

Rural Water Quality Testing Laboratories: Odisha Footprint

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Introduction

The Jal Jeevan Mission (JJM) in Odisha has not only assured a sustained household water supply service but also raised the benchmarks of service delivery for RWS&S institutions and more specifically for the RWS&S Water Testing Laboratories located across the State. Now, RWS&S Laboratories are catering to private water testing both for households / institutions and commercial organization. At the core of the service delivery are the RWS&S Laboratory Personnel. Various internal assessment, observations and feedbacks have recommended to move forward from skill building to developing competencies of these Laboratory Personnel which is utmost need of the hour. This new programmatic approach has helped the RWS&S Laboratories better prepare and comply to the NABL Accreditation / Quality Assurance as well as take up field level activities like FTK Testing & Sanitary Surveillance.

NABL Accreditations

- State Water Testing Laboratory :1
- District Level Lab: 5
- Sub-Divisional Lab: 1

Laboratories and Workforce Deployment

The State has one State Water Testing Laboratory, 30 District Level Laboratory (DLL) and 46 Sub-Divisional Laboratories. Competent human resources both from regular government services and outsourced personnel have been engaged to undertake water quality testing and sanitary surveillance as per the protocol.

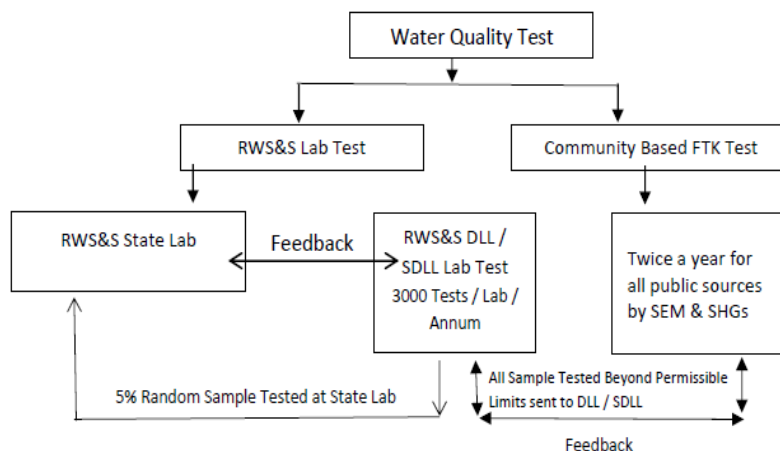
Workforce Deployment

State		Division Level Lab (DLL)		Sub-Division Lab (SDLL)	
Analysts / Chemists		Lab Chemist / Lab Assistant		Lab Chemist / Lab Assistant	
15		60		92	

Qualification		Age		Experience	
Regular Staff	Outsourced Staff	Regular Staff	Outsourced Staff	Regular Staff	Outsourced Staff
MSc. / BSc (Chemistry / Microbiology)	MSc/ BSc. (Chemistry / Microbiology)	45	32	25	10

Water Quality Testing Matrix

RWS&S, Odisha follows a 360° approach to water quality testing and sanitary surveillance. Besides water sample testing in the RWS&S Laboratories, emphasis is on community-based water quality monitoring & surveillance through FTK and Sanitary Surveillance. This approach has expanded the horizon of the RWS&S Laboratories not limiting to district / sub-divisional labs only but getting the consumer on board who also can actively participate and manage the water supply sources and systems at the community level.



Capacity Building & Competency Framework

All personnel are well qualified for the positions as they are recruited as per the norms of the Government. The State Laboratory has been conducting capacity building programs for the lab officials periodically, even though the knowledge levels vary across. To bring in standardization in terms of skill among the Lab Personnel, the State Water Testing Laboratory has developed a Competency Framework based on the requirements of Water Quality Monitoring Protocol and NABL Accreditation process.

The State Water Testing Laboratory has identified seven competencies namely; Water Quality Knowledge, Planning, Safety, Quality Assurance, Methodology, Data Interpretation & Reporting and Communication required for the RWS&S Laboratory Personnel. Knowledge management within the institutions has been envisaged to transfer knowledge of more than 25 years experienced personnel to new recruits with 8 to 10 years of experience. This competency development and learning model will help the RWS&S Laboratory Institutions in the areas of leadership, peer learning i.e., experienced Lab Personnel become the validator / mentor for the less experienced personnel. The model also acts a learning curve for the new personnel to rise in the learning growth curve to take on the service requirement of water quality. From years of experience we have planned to extend the competency model to field functionaries like Self Employed Mechanics (SEMs) and SHGs.

Competencies of RWS&S Laboratory Personnel

- Water Quality Knowledge,
- Planning,
- Safety,
- Quality Assurance, Methodology,
- Data Interpretation & Reporting &
- Communication

Competency Framework for RWS&S Laboratory Personnel

The Drinking Water Quality Technician Competency Framework is designed as a tool to measure and guide the professional development of a water quality technician.

Basic Level	Intermediate Level	Expert Level
<ul style="list-style-type: none"> • Functions independently as an RWS&S Lab Personnel • Understands the importance of the standards and guidelines • Knows and uses correct methodology, sometimes with reference to a manual • Uses techniques to minimize the risks of sample contamination • Seeks advice and additional expertise when interpreting results and making recommendations 	<ul style="list-style-type: none"> • An RWS&S Lab Personnel at intermediate level has all of the competencies at the Basic level and also works well as a leader in a team carrying out water quality testing. • Have management and planning skills, and are able to train and mentor other water quality technicians. • Has competency to carry out water quality testing program, either alone or directing team members • Understands safety and anticipates unsafe situations • Understands and practices quality control during water quality testing • Knows water quality testing methodologies, without 	<ul style="list-style-type: none"> • RWS&S Lab Personnel are experts on water quality testing and sanitary surveillance, provide support to other RWS&S Lab Personnel from other districts / individuals and mentor and coach others in water quality testing. • Technicians are certified and accomplished trainers. • Advanced knowledge and understanding of the standards and guidelines with minimal reference to a guide or manual • Advises when standards or guidelines may have been misinterpreted • Plans and carries out monitoring projects using water quality testing, delegating responsibilities to team members

Basic Level	Intermediate Level	Expert Level
	<p>reference to a guide or manual</p> <ul style="list-style-type: none"> • Confidently provides an accurate interpretation of results and makes appropriate recommendations • Effectively communicates findings to households and communities 	<ul style="list-style-type: none"> • Advanced knowledge of water quality testing methodologies • Trains or mentors' peers in correct water quality testing procedures • Assesses safety risks and safety protocols • Provides accurate interpretation of results considering context • Independently can manage NABL Accreditation / Documentation & Follow-up • Responsible for communicating findings to higher level authorities' representatives



District Level Laboratory- Lab personnel testing Water Sample



Community level interaction on FTK testing and Sanitary Surveillance

Laboratory personnel engaged in testing Water Quality parameters of samples

