chromium contamination from water.

Challenges identified by participants in scaling up a HWTS technology are behavioral issues, political interests, and the structure and composition of PHEDs. Participants suggested some strategies for scaling up HWTS implementation such as bringing HWTS into a policy agenda, formation of a HWTS network for bridging the gaps and a nodal agency to make reliable water quality data available, build an ecosystem of micro entrepreneurship for providers and microfinance mechanism for adopters, sensitization and awareness building at the point of use; and Water Extension Services like the extension services in agriculture.

All members strongly supported establishing a HWTS network involving organizations working or interested in HWTS topics for India to collectively prepare and present policy briefs and learn from each other toward the goal of safe water for all.

Introduction

The National Institute of Rural Development and Panchayati Raj (NIRDPR) and S M Sehgal Foundation (Sehgal Foundation), in a knowledge partnership with the Centre for Affordable Water and Sanitation Technology (CAWST) Canada, organized a two-day workshop on Household Water Treatment and Storage (HWTS) for WASH professionals and organizations/institutions working in this area on February 27-28, 2020.

This workshop provided a platform to technology developers, technology providers, and practitioners to share experiences, demonstrate technologies, learn from each other, and discuss strategies for scaling up, including advocacy.

Rationale

India has the most people in the world without access to safe drinking water (133.9 million). Many studies indicate that poor and marginalized populations are the worst affected from waterborne diseases resulting from the consumption of contaminated water. The issue warrants urgent attention as each year over 140,000 children under age five die from diarrheal diseases alone. Although many agencies, including major donors, governments, and international aid agencies, are working in the water sector, the focus has largely remained on water supply systems and less on water quality issues. The community-based water treatment solutions have failed to work given the lack of motivation, resources, and technical skills to maintain these structures and also the lack of availability of local resources and materials needed for continued operation. On the other hand, HWTS solutions are best suited for villages, and together with training and capacity building for ownership and maintenance, they are low-cost and sustainable options.

The recently announced Har Ghar Jal (tap water to every household) scheme of the government aims to connect every home with piped water. However, the quality of water to be supplied will need special attention due to the risk of secondary infections in the distribution systems and the source contamination. HWTS holds huge potential to overcome these safety issues. The World Health Organization considers HWTS to be a viable option for providing safe water to vulnerable households, thus the need for knowledge and experience sharing, networking and advocacy to promote the scaling up of this initiative in India.

The objective of the workshop was to bring together the varied interventions and experiences on HWTS technologies in India. The range of work on HWTS includes research on contaminant removal technologies (like biological, fluoride, chromium and arsenic) by academicians, development of HWTS products involving membrane and ceramic products by entrepreneurs; and implementation of sustainable biosand filter technologies by organizations. The workshop successfully brought together a select number of institutions who are addressing the safe water needs of rural communities.

Participants Profile

Forty-six participants from eleven states of India and four from abroad (USA, Canada, and Switzerland) participated in the workshop. The workshop had representation from corporates, NGOs, universities, and government and research institutions. (Refer to Annexure 1 for list of participants). In total, 18 technologies were demonstrated in the exhibition that formed part of the learning workshop. (Refer to Annexure 2 for technologies exhibited).

Proceedings of the workshop are summarized below:

Day 1 (Feb 27, 2020)

An ice-breaking session was initiated by Dr. Ramesh Sakthivel, associate professor and head (I/C), CIAT, NIRDPR by welcoming Dr. W R Reddy, DG, NIRDPR, along with the organizers and participants. Dr. Ramesh talked briefly about NIRDPR, an autonomous organization under the Union Ministry of Rural Development that is a premier national center of excellence in rural development and panchayati raj and also a knowledge dissemination center. NIRDPR has a collaboration with Sehgal Foundation that focuses on capacity building and grassroots interventions in rural development. Sehgal Foundation also has a Water and Wastewater Resource Centre in the Rural Technology Centre

(RTP) at NIRDPR for disseminating innovative technologies suitable for rural application.

He further shared that many organizations are focusing on the availability of water, whereas the quality or treatment has been ignored. HWTS was considered a better approach to address quality and treatment aspects through many studies, but presently there is no platform in India to promote household water treatment. This workshop is a brainstorming event where different agencies have come together to discuss strategies for scaling up HWTS in India. Dr. Ramesh ended his talk with screening a video on historical glimpses of NIRDPR.

