Report on
Vocational Training Program in Safe Water Enterprises (SWEs) for grassroots youth and women in Telangana

Submitted to:

INDIA WATER PARTNERSHIP

By:

SAFE WATER NETWORK INDIA

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ACKNOWLEDGEMENT

Safe Water Network India (SWNI) extends sincere gratitude to India Water Partnership (GWP-India) for the support that enabled us to undertake the Project entitled "**Vocational Training Program in Safe Water Enterprises (SWEs) for Grassroots Youth and Women in Telangana**."

We thank the Executive Secretary-cum-Country Coordinator of India Water Partnership for her constant guidance throughout the project period and for the comments and suggestions from the Board of Governors of India Water Partnership for mid-course corrections for the successful implementation of this project. This project was undertaken under the thematic areas as per GWP Strategy 2020-2025, contributing to Gender Equality and Engaging Private Sector and SDGs 5, 6.1 & 8.

We also thank our local field service support partner, Clean Water and Energy Trust (CWET), for their capacity-building support.

Poonam Sewak,
Vice President – Programs & Partnerships,
Safe Water Network India

LIST OF ABBREVIATIONS

ASHA	Accredited Social Health Activist
BIS	Bureau of Indian Standards
CWET	Clean Water and Energy Trust
FTK	Field Test Kit
GOI	Government of India
GP	Gram Panchayat
GWP	Global Water Partnership
H2S	Hydrogen Sulfide
IWP	India Water Partnership
MARI	Modern Architects for Rural India
M&E	Monitoring & Evaluation
O&M	Operations and Maintenance
SDGs	Sustainable Development Goals
SHGs	Self Help Groups
SWEs	Safe Water Enterprise
SWNI	Safe Water Network India
UN	United Nations
VWSC	Village Water and Sanitation Committee
WQ	Water Quality
WQM&S	Water Quality Monitoring & Surveillance

EXECUTIVE SUMMARY

Through its policy on skill development, the Government of India (GoI) aims to build the capacity of the youth and women to ensure that they are adequately skilled to meet industry requirements. However, the sector lacks institutional support to develop a cadre of grassroots barefoot technicians to operate, maintain, and repair the water infrastructures and keep the water flowing from the taps. Hence, there is a need to involve women and youth in water demand management, water quality testing, and water infrastructure operations.

This project report titled "Vocational Training Program in Safe Water Enterprises (SWEs)" for Grassroots Youth and Women in Telangana" summarizes the initiative undertaken by India Water Partnership (IWP) with the support of Safe Water Network India (SWNI) under the aegis of Global Water Partnership-South Asia (GWP-South Asia). The project focused on building the capacity of women (> 25 years) and youth (16-25 years) in operations and management of water systems, O&M, repair of piped water supply infrastructures as fitter, valve operator, plumber, and electrician, water quality testing using Field Test Kits, entrepreneurship development, and learning soft skills. The overall program aims to create social entrepreneurs in safe water enterprises, which can help improve public health through access to safe water.

Under the program, SWNI trained a diverse profile of people, including Safe Water Station operators, SHG members, members of the youth associations, and semi-literate & semi-skilled women from the community. SWNI trained and engaged four Master Trainers from SWNI and the local field service support partner, Clean Water and Energy Trust (CWET).

A full-day training in two phases with more than 10 youth/women participants in each session was conducted in Warangal District, Telangana State. The training covered five modules, viz;

i) Introduction to Water,
ii) Water Quality and Water Quality Management Systems,
iii) Water Treatment Technologies,
iv) iSWEET[1] Toolkit for Safe Water Enterprises,
v) Entrepreneurship and soft skills.

The trainers provided practical demonstrations of water quality testing using field test kits. A toolkit was distributed to each trainee to equip them to manage minor repairs in their household/community independently.

Upon completing the second round of training (Post-Monsoon) on 26th September 2023, five interested trainees were provided further advanced refresher classes and certificates to become trained technicians. SWNI will extend the water quality testing program in Warangal's slums to align with the national Jal Jeevan Mission focus on water quality improvements. These five trained technicians in the year 2024 will conduct water quality

[1] Digital Safe Water Enterprise Entrepreneur Toolkit

testing in 50 slums in and near Warangal District of Telangana. They will check the quality of the drinking water used by the households and report the observed gaps (if any) in water quality to the concerned authorities of the village/ Gram Panchayat (GP) (mostly Sarpanch) for remedial action. The project in 2024 will benefit more than 1,50,000 people, contributing to their improved health. The program in 2023 achieved the following impact:

- Increased employability of women and youth in managing water enterprise through entrepreneurship opportunities.
- Semi-skilled and Semi-literate youth in water-based skills for livelihoods opportunity with monthly income ranging (from 6-8k/month).
- The knowledge from industry experts imparted to create enterprises.
- Support to the O&M and upkeep of household water supply.

