



# Title: Training and professional accreditation of wastewater operators in Indonesia

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## Abstract:

The IWSSI (Indonesia Water Supply and Sanitation Institute) project is funded by an AusAid grant and is part of the ADB 44090-012 Supporting Water Operators' Partnerships program. The objective of the project is to build the capacity of urban wastewater services in Indonesia, through the creation of a training and professional certification program for local service delivery organizations -SDOs, also called 'operators'. The IWSSI project recognizes the need for strengthening local institutional capacity as a requisite for an effective development of wastewater SDOs. Hence, the program includes specific elements that address the governance gap. The target group comprises managers and (supervisor) field operators who work in the operation and maintenance department of the SDOs. The capacity building model has two-levels: standard training for managers and operators, and advanced training for managers in the field of governance, covering subjects such as institutional awareness, advocacy, public campaigning, monitoring and evaluation of infrastructure programs, etc. The model follows a staged approach, starting with a reduced group of targets and gradually reviewing, improving and scaling up the activities as the national sanitation investment program evolves. The model will be ready in the second quarter of 2013. Implementation is expected to be coordinated by FORKALIM (the Indonesian association of wastewater operators), supervised by the Ministry of Public Works (PU), supported by IATPI (professional association of environmental and sanitation engineers) and the International Water Association (IWA) and funded by ADB, AusAid and the Government of Indonesia.

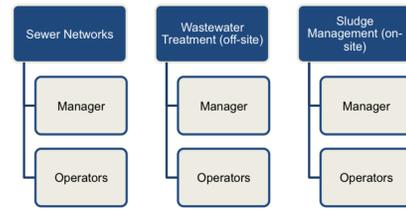
## Introduction:

Local governments are responsible for the delivery of sanitation services in Indonesia. The central government provides regulatory, policy, planning, financial and supervisory support. Access to improved sanitation in urban Indonesia is developing at a very slow rate. Only 2% of the urban population has its wastewater collected by sewers. Furthermore, most of the existing infrastructure is operated inefficiently –in some cases not operated at all-, which damages the public perception about the value of the service and hinders the likelihood of running it in a sustainable manner. This is in spite of the efforts that the Government of Indonesia and donor organizations are making toward the development of capacity at institutional, financial and technical levels in the provision of sanitation services, especially since 2008 when the Government signed the National Strategy and Policy of Domestic Wastewater Management and subsequently launched the Accelerated Sanitation Development in Human Settlements (Percepatan Pembangunan Sanitasi Permukiman, or PPSP). The capacity of wastewater operators (service delivery organizations) in Indonesia is very weak. There are three key factors in this problem:

- The lack of local governance in wastewater.** The overarching problem for the development of capacity of wastewater SDOs is not technical, but of governance. In many cases the roles and responsibilities of organizations and individuals are unclear or not adequately structured. There is a need for people who are capable of raising awareness, advocating for change and managing the organization and the service in an efficient and sustainable way.
- The lack of skilled professionals in wastewater.** There are not sufficient technical knowledge and skills available to address the deficit in capacity at governance, managerial and technical levels. This is also true for the training resources, reflected in poor availability of training materials and instructors or training infrastructure. This factor is linked to the previous one because poor governance hinders both the demand and supply of skilled wastewater professionals.
- The construction-oriented mentality of the sector.** The existing capacity of sector professionals at institutional, managerial and technical level is heavily construction-oriented. As a result, many of the systems that have been built are not performing satisfactorily or in some cases not performing at all. There is no systematic monitoring of systems to verify whether they are still functioning as intended after construction, or whether any operation and maintenance arrangements are in place. The information readily available is limited facilities constructed, investment costs, etc, and very rarely relates to operational indicators.

There seems to be three functional areas that have distinct characteristics in terms of the type of asset operated and maintained and the professional competencies required to do so: sewer networks; wastewater treatment; and sludge management (onsite systems). The tendency in the forthcoming years should be moving toward centralized offsite systems with an increasing prevalence of competency areas A and B. This process, however, will take a long time to settle. Furthermore, the primary target group of this project, in accordance with the ToR, is the group of organizations managing offsite systems. However, given the abundance of septage systems in Indonesia nowadays it is reasonable to assume that the two types of arrangement will coexist for a long time. Moreover, there are indeed areas of skills and knowledge in common in wastewater treatment and sludge management: the treatment processes for sludge. This common ground must be taken into account in and should be used as an opportunity for synergizing professional development and mobility. Within each functional type A, B, or C, the usual arrangement of roles is a manager who is in charge of the specific area (e.g. sewerage) with several field operators under his direction. In large organizations the groups of field operators will normally have a supervisor who plans and co-ordinates day-to-day field activities.