Workshop introduction by organizing partners

Lalit Sharma, Sehgal Foundation, expressed appreciation for the partnership with NIRDPR and CAWST in having a potential of reaching the institutions and those people at the last mile to achieve the SDG # 6. He “spilled the beans” on the quality of water, especially in villages. Through the Jal Jeevan Mission by Ministry of Jal Shakti, the government aims to bring tap water to every household by 2024, which will improve availability and coverage, and save time spent in the collection of water. But the quality aspect will still remain an issue particularly with regard to salinity, fluoride, arsenic, and iron-rich groundwater areas. On the quality side, particularly in rural India, it is relevant to focus on household water treatment because experience with community-based systems has not been satisfactory. This workshop is an attempt to identify solutions for different water quality issues along with experiences such that interested practitioners can select appropriate technology for replication and technology developers can understand the promoter and user perspectives for finding ways to optimize solutions that will meet the needs for safe drinking water, with an overarching goal of no one left behind.

Suneel Rajavaram, CAWST shared about the fruitful partnership with Sehgal Foundation and NIRDPR. As co-organizers, one training event at NIRDPR was held in the last two years, but this year it is a second event around household water treatment. He is pleased to have practitioners, academicians, and researchers come together to discuss how to scale up HWTS in the most appropriate way for building access to safe drinking water. There is a huge potential to do more.

Workshop Opening Presentation

“HWTS: Potential of accelerating India’s Journey of SDG #6” by Suneel Rajavaram, (CAWST, Canada)

Mr. Suneel talked about why HWTS is important and how CAWST is supporting HWTS adoption worldwide. He started that the largest population of any country without access to safe water lives in India where almost 99 million people lack access to safe water. The biggest barrier for achieving the SDG #6 is the misconception and perception about safe water and health. Household water treatment is the only option to achieve this goal within the stipulated time. Through his presentation he established that this is possible only through sensitization and awareness building aimed at behavior change towards health and hygiene. Behavior change clubbed with appropriate technology can lead us to SDG #6. He also talked about low-cost sustainable technologies that can make drinking water available at the household level. He added that since 2016, CAWST and Sehgal Foundation have built the capacities of more than fifty organizations, and these organizations are now contributing in accelerating India’s journey toward meeting SDG #6.

Presidential address by Dr. WR Reddy, DG, NIRDPR

Dr. Reddy started his address with the how water and wastewater center established through a partnership of Sehgal Foundation and NIRDPR is disseminating innovative technologies and best practices among all the visitors from round the globe. He mentioned that in the background of National Green Tribunal’s decision about mushrooming RO systems in the country, this workshop is a very well-timed platform to discuss and strategize the application of appropriate technologies and best practices. He pointed out how just for convenience or marketing push, some technologies like RO or alkalizers are being adopted, which are not good in the long term. He raised an important question for academia and research fraternity about the selection between technology-based solutions vs. the selection of safe and convenient sources. It has been observed many a times that water is treated more than required and, as a result, people get demineralized water, which causes other complications. Presently, the government’s implementation is supply side focused. There is a daunting need to sustain the water sources as well. There needs to be a technology that is more exciting but at the same time it should be easy to maintain and operate. There is also a need of perfectly planned IEC materials to bring behavior change among the people sitting at the last mile. Dr. Reddy added that we should make efforts to take technology closer to people, rather than letting fancy

water structures to have their own control.

Dr. Sakthivel and Mr. M Khan (RTP, NIRDPR) conveyed a vote of thanks to the DG, NIRDPR and organizers for making the workshop happen.

Technical Sessions: Sharing Experiences and Technologies HWTS

In the workshop, seventeen presentations were made covering biosand filters (stainless steel and cement concrete models), ceramic pot filters, membrane filters and technologies to detect and remove biological, fluoride, iron, arsenic, and chromium contamination from water. These presentations are available at the following links:

- [Summary of presentations](#)
- [Powerpoint presentations](#)

Scaling up of HWTS: Experiences, Challenges, and Strategy Development

Facilitator: Niti Saxena (Sehgal Foundation); Co-facilitator: Lalit Sharma (Sehgal Foundation), Suneel Rajavaram (CAWST), and Dr. Ramesh Sakthivel (NIRDPR)

This group work session primarily focused on three aspects related to scaling up of HWTS technologies. These were strategies adopted to scale up the HWTS technology, challenges encountered or foreseen in scaling up the technology, and ways of getting HWTS to the policy agenda. The session was carried out using the café-style mode wherein the attendees were divided into three groups with each group devising answers for the allocated question. Thereafter, every group moved to the next group to provide feedback and ideas on things they found missing in the answers. The session briefing was split into three parts, each catering to the questions posed.

