



BILL & MELINDA  
GATES foundation



# “Wastewater Treatment Plant Technician - Operations & Maintenance”

Three-Months Placement Based Skill Training & Certification

(NSQF Qualification No. SGJ/Q6601)



Interested students & Industry partners may contact  
[skilling@washinstitute.org](mailto:skilling@washinstitute.org)  
for enrolment & placement related queries

## Background of Wastewater Treatment in the Indian context

In the past few years, a lot of emphases has been given in India to provide safe toilet access to the last mile, which eventually has led central/State Governments do tremendous work to achieve the status of Open Defecation Free (ODF). As a next step towards achieving the Sustainable Development Goal of safe and sustainable sanitation, we must ensure treatment of wastewater along with the provision of recycling and reuse to make cities water secure. As a result, it is expected that there shall be a 10x growth of treatment plants for Wastewater and Fecal Sludge in the next 5 years.

## Need of skilled workforce in this domain

Due to rapid urbanization, growing complexities of wastewater management & its ill-effects on the environment and humankind; central/state Governments are rethinking their wastewater management policies. They are coming up with several STPs to tackle the challenges in the best possible ways. However, the number of skilled professionals to handle complex jobs & efficiently manage the plants is insufficient. On one hand, there is a lack of formal training & recognition of skillsets amongst the existing workforce. On the other, the advantage of India's demographic dividend can be utilized to build youth capacity through skill training & formalized market connect in wastewater management. This will help to increase livelihood opportunities, enhance efficiency of the treatment plants, revamp sanitation as a preferred sector and bring synergy among various stakeholders in the sanitation ecosystem.

## About the Project

Water, Sanitation & Hygiene Institute (WASH Institute), supported by the United States Agency for International Development (USAID) and Bill & Melinda Gates Foundation (BMGF) have come together to implement a capacity building program for the local youth in wastewater management, across various states/cities in the country. WASH Institute has further collaborated with Pune based KAM Foundation & Prof. Ramakrishna More Arts, Commerce & Science College to implement the project in Pune city. Through the project, the vision is to create a pool of skilled workforce to efficiently manage the Operations & Maintenance of existing, as well as future wastewater treatment plants in various parts of the state of Maharashtra.

## Project Specification

Job Role:

**“Wastewater Treatment Plant Technician - Operations & Maintenance”**

(NSQF Qualification No. SGJ/Q6601)

Duration: **Three Months**

Programme Structure:

**Classroom + Theory (200 HRS), including On the Job Training (OJT) and Exposure Visits to Wastewater Treatment Plants.**

The course curriculum is approved by **National Skills Qualification Framework (NSQF) & Skill Council for Green Jobs (SCGJ)**

As per the Central Pollution Control Board (CPCB) report, about **80% of domestic water supply comes out as wastewater**. This after used water is left untreated due to lack of sewerage network. The above report also says that **out of 38,254 MLD sewage generated in class I cities & class II towns, only 11,787 MLD sewage was treated** (CPCB study 2008-09).

Efficiency of existing Sewage Treatment Plants (STPs) is not satisfactory due to poor Operations & Maintenance (O&M).

## Training Objectives

- To create a pool of skilled workforce to handle complex jobs at various wastewater treatment plants.
- To enhance the Operations & Maintenance (O&M) of wastewater treatment plants and make it more efficient.
- To contribute to the health & environment of a city by improving efficiency of treatment, recycling & reuse of treated wastewater.
- To contribute to the national agenda of promoting FSSM & 'Skill India' and United Nation's Sustainable Development Goals (SDGs).
- To strengthen the sanitation ecosystem and make it a preferred sector for generating livelihood.



## Tailor-made Monitoring Mechanism

### The program will further contribute to the following aspects of universal attention

- Better management of STPs to contribute towards improved water quality by reducing pollution, minimizing hazardous chemical release leading to increased recycling & safe usage
- Through skilling & generating employment to the local unemployed youth, the program will strengthen the participation of local communities in improved water & sanitation management
- Reduce water scarcity, enhance health, nutrition & dignity of people with particular attention to girls, women & those in a vulnerable situation



### Broad impact on the larger Wastewater Management and Sanitation Ecosystem

- a. Quality output by skilled & certified workers in the STPs leading to increased plant efficiency, better operations & management and enhanced workplace safety practices.
- b. The emergence of the Wastewater Management and Sanitation Ecosystem sector as a socially responsible sector prioritizing the need of skilled, certified workers along with practising workplace safety.