The capacity building strategy for wastewater SDOs meets the following requirements:



- Addresses the fundamental problem of wastewater governance, seeking consensus and support by the key stakeholders in the public service and ensuring that capacity building does target the governance deficits from the perspective of the SDO. The governance approach applies to the IWSSI itself, adopting an institutional and financing strategy that guarantees the sustainability of the model.
- It pursues and promotes an output-oriented operation and maintenance working culture and professional attitude.

- It adopts a demand-driven approach. Conventional, supply-driven approaches of capacity building have failed to deliver major results so far. The model must attract the attention of the individuals who will get trained and of those who demand them. This has three implications: 1) FORKALIM, as the association of wastewater SDOs, should have a central role in the building of capacity of operators; 2) IATPI (Ikatan Ahli Teknik Penyelesaian dan Teknik Lingkungan Indonesia, the national professional association of environmental and sanitary engineers) should become a key element in it; and 3) AKKOPSI, as the association that best represents the will of Indonesian local governments to promote good wastewater services, should support and be part of the initiative.
- This demand-focused effort must be necessarily accompanied by supply-focused institutional efforts at central and local government level, in order to provide an environment where the capacity building can succeed. This includes policy support and financial arrangements for the training and certification, which would involve subsidies in the first phases to gradually converge to a self-sustaining model that can eventually be self-financed by the SDOs.
- It is inclusive, realistic and flexible. To gain momentum and extend throughout the variety of local circumstances, it starts with a reduced number of target subjects that are representative of the spectrum. As the efficacy of the model is tested and adjusted, it may be gradually scaled up.

The model has two-levels of capacity building:

Training and Certification	KNOWLEDGE AREAS BY JOB GRADE	
	FIELD OPERATOR	MANAGER
Standard Level	NOT APPLICABLE	<ul style="list-style-type: none"> <li>- Institutional Awareness</li> <li>- Advocacy &amp; Public Campaigning</li> <li>- Leadership &amp; Motivation</li> <li>- Monitoring and Evaluation</li> <li>- Complex Problem Solving</li> </ul>
Advanced Level (PLUS)	<ul style="list-style-type: none"> <li>- Wastewater Treatment</li> <li>- Sewer Networks</li> <li>- Onsite wastewater systems</li> <li>- Electrical/Mechanical Equipment</li> <li>- Energy Efficiency</li> <li>- Health &amp; Safety</li> <li>- Communication &amp; Reporting</li> <li>- Laboratory &amp; Quality</li> </ul>	<ul style="list-style-type: none"> <li>- Wastewater Business Management</li> <li>- Financial Management</li> <li>- Life Cycle Management</li> <li>- Information Management</li> <li>- Communication, Marketing and Advocacy</li> <li>- Human Resources Management</li> <li>- Quality Management</li> </ul>

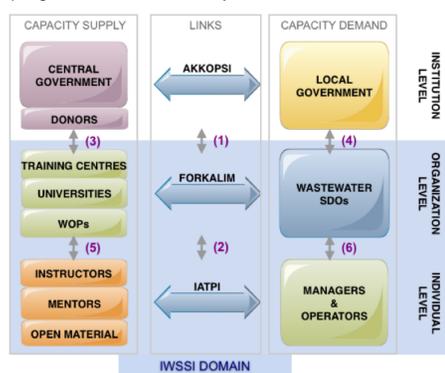
### LEVEL 1: STANDARD

Standard competency training and accreditation for operation and maintenance, covering the two job grades: manager and field operator. The degree of competence within this standard level (shown in green colour) should be such that it can be adapted to the size and nature of local circumstances (onsite systems, hybrid systems) as the implementation of the scheme progresses.