Strategies adopted to scale up a HWTS technology

The first aspect highlighted is the need for a nodal agency to test water quality at various levels. The biggest obstacle in devising HWTS solutions is the lack of credible data on water quality which is further magnified due to the lack of layers at which such data is available. To scale up any HWTS technology, such data is ever more necessary. A solution to this can be real time data monitoring of water quality at various levels.

The country needs to build an ecosystem of micro entrepreneurship to promote innovations and their sustainability. Contract manufacturing can be an important strategy where innovators are singled out from marketeers and the scalability is taken up by a third-party agency.

For the purpose of scaling up, the entire value chain needs to be strengthened. To the likes of a CSR consortium, a HWTS consortium should be created such that CSR strategy of companies can be oriented to the cause of HWTS.

On the demand side, awareness needs to be generated especially at the point of use. Rural populations largely are driven by the appearance of water to consider it fit for drinking. This needs to be altered to bring in the concept of clean drinking water in terms of its suitability for drinking.

On the supply side, a policy shift needs to be created. For the purpose of any HWTS scale up, it is essential that the drinking water policy recognizes the importance of HWTS. The water treatment policy can have an inbuilt microfinance mechanism to promote its adoption by masses. Furthermore, sensitization drives to the likes of Swachh Bharat Mission need to also be built around safe drinking water use.

Challenges encountered in scaling up a HWTS technology

On the demand side, the biggest challenge encountered is that people are largely unaware of their basic right to have access to clean drinking water. This, despite being a part of the sustainable development agenda globally, continues to be a concept divorced from the masses, especially the rural poor in India. The paradox is further magnified by population groups who, despite being aware of the concept of accessing clean drinking water, are unable to do so because of being ignorant of the solutions in place.

Behavioral issues, especially among targeted beneficiary groups also need to be tackled. People are reluctant to adopt solutions. They are averse to change, which prevents the effective adoption of a HWTS solution.

On the supply side, it is necessary to have a political interest in the gamut of issues surrounding the concept of HWTS. Due to a lack of validated data on water quality, the government is unable to make available contextualized solutions despite having the wherewithal to do so. This is further magnified by a lack of accountability at various tiers of administrative machinery that prevents effective implementation of existing protocols.

Structure of PHED also surfaced as a challenge. Given that there are non-engineers in the implementation division, a lot of on-ground issues are not taken care of. The structure doesn't allow for concentrated efforts on the ground. As per protocol, there is one JEE responsible for a district, and it is unrealistic to expect that the JEE will be able to take care of every issue arising in the district. One of the suggestions to encounter this challenge is to create a cluster of panchayats that function as resource cells for the implementation and furthering of the work of PHED on the ground.

The idea of water extension should be thought through, similar to agriculture extension.

Getting HWTS on the policy agenda

The need for a policy shift on various dimensions was felt throughout the group

- HWTS need to be shifted out of the taxation slab. HWTS resonates with realizing a global goal of access to safe drinking water. Therefore, it is necessary that GST is not applicable on such solutions.
- Several households may be interested in acquiring a HWTS. However, they either have access to expensive options or do not have the money in hand to purchase it off the counter. Acknowledging that access to safe drinking water is a basic right, the government can look at adding HWTS under the Direct Benefits Transfer.
- Jal Jeevan Mission of the Govt needs to recognize that water access must be seen from the household standpoint, as quality needs to be ensured at the point of use.
- All organizations/ individuals/ innovators working on HWTS and its cause should have common talking points to bring about a policy change. Key stakeholders for every policy dimension should be identified and followed up with. For instance, for the purpose of taxation, CII-FICCI can be roped in, for policy shift in HWTS- NITI Aayog should be roped in.

ITIs must take up rural technology adaptability, innovation and implementation.

In the rural settings, it is necessary that Village Water and Sanitation Committees are depoliticized and restructured such that they can work as active agents of change. Two members of such a committee can be permanent members who are given intensive training over years and can ensure functioning of the committee in the village.

An India-focused MOOC on water quality can be created. There are MOOC courses around drinking water but none on water quality and how it can be improved at point of use.

HWTS Network: Objectives, Structure, Functions, and Next Steps:

Facilitator: Suneel Rajavaram (CAWST) and co-facilitator: Aparajeeta (Sehgal Foundation)

Workshop participants' expressed the need for a Household Water Treatment and Safe Storage network for India. The group wanted to take advantage of the diversity of the members who come from different educational and professional backgrounds, and a variety of organizations and geographic locations. The following is the summary of group work on envisioning the network.