### Broad Structure of Course Content

1. Wastewater Treatment Plant Industry
2. Wastewater Treatment Plant and its Components
3. Operate Wastewater Treatment Plant
4. Work Safety at Wastewater Treatment plant
5. Types of Wastewater and its Treatment
6. Wastewater Treatment Process
7. Monitoring & Maintenance of Wastewater Treatment Plant
8. Sessions on Job Readiness, Entrepreneurship, Soft Skills & Employability

## Trainers



**Manohar Krishna**

Managing Director,

Kam Avida Enviro Engineers Pvt. Ltd

M K Krishna is a commerce graduate from Loyola University- Chennai with a PGDM from (IIM) Bangalore. Beginning as a Management Trainee, Krishna travelled a long journey in his career and became one of the pivotal founding members of Kam Avida & grew the company. Kam Avida won the AMRUT Award from the Ministry of Housing & Urban Affairs (MoHUA), GOI under the leadership of Mr M Krishna.



**Dr Smita Singh**

CEO, Kam Foundation

Dr Smita Singh began her career as a Human Resources professional and now leading Kam Foundation as the CEO with its mission to bring about a transformation in the lives of Safai Karamcharis who continue to manually carry out the daunting task of cleaning, risking their lives. Smita is a Safety (SHE) trainer, 5S. Master Trainer and is certified in Waste Management by Skill Council for Green Jobs (SCGJ) under the Ministry of Skill Development & Entrepreneurship (MSDE). She has conducted workshops and trainings for more than 10,000 Safai Karamcharis all over India.



**Dr Sanjay Danao**

Faculty, Petroleum Conservation Research Association (PCRA)

Dr Sanjay Danao is a Capacity Building expert with rich industrial experience in Water Processing (WTP/STP/ETP), Conservation, Harvesting, Audit and other related services. Dr Danao is currently serving as the Director of Danao Green Tech Services and the Chairman of the Society for Urban and Rural Youth's Aspiration (SURYA), alongside being a faculty member of prestigious academic institutions such as the Petroleum Conservation Research Association (PCRA).



**Dr Karan Chavan**

Managing Partner-ECOICE

(Environmental Sustainability)

Dr Karan Chavan is currently serving as the Managing Partner-ECOICE (Consultancy firm specializing in environmental sustainability). He is an academically enriched professional with having PhD (Tech) in Chemical Engineering from the Institute of Chemical Technology, Mumbai. Dr Chavan has extensive work experience in the domain of alternate energy, climate action and environmental sustainability.



**Rajesh Pai**

Senior Technical Advisor, FSSM Training,  
Water Sanitation & Hygiene Institute

Rajesh has around 20-year rich domain experience in Sanitation, Wastewater & Fecal Sludge Technology Management. Rajesh is currently serving WASH Institute as the senior technical advisor for FSSM Capacity building & training, providing technical guidance and assistance to conceptualize, plan, develop, implement, monitor and assess sanitation projects related to decentralized sanitation, liquid waste & faecal sludge management.



**Nandita Talukdar**

Project Manager, Skill & Capacity Building

Nandita is a development professional with 6+ years of sectoral experience in Skill & Capacity Building projects, Youth/Women Development, Entrepreneurship & Social Welfare. Nandita has worked in multiple roles in Civil Society Organization (CSO), Corporate Social Responsibility (CSR) Foundation and Social Enterprise in various national/International CSR & NSDC Projects. Nandita holds an MSW in Human Resource Management & Labour Welfare (HRM & LW), Post Graduate Diploma in CSR and Mass Communication.

## Water, Sanitation & Hygiene Institute (WASH Institute)

**Vision & Mission:** A world in which all communities have access to safe, protected and sustainable drinking water and sanitation services, with improved hygiene practices.



Established in Kodaikanal, Tamil Nadu, 2008. Operates from 20 locations across nine states & 1 Union Territory of India



Registered non-profit technical, training, research and development organization dedicated to providing practical solutions to a wide range of water, sanitation, hygiene and environmental issues in India.

A training partner of UNICEF, Bill & Melinda Gates Foundation (BMGF)



Technical advisor to Ministry of Housing & Urban Affairs (MoHUA), Jal Jeevan Mission etc.

Former Secretariat of National Fecal Sludge & Septage Management (NFSSM) Alliance.



Multi-disciplinary team of over 190 employees with expertise in Engineering, Urban planning, Policy Advocacy, Training & Capacity Building, Behavioral Change Communication, Social Studies, Business & Enterprises etc.

## Kam Foundation

Kam Foundation, Pune works towards the development & upholding rights of manual scavengers, sanitation workers, other stakeholders of the sanitation value-chain through training, behavioural change communication, capacity building programs etc. The foundation also ensures the social security of manual scavengers and other sanitation workers in Maharashtra. The foundation is affiliated with NSDC & SCGJ and works for humanitarian purposes.

### Prof. Ramakrishna More

Arts, Commerce & Science College, Pune

Prof. Ramakrishna More Arts, Commerce & Science College, Pune is a reputed educational institute that imparts education to multiple disciplines. As the name suggests, the college offers academic programs in Arts, Commerce, Science, and other short-term development programs for the students. The institute runs with the motto 'Bahujan Hitaay, Bahujan Sukhaay' that means 'for the happiness of the many, for the welfare of the many' to empower the socially less-privileged to become successful, sensitive and high-valued citizens of the Indian nation.