The program contributes to the UN Sustainable Development Goals (SDGs) 6.1, Safe Water Access for All, Goal 5, Gender Equality, and SDG 8, Decent Work and Economic Growth. It aligns with the scale-up of water enterprise initiatives and the Government of India's Policy on Skill Development and promotes overall public health improvement.

INTRODUCTION

I. PROJECT TITLE & PURPOSE

Title: "Vocational Training Program in Safe Water Enterprises (SWEs) for grassroots youth and women in Telangana."

Under this project, Safe Water Network India (SWNI) envisions empowering women, youths, and the grassroots community to manage water systems and make them independent in water quality testing and water demand management.

II. PROGRAM OBJECTIVES

The program aims to prepare semi-skilled and semi-literate youth in water-based skills such as plumbing, water purification, water quality testing, and entrepreneurship in managing water systems. Besides water-based skills, the program also includes entrepreneurship training and soft skills. SWNI endeavor to achieve the following:

- Increase employability of women and youth in managing water enterprises.
- Help establish/manage their water enterprises.
- Transmit the knowledge from industry experts to create enterprises.

III. SUMMARY

A. Summary

This training program titled "Vocational Training Program in Safe Water Enterprises for Grassroots Youth and Women" is the commencement of the three-year Work Plan of the India Water Partnership and Safe Water Network India approved under the Regional Work Plan of GWP-SAS South Asia.

Safe Water Network India conducted a full day of training in two phases in the Warangal district of Telangana; (i) Phase 1: 6th June, 2023, (ii) Phase 2: 26th September, 2023

Safe Water Network India trained 26 women & youth through both phases of the program. The participants included members from youth associations, SHGs, Community women groups, ASHA, Anganwadi workers, Gram Panchayat members, Block Development Officers, water system operators, school teachers, and village elders, especially women. The criteria for selection of trainees were:

- The participant should be from the community in the nearby block.
- Should be actively involved in highlighting/addressing their issues with the local community.

Additionally, SWNI engaged four Master Trainers from SWNI and CWET (technical field implementation partner of SWNI) to train the participants. These trainers have expertise in the related topic on which they provided the training.

Training materials: SWNI deployed proprietary training modules for the sessions. A structured quiz was also designed and administered at the end of each module to test the participants' learning of the subject.

The training included the following modules:

i) Introduction to Water:
- Fundamentals: Water basics and water cycle
- Drinking water & its importance
- Water contamination causes & effects
- India Water Status
- Water Conservation Methods

ii) Water Quality & WQMS:
- Safe water, UN-SDGs, and India – JJM
- National Drinking Water Standards (BIS-10500: 2012)
- Water Contamination – and their limits
- Residual Chlorine: Need and Importance
- WQ assurance at water ATMs
- Water Quality Monitoring & Surveillance: Escalation Matrix
- Practical Session: Field Test Kits – Testing demonstration

iii) Water Treatment Technologies:
- Need for water treatment:
  - Traditional and Modern Water Treatment Technologies
  - Pre and Post Water Treatment Technologies
- Non-membrane-based water treatment technologies
- Slow Sand Filter Water Treatment
- Membrane-based water treatment technologies

iv) iSWEET Toolkit for Safe WaterEnterprises:
- SWEs: Site Selection and Operation Management
- Community mobilization IEC
- O&M of water ATMs
- Maintenance & Repair: Defects, Repair Schedules, Piping, Plumbing, Fittings
- Regulatory compliances
- Financial Management: Reporting & Analysis

v) Entrepreneurship and soft skills:
- Basics of entrepreneurship
- Business models: building blocks
- Enterprise Funding

Procurement of FTKs and Toolkits: Two Field Test Kits and twenty-six toolkit boxes were procured from the local vendor for the training.

A Field Test Kit is a portable multi-parameter kit used to examine the physiochemical contamination in drinking water. The kit uses tablets/reagents and color charts to test 13 parameters. The kits are portable, easy to carry, and do not require energy or power. The parameters tested were:

Exhibit 1: Field Test Kits permit immediate on-site testing of Water Quality

Exhibit 2: pH testing of water – matching the colour with the comparator

i. Turbidity by visual comparison method
ii. pH by pH strips color comparison method
iii. Total Hardness by Titrimetric method
iv. Total Alkalinity by Titrimetric method
v. Chloride by Titrimetric method
vi. Ammonia by visual comparison method
vii. Phosphate by visual comparison method
viii. Residual Chlorine by visual color comparison method
ix. Iron by visual color comparison method
x. Nitrate by visual color comparison method
xi. Arsenic (by separate Arsenic kit)
xii. Fluoride by visual color comparison method
xiii. Bacteriological vials (Presence/ Absence) water test kit (H_2S vial test)

One Field Test Kit can be typically used to test 100 samples.