Goal of the network

Network shall contribute to increased safe water coverage in India, specifically in rural, remote and peri-urban areas, with a focus on the poorest of poor people through implementation of household water treatment projects.

Objective of the network

To increase knowledge and build capacities of members on appropriate and affordable HWTS technologies, products, research, and HWTS project implementation.

Activities of the network

1. Facilitate knowledge-sharing events such as learning exchanges with a clear focus on the gaps.
2. Conduct training workshops.
3. Provide technical support through emails, phone calls, and personal visits.
4. Engage the group by occasional letters/emails.
5. Connect with the global HWTS network and exchange knowledge and updates.

Roles and Responsibilities

Since finances, people, and time are not allocated for this purpose, the network shall keep the structure simple and informal. Members also suggested a Hub and Spoke model. Keeping this in mind at this point, it is proposed that Mr. Lalit Sharma of Sehgal Foundation will coordinate the network. Organizations working or interested in HWTS topics can join the network for free.

Sehgal Foundation will conduct an annual learning exchange, within their means. NIRD is willing to make their venue available for the learning exchange. CAWST will provide technical and knowledge support to Sehgal Foundation in organizing the learning exchange.

Action Plan

1. Look for funding to support the activities of HWTS network, including going online.
2. Present the benefits of HWTS in seminars, conferences, and WASH sector meetings.
3. Develop a framework for sharing knowledge on HWTS topics so that activities can be conducted on a sustainable basis.

Next Steps

1. Share the workshop report to the participants.
2. Create a directory of organizations who will be the members of the network.
3. Sehgal Foundation conducts around four trainings per year and will invite network members to these trainings.
4. Sehgal Foundation will prepare a policy briefing document and submit to the Director General of NIRD and other government officials.

The long-term vision for the network

Once the funding is materialized, resources can be allocated to engage the members proactively on regular basis, develop an online portal, manage a newsletter, and do publication of good practices etc. Lalit Sharma (Sehgal Foundation) will “hold the fort” as coordinator, organize events possible within their means, and organizations such as CAWST and NIRD will provide support to Sehgal Foundation to coordinate the network. It is expected that all members will cooperate and coordinate with Sehgal Foundation. At this point of time, the structure, proposed activities, and plans for HWTS Network are kept simple and realistic considering the resources available.

HWTS Group Discussions leading to HWTS Network:

Facilitators: Niti Saxena (Sehgal Foundation), Suneel Rajavaram (CAWST)

Suneel summarized the HWTS network ideas and discussion and shared his views on keeping the platform non-commercial and stay connected with ideas and solutions.

Niti addressed scaling of HWTS. The three key questions pertained to 1) the strategies adopted to scale up the technology, 2) challenges that the group sees or foresees, and 3) ways to take HWTS to policy agenda.

The key points from the discussions were:

- Like agricultural expansion, we should have something set up as a water extension strategy by the government and have some agency/institutional structure for water to scale the process of HWTS.
- All interested organizations can come up with constituting a network where inputs to policies can be echoed.
- Look into the institutional structures available to promote HWTS.
- Obstacles: awareness issues, demand side issues, and the need to convince people about safe drinking water.

Outcome of the session was dissemination among policymakers and among the participating institutions so that they can reach out to their own networks and echo the same message.

Closing remarks by Dr. Reddy DG and DDG, NIRDPR

The purpose of the workshop was sectoral and noncommercial. It has successfully aimed at providing sensitization and awareness, which is another way to expand the scope and potential of HWTS in India. This awareness must be taken to schools and households with some base levels defined in order to have minimum standard values. An important element is the installation part of any technology. Besides the big need for justifying expensive water technologies, such as RO systems, consumptions, footprint issues, and other issues must be taken into account. Dr. Reddy further proposed a voluntary system where drinking water is tested randomly and listed to publicize the quality standards of consumed water. He appreciated the introduction of policy briefs to ministry and thanked everyone for their participation.

