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## Town Water Supply and Sanitation: Challenges, Solutions, and Guidelines

In Africa, Asia, and Latin America, the number of towns and their populations are expected to double within 15 years, and again within 30. Already, one-third of Africans and Asians live in towns of 2,000 to 200,000 people. This rapid urbanization makes improving water supply and sanitation (WSS) services central to economic growth and to achievement of the Millennium Development Goals. But sustainable provision of these services, particularly in small towns, presents challenges that may require new approaches to planning, financing, and service delivery.

### The challenges and the proposed approach

Towns of 2,000 to 50,000 merit particular attention because they fall within a management gap: neither the community-based management models effective in rural areas, nor the utility models that work in urban centers are likely to work.

The many towns in this range are widely dispersed. Growth rates are unpredictable, income levels are low, and the paucity of large industrial and commercial consumers limits possibilities for cross-subsidies. Centralized utility models tend not to produce viable services in towns, but decentralized models leave management without adequate technical and financial resources. What is needed are management models and technical solutions tailored to each town.

Our guidance note on the principles of town WSS provides a methodology for setting targets and mobilizing resources to achieve those targets. The key activities proposed include: clarifying key actors' roles, consulting with users, defining service levels based on user preferences and willingness to pay, confirming investment sources, phasing in investments incrementally to reflect demand, analyzing costs and revenues realistically, identifying professional support, establishing systems for monitoring progress, and allowing for periodic review and revision of the business plan.

### Oversight arrangements and management models

The first activity is to clearly separate key functions—policy making, regulation, ownership, corporate oversight, and operations—and clarify who is responsible for each. The five functions are discussed briefly below.

**Policy making and regulation.** Policies for cost recovery, service levels, and public financing are generally set by national governments. Regulations provide instructions for implementing these policies and specify service standards and monitoring procedures. Central government may delegate regulation to local government, but small towns are often unequipped for the job. Local authorities should at least monitor performance on a regular basis as a step toward accountability.

This note reports key messages and findings from *Principles of Town Water Supply and Sanitation*, by Nick Pilgrim, Bob Roche, John Kalbermatten, Cathy Revels and Mukami Kariuki (Washington, DC: World Bank, 2007). The publication and its accompanying *Guidance Manual and Training Modules* are available for download in PDF format from [www.worldbank.org/water](http://www.worldbank.org/water).



**Ownership, corporate oversight, and operations.** Decentralization may give towns responsibility for WSS services, but local governments sometimes cannot raise sufficient investment finance or charge adequate fees for service. These issues should be addressed in the business planning process and in policy dialogue with national governments.

An appropriate management model should separate corporate oversight and operation from each other and from policy making and regulation. Among the models now found in small towns are the following:

- *Community water user associations (WUAs)* are typically cooperatives serving rural or peri-urban settlements that lack their own public administration. Government or donors may subsidize investments, but the WUA is expected to recover operation and maintenance (O&M) costs. The WUA may employ operating staff or contract a private operator.
- *Municipal water departments* provide services under the direct oversight of a municipal council. Funds and staff may be commingled with those of other departments, making management and accountability difficult. This model has not been satisfactory.
- *Water boards* are used in towns with local authorities. Ownership and oversight are vested in the board, which often includes stakeholder representatives. The board may employ staff or contract a local operator
- *Small, independent, private water supply companies* often operate in towns. Most are owner-managed and autonomous. The board may employ operations staff directly or contract a local private operator. Service terms are negotiated directly with users or specified by license.
- *Nationally or regionally owned utilities* sometimes operate in small towns. They are expected to service their debt and recover O&M costs. They are most viable when established as a corporation with an autonomous board and a performance contract. Significant improvements have resulted when managers in small towns work under delegated management or performance contracts. This model can render local representatives voiceless, but, it makes cross-subsidies from large cities to smaller towns possible.

## Appropriate design and financing arrangements

Urban WSS systems in the past have been designed to set standards centrally to accommodate demand as far as 25 years into the future. Too often the result is an oversized system that provides services at a cost that poor households cannot afford. A better design concept is to meet current demand at acceptable prices, while allowing for modular expansion and upgrades of some system components. Limiting costs by linking investments to *current* demand frees funding for other uses, promotes financial sustainability, and reduces the need for subsidies.

The modular model is not appropriate for all components. Reservoirs and water-intake systems, for example, should include excess capacity, as future land availability and water rights are uncertain. In contrast, the water supply network and storage tanks do not enjoy significant economies of scale and can be extended when and where demand materializes.

Towns may face several problems when introducing piped water and sewerage systems: low initial revenues (even well-designed systems recover costs slowly); resistance to change; inability of users to pay connection fees or bills. Research and promotions in target communities can help assess and stimulate demand, engage the community, and encourage behavioral change during implementation. Understanding cultural preferences is critical in planning such efforts. Low-cost methodologies for assessing demand include focus groups and simple surveys. Those who cannot afford an individual household connection should have the option of multi-household taps or buying from neighbors.