A **toolkit box** was provided to all 26 trainees to equip them to independently resolve minor issues related to water supply in their household or community when needed. A typical toolkit box includes a screwdriver, hammer, measuring tape, wrenches, cutter, pliers kit set, and accessories.

Exhibit 4: A typical Toolkit box

Exhibit 5: IWP Second phase training in Warangal, Telangana – Toolkit distribution

Upon completing the second round of training on 26 September 2023, five female trainees attended eight classroom refresher classes and were awarded certificates to become trained technicians.

These technicians will test the water quality of 50 Telangana villages in 2024. The program will include pre-monsoon and post-monsoon testing of the village water supply to identify any contaminants or deviations from the National BIS 10500 drinking water quality standards. The gaps in quality will be reported to the concerned authorities for remedial action. This will benefit more than 1,50,000 people of 50 villages and improve their health.

Challenges faced in project implementation:

Difficulty in mobilizing the community for training and alignment with the youth association members. The challenges faced in project implementation include:

i. Mobilizing the women/youth matching the selection criteria set for the training.
ii. It was difficult to impart knowledge on water quality parameters to semi-educated/semi-literate women.
iii. Imparting practical knowledge to gain efficiency to test the water quality independently.
iv. Ensuring full-day engagement of women for the training, keeping aside their other regular responsibilities.

IV. OUTCOMES

Under the program, 26 women and youth were trained in Safe Water Enterprises to acquire basic skills like water quality testing, plumbing, water conservation, fitting, and entrepreneurship. Although only 10 participants (for each phase) were to be imparted to the training, it was an overwhelming response from the women and youth to be part of the planned training, so the number increased to 26. The trained technicians who attended the refresher training course in October and November 2023 were awarded certificates to become "Trained Technicians."

The program led to the following learning outcomes:

i. Entrepreneurship opportunities for women/youth.
ii. Semi-skilled and Semi-literate youth in water-based skills for livelihood opportunitieswith monthly income ranging (from 6-8k/month).
iii. Support O&M and upkeep of household water supply.

The program outcomes:

The long-term impact of the program can be summarized as follows:

- Youth and women trained in entrepreneurship development in safe water enterprises contribute to SDG 6.1: Ensure universal access to safe water.
- SDG 5: Promote Gender Equality
  Contribute towards upskilling community women to operate and manage water systems.
- SDG 8: Contribute to, 'Decent work and economic growth'. More specifically, to SDG 8.5 to achieve full and productive employment and decent work for all women and men, including for young people, and equal pay for work of equal value.
- The program aligns with the scale-up of water enterprise initiatives and the Government of India's policy of Skilling India.
- Overall, **improved public health** through enhanced accountability of the water supply quality.

Log-Frame table – IWP project 2023

Indicator	Targets set in 2023	Explanation of targets	Results achieved in2023	Explanation of resultsachieved in 2023
Number of documents produced outlining the lessons from the project and a plan for replicating solutions	3	Annual project report and case studies/video	Annual Project Report(1) Case Studies (2) Training Videos (3)	Under this assignment, SWNhas developed an annual project report and shares field case studies/training videos.
Number of Gram Panchayats / PRI / youth and women trained	20	Capacity Building of Gram Panchayats/Village Water Sanitation Committee (VWSC) members;youth and womenas O&M piped water technicians Water Quality Monitoring and Surveillance (WQMS) to support national programs	26 women/youths trained	• 26 Women/youth trainedto earn livelihoods (from 6-8k/month) • 4 Master trainers engagedin imparting knowledge
Capacity building and knowledge development initiatives to create awareness in the community		Empowerment of SHGs, ASHA, Anganwadi members, community members/women & youths to carry out WQ testing using Field Test Kits (FTKs) and manage O&M andrepair of water supply systems.	Women (>25 years ofage) /youths ((16-25 years of age) were trained in water quality, management of water supply systems, fitting, and entrepreneurship in Safe Water Enterprises. They were informed of the impact of unsafe water on health.	Awareness in the community of the importance of safe drinkingwater for good health and prevention of water-borne diseases thus reduces the expenditure on household /public health expenses.

