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Utility development: Cairo, Egypt

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Introduction

During the past decade, over US\$3 billion were spent to rehabilitate and expand sanitary drainage and treatment in Cairo. This massive investment in new systems, facilities and equipment was a long-awaited opportunity to reorient and streamline the organizational structure of the Cairo wastewater utility and Ministerial policy units that regulate it. However, these sector reforms were not implemented. The construction of new works was the sole concern of the Government and donors.

With the commissioning of several new wastewater systems, the parties concerned shifted their attention dramatically to "protecting" the investments. They have relied upon short-term international operations and maintenance (O&M) service contracts. These costly contracts address performance problems specific to each pump station or treatment plant.

Ultimately, the Egyptian Government and donor effort to secure uninterrupted returns from the new infrastructure will depend upon reforms. A deliberate, long-term programme is required to establish the financial viability of the sector and to strengthen government policy institutions, which in turn influence the operational effectiveness of the utilities.

This paper describes the efforts of the Egyptian Government, donors and contractors to strengthen the institutional performance of the waste water utility during the construction and commissioning the new works. It describes specifically how training made a contribution to improved utility performance at a time when water/wastewater sector reforms had not yet begun.

The sector

The Cairo water and wastewater sector operated without a long-term, strategic plan during the past decade of public investment. A master plan for infrastructure development was produced but no sector-wide assessment was available until the World Bank prepared one last year. The attention of the Government and bi-lateral donors had been upon the visible need to prevent the flooding of streets and to remove wastewater from the city. Subsequently, the existing sewers (designed for 1.0 million people) were underlaid with three new systems able to convey and treat wastewater for more than ten of the city's sixteen million inhabitants.

There have been numerous reports by consultants highlighting the autonomy, cost-recovery and other institutional requirements for Cairo to receive sustained benefits from the sewer system investments. Since 1984, the Egyptian Government has signed agreements with donors accepting responsibility for O&M costs of the new wastewater removal, treatment and disposal systems. To date, the Government has not been able to cover O&M costs of the limited old system, much less that of the city-wide new systems. Macro level reform of the sector was not pursued. There has not been an increase in the real value of revenues collected and these are not yet retained by the utilities. Notwithstanding the O&M cost agreement, the Government still expects donors to fund O&M service contracts, thereby postponing again local institutional reform.

Technical assistance

Technical assistance attached directly to the Cairo wastewater utility began last year after the commissioning of the first new wastewater conveyance system. The institutional support consultant proposed several presidential and municipal laws. These would streamline the inter-agency requirements for autonomy, cost-recovery and would strengthen personnel and supply systems for effective O&M of the new sewer systems. The use of Egyptian company law was recommended to commercialize the Cairo wastewater utility. For the first time, efforts to strengthen the internal workings of the utility are being made in parallel with initiatives to address the macro issues of the sector.

The use of training

The utility and contractors used training during the rehabilitation of old facilities and the construction of new ones to upgrade the technical skills of the Cairo sewer system staff responsible for O&M. However, post construction services were slow to earn the same priority as construction supervision. Using engineers for training utility staff was viewed as untimely and having a high opportunity cost. It took manpower away from design, document preparation, site supervision, procurements, facility assessments, equipment repair, etc. Other constraints to the use of O&M training was the availability of competent instructors, tools and equipment. These were addressed one-by-one. The priority courses and on-job training activities were limited to specific equipment at specific new facilities.

Each course was thoroughly prepared by an instructor team and was delivered in a timely fashion. Up front preparation was made also by the contractor and utility for the selection of a cadre of young trainees. They responded positively to the attention they received. Since training was a visible and easily-managed activity, it gained a reputation for being one for the more proficient utility and contractor activities. Course approval, preparation and trainee selection were decisions internal to the utility and therefore training was designed so that it could be implemented in-house. The annual training programs were set up in a way to avoid time-consuming interagency authorizations.

The resulting immediacy in the delivery of training was in sharp contrast to the lengthy efforts made to strengthen utility management, ie, the personnel and stores systems, the increase and retention of tariffs or the autonomy to the utility. During times when senior levels of Government were unresponsive to the reform proposals, momentum in management and technical training became identified as momentum in strengthening the utility.

Pre-commissioning period

During the pre-commissioning period, donors, contractors and the utility were concerned with the measurement of training, ie, trainee contact and classroom hours and total numbers of staff trained. While these criteria were easy to report, they did not promote the targeting of training to those work units with responsibility for priority tasks. Rather, the focus on quantities encouraged the offering of general or orientation courses given for short durations to diverse individuals throughout the utility.