### LEVEL 2 : ADVANCED (PLUS) PROGRAM

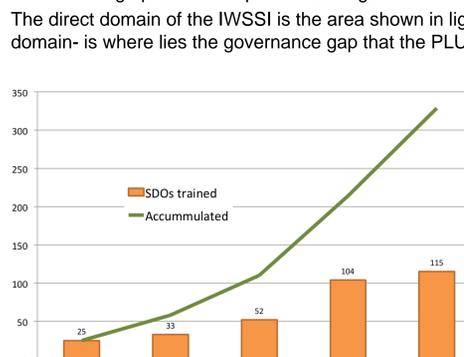
Advanced training and accreditation for management level (Manager PLUS), covering the same competences as the standard, plus a set of skills that directly address the governance gap.

This includes institutional awareness, communication, advocacy, leadership, information management, monitoring and evaluation skills and so on. These individuals should become national 'champions' in the establishment of a professional culture in wastewater services. They would also become the core knowledge group assisting the IWSSI and the government in the development and dissemination of knowledge products as the nation-wide sanitation infrastructure program achieves maturity.



The stakeholder structure portrayed in the diagram is: **FORKALIM** is proposed as the general manager of IWSSI and facilitator of the training and certification program. It is the fundamental nexus between the demand for skills by the wastewater SDOs and the organizations that master these skills: universities, training centers and academies and experienced operators (these would transfer the capacity through WOPs). **IATPI** works as the supporting entity and advisor in the development and delivery of the body of knowledge. This organization has a sound understanding of the needs of individual professionals at both managerial and field operator levels. **AKKOPSI** is a credible, committed interlocutor and advocate of the program at institutional level throughout the country.

It should play a key role in liaising with the Central and Regional Governments and donors to ensure that the proposed scheme for is actually demanded at local level. It would also provide reliable indicators of needs and progress in sanitation and encourage positive competition amongst its members. The direct domain of the IWSSI is the area shown in light blue color. The elements outside this area –the institutional domain- is where lies the governance gap that the PLUS component of the program intends to address from the SDO side.

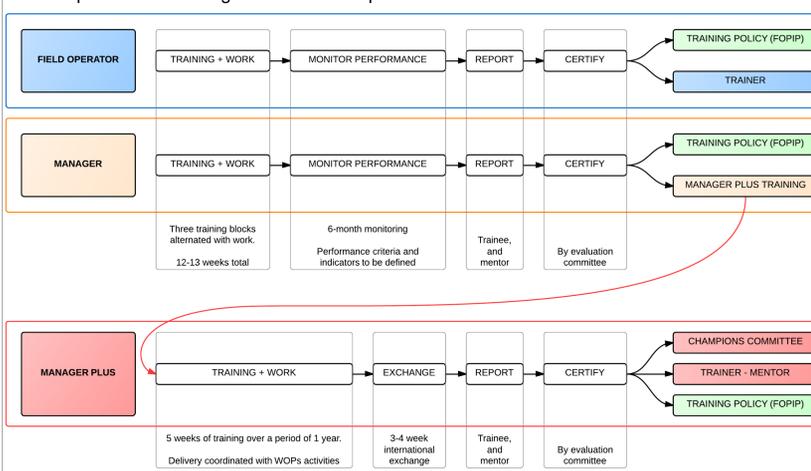


### The proposed action plan has three phases:

- Preparatory phase, comprising the tasks required to set up the IWSSI program.
- Pilot phase, covering years 1 and 2 where the model is tested on some SDOs, evaluated and adjusted.
- Scale-up phase, comprising years 3 to 5 where the improved model is extended to a large number of SDOs and refined further.

### The training cycle has the following sequence:

- ✓ Training of field operators and managers. Alternating work and training for a period of 2-3 months.
- ✓ Training of Manager PLUS, for those managers that excel in their skills and attitudes.
- ✓ Operating performance evaluation: there will be a period over which their respective organizations should monitor the impact of the training exercise on the performance of the individual and his/her functional unit.



Model Evaluation at the end of every year. Once the results of individual and organizational performance evaluation are available, the structure, contents and methods of the model will be assessed and adjusted accordingly. During this task the next target group and pool of instructors will be identified and firmed up. The selection criteria and procedures for recruitment of instructors should be updated and improved at this stage.