Recommendations and Next Steps

- The program has proven replication as digital training modules in the local language are available.
- The program has a great impetus from the Ministry of Jal Shakti, Government of India for scaling the WaterQuality Management and Surveillance.
- The gaps in quality reported to the concerned authorities for remedial action will benefit more than 1,50,000 people in 50 slums of Telangana in 2024 and improve their health.

Beneficiaries: The main beneficiaries under the program are:

- The local government village authorities, including Gram Panchayat/ Sarpanch.
- Women SHGs, ASHA, Anganwadi workers, water plant operators, and youths who can independently test their water quality using the FTKs and report the results.

V. OUTPUTS

The key outputs achieved in the reporting period are:

26 women and youth trained and acquired basic skills like; water quality testing, plumbing, waterconservation, fitting, and entrepreneurship in Safe Water Enterprises

Four Master Trainers/industry experts engaged in imparting knowledge

5 women further trained as "Trained Technicians" and awarded Technical Trainer certificates

Additionally, the project resulted in the creation of knowledge products, including:

- Booklets for trainees with information on water quality testing, monitoring process, fundamentals of plumbing, minor electricity connections, and repair.
- Case studies and video.

Outputs and the type and number of beneficiaries

Outputs	Percentage of completion	Type of beneficiaries
Annual Project Report (1) Case Studies (2) Training Videos (3)	✓	Women/Community Water Sector
26 Women/youth trained on Water Quality testing, O&M and repair of water systems, entrepreneurship, to earn livelihoods (from 6-8k/month) 4 Master trainers engaged in imparting knowledge.	✓	Women/Youth/Community
5 women were further trained as "Trained Technicians" and awarded Technical Trainer certificates.	✓	Women/Community

3. Catalytic effects: The program has proven replication of stakeholders'/participants' capacities on water quality testing and management of water systems for improving public health and can be scaled to other regions.

4.

Key Partners of the project supporting interventions

The program has been supported for training and execution by our partner Clean Water and Energy Trust (CWET) to train the Master Trainers. The field team supported translation and engagement with the local community, including ASHA, Anganwadi members, and Youth Association members.

VI. EXPLAIN IF ANY DELAYS IN IMPLEMENTATION, CHALLENGES, AND LESSONS LEARNED & BEST PRACTICES

No delays in project implementation.

Challenges faced in implementing the Project: The engagement of the women trainees for full-day training was difficult as they had multiple responsibilities/engagements.

VII. SUCCESS STORY

Case Study 1

Name: Jaya Sudha

Age: 32 years

Occupation: SHG Member, Waddepally, Warangal, Telangana

Jaya Sudha is a SHG member in Waddepally village, Warangal District, Telangana. During the interview, she shared her feedback about the training program.

"Namaste. My name is Jaya Sudha, and I came to this training to learn about water quality testing. Before attending this training, I was unaware of the number of tests available to check water quality. Thanks to the training, I now better understand the various tests available. I plan to perform these tests at home and then expand to my neighboring areas to educate them. With my newfound knowledge and confidence, I am excited to start testing water quality and positively impacting my community's health."

Exhibit 6: Jaya Sudha, SHG member, Waddepally, Warangal district,Telangana

Case Study 2

Name: Gnaneshwari

Age: 34 years

Occupation: SHG Member, Nakkalagutta, Warangal District, Telangana

Gnaneshwari works as a SHG member in Nakkalagutta village, Warangal District, Telangana. She attended both rounds of training imparted by Safe Water Network India under the support of GWP-IWP.

"Namasthe, my name is Gnaneshwari. I recently took two training sessions and learned about different water sources and contaminants. Before the training, I only had a basic understanding that water contamination can be caused by human and animal waste. However, after attending the training, I learned that excessive use of pesticides by farmers can also cause water contamination. These pesticides get absorbed into the soil and contaminate our groundwater. Additionally, I learned about 13 parameters on which water can be tested, the testing methods used to measure them, and how they impact our health.

I'm excited to share my newfound knowledge with my fellow villagers, especially housewives responsible for cooking and drinking water. I believe that by educating them on water quality, we can improve the health and well-being of our community. I'm also prepared to test the drinking water in our village to ensure it is safe for consumption. Thank you."