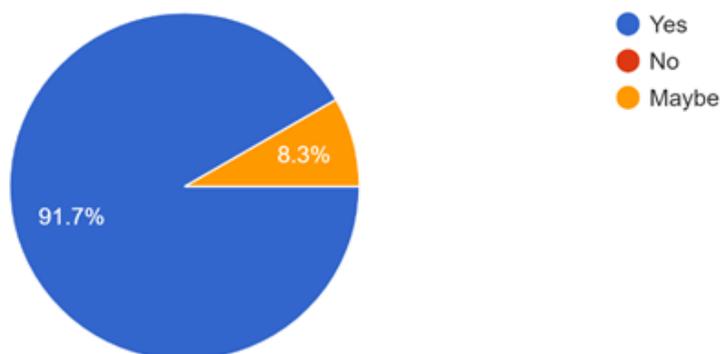
Vote of Thanks by Dr. Ramesh Sakthivel, NIRDPR

Dr. Ramesh thanked Lalit Sharma, Niti Saxena, Salahuddin Saiphyy, and Aparajeeta Vaibhav (Sehgal Foundation), Suneel Rajavaram (CAWST) for organizing the workshop beautifully and making it a huge success. He thanked all the visitors,

Workshop Evaluation by Participants

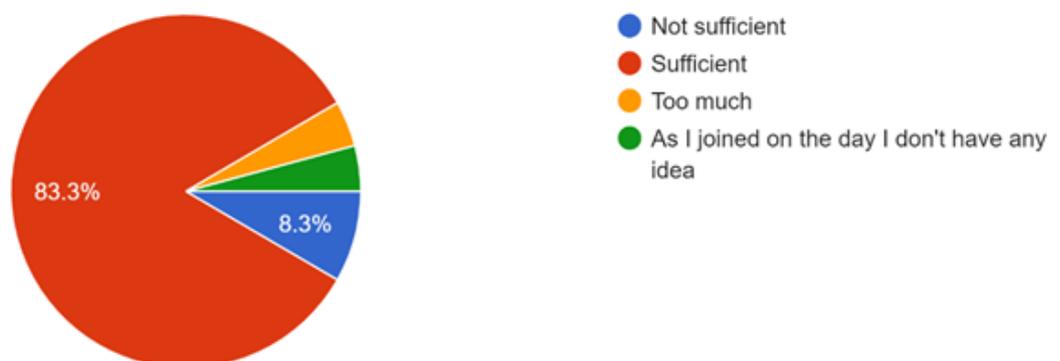
Did this workshop meet your expectations?

24 responses



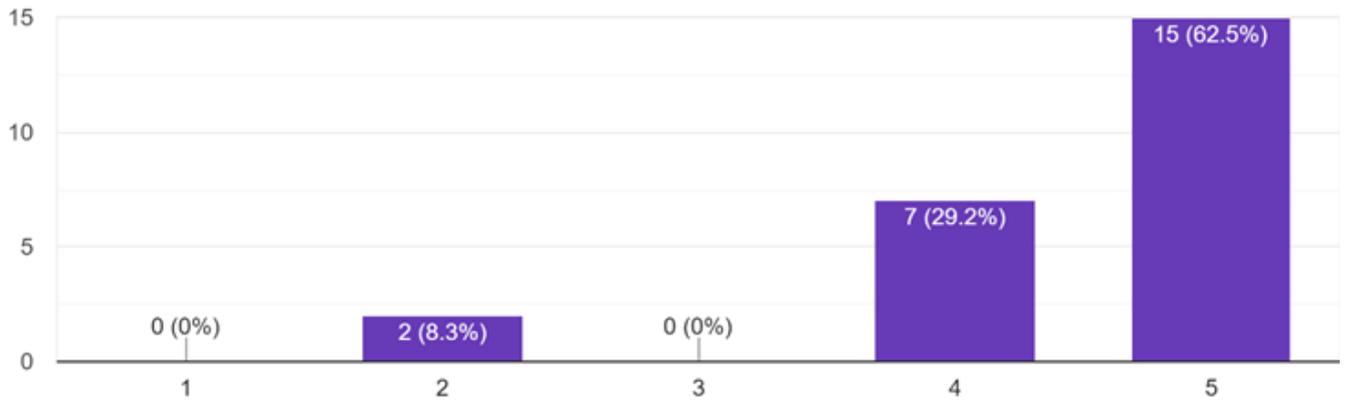
How much did you like the timeline for the workshop