Even if initial investments are limited to those justified by existing demand, towns may be unable to finance the full cost of investments upfront and may require grants from the central government or donors. Once established, however, WSS systems should require no support to cover ongoing O&M, renewal and replacement of assets, and system expansion over time. Any external financing should be conditioned on behavior that promotes self-sufficiency. A phased approach is also recommended, with funding provided only after appropriate preparations have been made.

There are other ways to finance WSS services. As decentralization intensifies, local governments will receive more central government funding—and the authority to raise local revenues. Subsidizing connections for low-income households can increase water sales to the point of offsetting the subsidy. In some countries, funds to provide grant financing or commercial loans to WSS services have been established by governments and donors. They should be used to promote rather than inhibit commercial financing. As local financial markets develop, private financing should become more accessible. Regardless of source, the terms of loans should match utilities' ability to pay, allowing grace periods and repayments that increase with revenues.

## Contracting professional support

Most small operators in towns cannot afford to hire specialists—and often they do not need to do so. A

few full-time staff can handle routine WSS services in-house in towns of 2,000 to 50,000 people, while more specialized professionals are available on contract to handle less routine matters (table 1).

Alternately, all operations may be contracted out to private firms. As capacity develops, local operators might handle some specialized tasks in-house, but still get external support for tasks that can be performed more efficiently by contractors.

External support comes in many forms, including:

- *Consulting engineers, financial advisors, and management consultants* hired on a retainer basis or through contracts.
- *Umbrella organizations* that provide specialists in M&O and other services for a fee. Estonia's Eesti Veevärk is an example.
- *Larger utilities.* Water supply and sanitation utilities in large cities may provide services to small-town operators for a fee.

**Table 1. Routine vs. specialized tasks in the management of town WSS utilities**

<b>Task category</b>	<b>Routine (specialists not required)</b>	<b>Specialized (specialists required)</b>
Economic regulation	Reviewing operator's reports on service quality and financial performance. Ensuring that connection and tariff charges are consistent with regulations or contract.	Design of reporting requirements, formats, and procedures. of performance targets. Tariff reviews.
Public health regulation	Reviewing reports of water and wastewater quality. Issuing warnings in the event of contamination.	Periodic water and wastewater quality testing and auditing of operator's reports.
Customer protection	Handling customer complaints not resolved by the operator.	Contract arbitration.
Business planning	Information and inputs based on routine reports and day-to-day experience. Adoption of business plan.	Preparation of business plan.
Operations	Meter reading, billing and collection, accounting, routine O&M, new connections, monitoring production and water quality, responding to customer complaints.	Problem solving and major repairs. Design and implementation of efficiency improvements, such as training staff, reduction of unaccounted-for water, optimization of power and chemical use, and collection performance.
Expansions	Participation in and approval of plans, financing arrangements, procurement, and supervision.	Engineering design, management of procurement, construction supervision.

- *Private operators.* Full-service private water supply operators generally avoid small towns unless they can achieve economies of scale by providing services in many towns. An option is the franchise arrangement, whereby a local franchisee receives support from a full-service private franchisor for a fee.
- *Professional development programs.* A central help desk in Nigeria provides training for operators in 250 towns through short courses on all aspects of service administration, operations, and maintenance.

Contracts for support should be short (two to five years) and allow for adjustments. Remuneration should include performance incentives, such as bonuses for specified outcomes.

## The business plan

Traditionally, water supply systems are designed and built by central governments and handed over to a town. The business planning process is often overlooked.

Business planning is an iterative process involving financiers, regulators, the town, the oversight body, the operator, and customers. It checks service levels against regulations, consumer demand, and willingness to pay. The results of these checks help to determine investment needs, guide operations and staffing plans, and underpin financial projections. If the cost exceeds the predetermined willingness to pay, the utility will be financially unviable, and plans may have to be scaled back.

In addition to performance targets and plans for investments, financing, operations, staffing, and

marketing, the business plan should include a professional-support strategy and a plan for financial management and reporting.

The plan should be revised every three to five years and updated annually between revisions. Preparing and reviewing budgets in the context of the business plan ensures consistency with the longer-term plans of the utility.

## Conclusions

The modular approach to town WSS services requires changes in the way donors and governments plan and finance services. It requires new oversight, management, and professional-support models that develop capacity at the town level. The payoff would be better-managed, more-reliable, and financially viable services for the growing numbers of people living in towns.

To accomplish these changes, sector policies must change at the national level and within aid circles. Revised policies should ensure that decentralization is accompanied by the authority to make decisions and raise revenues. Towns should be allowed a choice of management models. Legal foundations should be laid for the aggregation of towns into larger, more economical service areas. Financial assistance should be extended only to efforts that promote financial viability. Technical standards should encourage modular approaches and sequential upgrading. Steps should be taken to promote the use of private operators and specialized support organizations, accompanied by guidelines for business planning and for contracting with operators and consultants.

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