Exhibit 7: Gnaneshwari, Self Help Group (SHG) Member, Nakkalagutta, Warangal district, Telangana

VIII. PHOTO GALLERY

Exhibit 8: Practical training on Water Quality testing using FTK

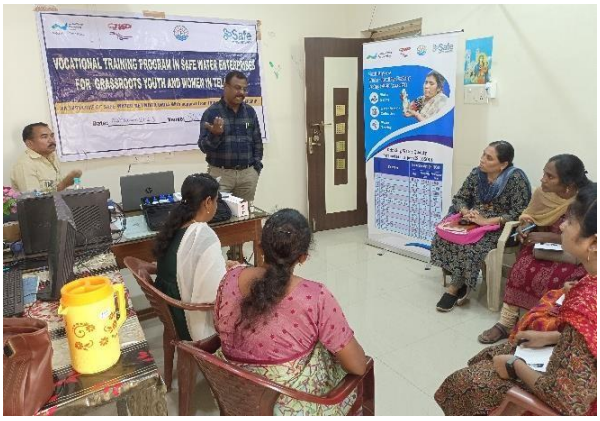


Exhibit 9: Refresher training course

Exhibit 10: First round of vocational training program in Warangal district, Telangana

Exhibit 11: Toolkit Box distribution to the participants

Exhibit 12: Second round of vocational training program in Warangal

Exhibit 13: Distribution of booklets after training

Exhibit 14: Dr Veena Khanduri with particpants of second phse of training during her M&E visit

Exhibit 15: Conclusion of the second round of vocational training program

IX. MONITORING ARRANGEMENTS

Safe Water Network India ensures effective monitoring and evaluation of the programs aligning with the donors' monitoring plan. The SMART (Specific, Measurable, Achievable, Relevant and Time-Bound) objectives are set to ensure successful implementation and achieve the performance indicators. The project progress reports are shared to keep the donors updated on the activities conducted/completed in the field.

Exhibit 16: Dr. Veena Khanduri, Executive Secretary-cum-Country Coordinator, addressing the trainees during her Monitoring & Evaluation visit to the training site in Warangal, Telangana

For the given project, a Monitoring and Evaluation (M&E) visit was undertaken by Dr. Veena Khanduri, Executive Secretary-cum-Country Coordinator, India Water Partnership, to the training venue at Warangal, Telangana, on 26th September 2023. She attended the second training phase and shared her feedback and valuable suggestions for improvement and the next steps.

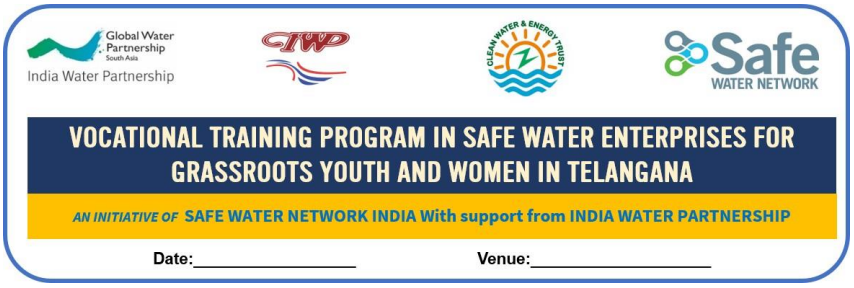
Exhibit 17: Dr. Women trainees conducting WQ testing using Field Test Kit

ANNEXURES

I. RESOURCE MATERIALS USED FOR TRAINING

Banners used for the training program

Safe Water Network developed the following banners for the training program. It included the logos of India Water Partnership, Global Water Partnership, and Safe Water Network as specified in the Terms of Reference (TOR) document.



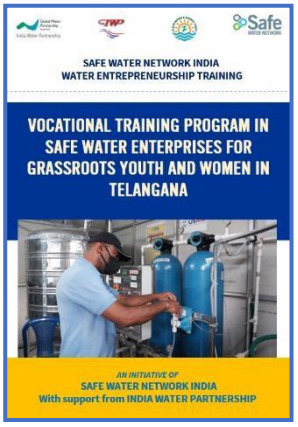


Exhibit 18: Banners for Training on Water for vocational training program

II. TRAINING VIDEOs, PICTURES, AND TESTIMONIALS

The training videos with English subtitles can be accessed at:

https://drive.google.com/drive/folders/1T_9Pizifu91Wdf1usHE3udb7qKCCmIYl?usp=sharing

III. ATTENDANCE SHEETS WITH DETAILS AND SIGNATURES OF PARTICIPANTS

Access Link - https://drive.google.com/drive/folders/1m1etIp_Yu081Q-BRdvHQHal3_5khmULw?usp=sharing

INDIA

The Centrum, TB-3, 3rd Floor, 369-370,
Main Mehrauli-Gurgaon Road, Sultanpur
New Delhi, India 110030
Phone: +91 11 41 61 9170
Email: india@safewaternetwork.org

www.safewaternetwork.org

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