24 responses



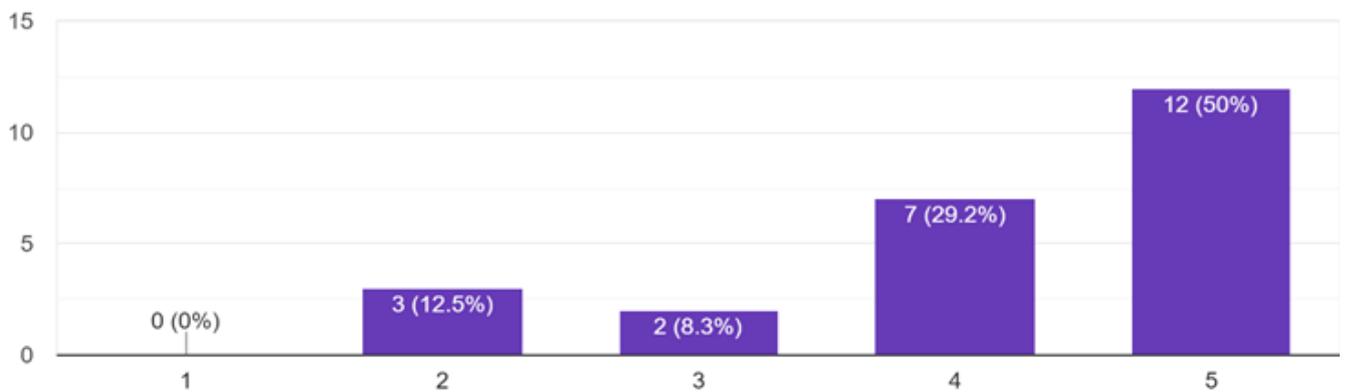
How did you like the agenda?

24 responses



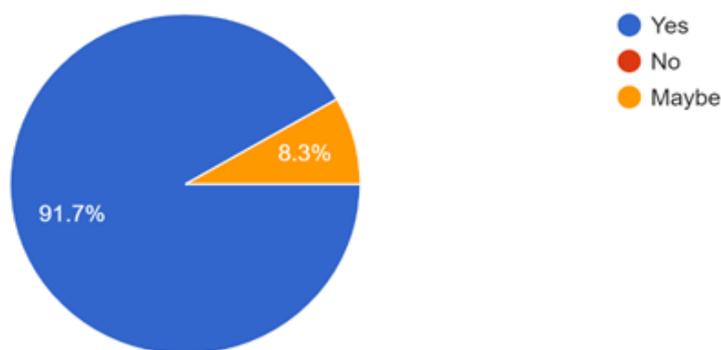
Did you like the quality of the presentations?

24 responses



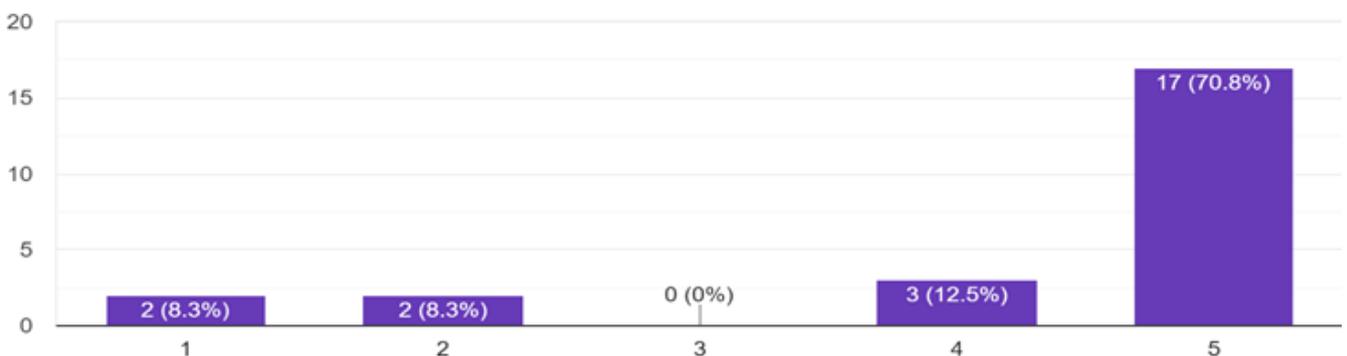
Would you like to become member of HWTS network?

24 responses



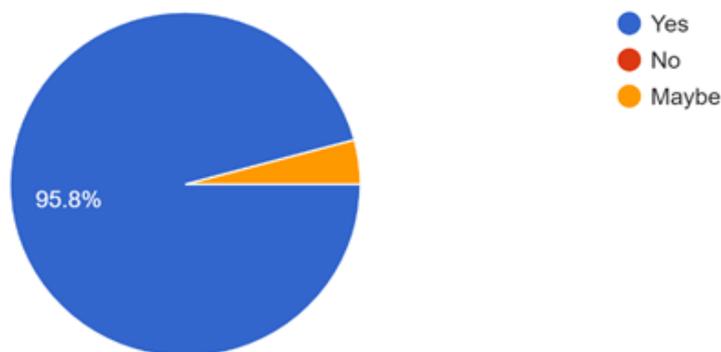
How were the facilities like accommodation, conference room, food etc.?