However, once facilities and equipment were commissioned and operating under the full or partial responsibility of the utility, the quality of staffing and the training they received was viewed more critically. For a while, technical training was seen as a root cause of effective as well as ineffective performance of assigned staff on the new equipment. Eventually, supervision and safety skills and procedures were given due attention along with technical skills. In the end, training and O&M service contracting was accepted as one of many inputs to the successful operation and maintenance of a facility. Whatever the skill quality of the facility staff, be they contractor or utility technicians, it was always possible for their performance to be undetermined by poor management decisions at the utility headquarters or at the oversight Ministries, ie, the transfer of skilled personnel, underfinancing of maintenance budgets, biased procedures for the recruitment of new staff, incomplete delegation of responsibility to station supervisors, etc.

Post-commissioning training

After the new wastewater systems were commissioned in Cairo, the government water/wastewater policy and or-

ganizational structure of the utility surfaced rapidly as constraints to operations. Managers found themselves with wholly new equipment and systems, yet they had performance problems similar to those of the pre-World War II Cairo sewer system. Procedures for the supervision, promotion and remuneration and safety of personnel as well as the procurement, inventory and issuing systems for spare parts, tools and transport did not support work at the new facilities. Rather, they distorted performance. These problems stemmed directly from a lack of responsive management systems and autonomy. But unlike training, the control over these systems was located outside the authority of the utility. To influence them required a long gestation period and access to the highest ranks in government.

The fact that Government, donors and contractors delayed addressing these sector constraints until after the commissioning of the new investments resulted in a period of reliance upon costly international O&M service contractors. The contractors were requested to protect the new investments and to monitor facility operations for reasons other than their level of skill and experience. Rather, the contractors brought flexible management systems to Cairo that were used to by-pass the policies and procedures that constrained the local utility. O&M service contractors used foreign exchange to purchase and air freight spare parts. They stored, inventoried and provided immediate access to these spares for the work crews that needed them. Moreover, O&M contractors provided training and incentives to staff and their work crews operated on holidays and over weekends to maintain equipment and to attend to emergencies.

Recommendations

1. Investment in infrastructure should be authorized by Government and donors after guarantees are in place that ensure that the local utility is financially viable and able to take full responsibility for equipment O&M. Investments in utility facilities provide returns only when supportive policies, laws and institutions exist at the national level. The host-country ministries of economic planning or international co-operation and the program offices of donor agencies need to plan investments in a comprehensive way to ensure the feasibility of a flow of returns over a the long run. In sum, investment is not equivalent to the completion of construction activities.
2. Contractors and utility leaders need to be aware of the power of the constraints placed upon their performance by sector-level bureaucratic systems. Responsibility for facility operations should be accepted by contractors when they understand fully the risks involved due to the constraints within the overall escort institutions.
3. Contractors can use training of utility staff as a visible, low-risk way to lean local day-to-day operating proce-

dures as well as to provide competencies and confidence to the client. Appropriate skill training is a consequence of hands-on and classroom programs that are targeted to specific audiences as a series of interrelated training experiences, not as an individual course. Facility work groups and their supervisors are the key targets. The use of full-time, multi-disciplinary instructor teams that design as well as deliver training and technical assistance is recommended. Such teams must be built in a deliberate way over a period of time for them to act as models of inter-disciplinary understanding, ie, the civil, mechanical, electrical, safety, supervisory and financial aspects of facilities.

4. O&M and training specialists operating at the level of the facility need a direct exchange of information with top management of the utility and with others involved in sector reforms. In this way the lessons learned on site from applying new O&M skills and upgrading supervision systems can be better used by management. The applications at the facilities provide immediate feedback to those guiding the reform effort and help estimate the real cost to operations due to sector constraints.
5. Reform in the institutional environment of the utility needs to take place prior to rather than parallel to internal efforts to augment skills and proficiencies. Long-lasting improvements require reforms in the water/wastewater sector that lead to a greater autonomy of utilities. Institutional development consultants should refrain from relying upon the easy-to-use tool of training to strengthen utility performance.
6. Training may attract priority because it can be a quick-starting activity, a deliverable and an action that visibly meets contract agreements. But the best training does not necessarily lead to performance improvements of a client. The acquisition of skills is only one of many factors contributing to performance. Project managers need to fight the "activity for activity's sake" mentality applied to training, especially when donors, contract officers and the utility apply pressure for "results." It becomes increasingly expedient to cite training activity as development activity.

In summary

Training can set up an exchange of views that leads to improved understanding and risk taking among utility, contractor and consultant staff. This understanding can be used to guide a reform effort while providing more time to deliver on hard problems. Training needs to be treated as a key component of the delicate process of reform. If executed well, training activities can expose which conditions precedent to facility and utility performance improvement are in place and can suggest which conditions are yet to be created.