24 responses



Would you like to attend the next year workshop?

24 responses



Organizations Background and Role

Host Organization: NIRDPR

The National Institute of Rural Development and Panchayati Raj (NIRD&PR), an autonomous organization under the Union Ministry of Rural Development, is a premier national center of excellence in rural development and Panchayati Raj. Recognized internationally as one of the UN-ESCAP Centers of Excellence, it builds capacities of rural development functionaries, elected representatives of PRIs, bankers, NGOs and other stakeholders through interrelated activities of training, research, and consulting. The institute is actively engaged in training, research, training, and documentation of various aspects pertaining to water and sanitation. Through the Rural Technology Park (RTP), NIRDPR has taken on various initiatives to promote appropriate technologies such as water conservation, rainwater harvesting, water treatment technologies, vermicomposting, biogas technology, and various sanitation models. The Water and Wastewater Treatment Centre established in collaboration with Sehgal Foundation is actively engaged in work related to water treatment and rainwater harvesting.

NIRDPR will provide active support for organizing, coordinating, and managing the event. Further it will also provide critical inputs to the network, to be established post the workshop.

Lead Organization: SM Sehgal Foundation

S M Sehgal Foundation (Sehgal Foundation) is a public, charitable trust registered in India since 1999 with a mission to strengthen community-led development initiatives to achieve positive social, economic, and environmental change across rural India. Sehgal Foundation envisions every person across rural India empowered to lead a more secure, prosperous, and dignified life. The foundation team works together with rural communities to create sustainable programs for managing water resources, increasing agricultural productivity, and strengthening rural governance. The team's emphasis on gender equality and women's empowerment is driven by the realization that human rights are central to developing every person's potential. Sehgal Foundation works with national and international partners such as the Ministry of Science and Technology, Government of India, National Bank of Agriculture and Rural Development (NABARD), Coca-Cola Foundation, and Bayer Foundation, etc.

Sehgal Foundation will carry out all the preparatory activities for the workshop, coordinate the workshop and develop and manage the network acting as Network Secretariat having CAWST as knowledge partner. This network will be committed to scale up the HWTS in new areas to build access to clean water by inducting new network partners and building their capacity to implement HWTS in their geographic areas of focus.

Knowledge Partner: CAWST

The Centre for Affordable Water and Sanitation (CAWST) is a Canadian charity and licensed professional engineering firm established in 2001. CAWST is a global center of expertise in WASH for the poor in developing countries, with the mission to provide technical training and consulting, and act as a center of expertise in water and sanitation for the poor in developing countries. CAWST's vision is a world where people have the opportunity to succeed because their basic water and sanitation needs have been met.

CAWST, a WASH knowledge-based organization having long global experience, uses education to catalyze action, helping people gain the skills they need to access clean water, sanitation, and hygiene for healthy homes. A total of 1,291 clients from all over the world have received training and technical support in implementing WASH projects.



Annexure 1**List of Participants**

Sl. No.	Name of the Participant	Name of Organization/ Affiliation/ Independent:	Current Job / Role:
1	Sachin Vaddavalli	Usata Enterprises PVT LTD	Managing Director
2	HANUMANT UTTARESHWAR BARBOLE	ASHAMANT FOUNDATION	PRESIDENT
3	Chandrasekaran J	Watsan Envirotech Private Limited	Founder & CEO
4	Dharmendra Singh	Sehgal Foundation Samastipur Bihar	APL Adaptive technology
5	Raju Goka Goka	Balavikasa	Field coordinator
6	Ashwini Kumar Mohapatra	IIT KANPUR	Ph.D scholar
7	Dr. KOLLI. SUNDER KUMAR,	Jawaharlal Nehru University Hyderabad	Assistant Professor, Department of Chemistry
8	Tathagata Bandyopadhyay	IIT KANPUR	Student (PhD)
9	Dilshad Ahmad	TCS Innovation Labs TRDDC	Scientist
10	OGB Nambiar	FORMER PRINCIPAL SCIENTIST, CSIR NATIONAL CHEMICAL LABORATORY, PUNE	TECHNOLOGY DEVELOPER.
11	Deepti Sharma	Water Wisdom Foundation	CEO
12	Om Prakash Sharma	WaterHarvest, U.K.	Country Director, Water Harvest India
13	G CHANDRASEKHAR REDDY	SRI MEDHA TECHNOLOGIES	CEO
14	Anand Krishnan Plappally	Indian Institute of Technology Jodhpur	Associate Professor
15	Yashi Gautam	The Energy and Resources Institute	Drinking water quality expert
16	Dr. Robin Kumar Dutta	Tezpur University	Professor
17	Madusudhan Reddy Alugupally	Bala Vikasa	Junior Program Officer Water
18	Rajshree Patil	Institute of Chemical Technology (ICT), Mumbai	Research Assistant
19	Nilanjan Maiti	NSG Techno (www.jujoi.com)	Founder, CEO
20	Gaurav Thakur	NSG Techno (www.jujoi.com)	Founder
21	P S S HARI PRASADA RAO	ACTION FOR INTEGRATED DEVELOPMENT (AID)	DIRECTOR
22	CHINNAPPA PATTHIPATI	NETWORK INITIATIVES FOR COMMUNITY EMPOWERMENT (NICE)	EXECUTIVE SECRETARY
23	Shyam Narayan Prasad	TARAlife Sustainability Solutions Pvt.Ltd.	Business Development and Technology Expert
24	Amit Kumar	TARAlife Sustainability Solutions Pvt.Ltd.	Business Development and Technology Expert
25	Ramakrishna Gottipati	Eureka Forbes Ltd	Asst. Manager R&D

26	Akshay Roongta	Water Quality Network and IN-REM	NA
27	Jennifer Mally	Potters for peace	Executive director
28	Don Hall	Potters for peace	Founder
29	G P Shravan Kumar	Sehgal Foundation	Assistant Manager-Finance & Admin
30	Salahuddin Saiphy	Sehgal Foundation	Director-Water Management
31	Sabuj Kumar Roy	Srishty Gram Development	Executive Director
32	Hari Prasad Rao	Sehgal Foundation	Program Officer
33	Suneel Rajavaram	CAWST	Global Advisor
34	Dr. Soloman Raj	Saci water	Executive Director
35	Dr. V Hara Prasad		
36	Pathan F.Khan	H M Services	
37	Ramesh Naidu	Clay Unit RTP	Director
38	Shayam Pavar	Utkarsh	
39	Lalit Mohan Sharma	Sehgal Foundation	Director
40	Niti Saxena	Sehgal Foundation	Director
41	Aparajeeta Vaibhav	Sehgal Foundation	APL Adaptive technology
42	Ramesh Sakthivel	RTP, NirdPR	
43	Rishi Kumar	RTP, NirdPR	
44	Raghav	RTP, NirdPR	
45	Ramesh Kumar	Center for innovative Technology, NIRDPR	
46	Adnan Ali	Sehgal Foundation	

Annexure 2**List of Technologies demonstrated in exhibition**

SL. No.	Name	Technology	Name of Organization/ Affiliation/
1	Sachin Vaddavalli (USATA)	Lifestraw	Usata Enterprises PVT LTD
2	Chandrasekaran J	Watsan	Watsan Envirotech Private Limited
3	Lalit M. Sharma	JalKalp	S. M. Sehgal Foundation Gurgaon Haryana
4	Dharmendra Singh	Matikalp	S. M. Sehgal Foundation Samastipur Bihar
5	Ashwini Kumar Mohapatra	Hexavalent Chromium detection test kit	IIT KANPUR
6	Tathagata Bandyopadhyay	Hexavalent Chromium Removal	IIT KANPUR
7	Dilshad Ahmad	Funnel chlorination +Shudh Pen+Shudh Stick	TCS Innovation Labs TRDDC
8	OGB Nambiar	Arsenic Test Kit	FORMER PRINCIPAL SCIENTIST, CSIR NATIONAL CHEMICAL LABORATORY , PUNE
9	G CHANDRASEKHAR REDDY	Sawyer Point of Use Bucket Filter+personal filter	SRI MEDHA TECHNOLOGIES
10	Anand Krishnan Plappally	Ceramic Pot Filter	Indian Institute of Technology Jodhpur
11	Nilanjan Maiti & Gaurav Thakur	Ultra Filtration + Activated Zirconium	NSG Techno (www.jujoi.com)
12	Shyam Narayan Prasad & Amit Kr	Water Quality Test Kit	TARAlife Sustainability Solutions Pvt.Ltd.
13	Dr Rajshree Patil	Pure Paani + Madidrop	Institute of Chemical Technology (ICT), Mumbai