

India – Water Supply and Sanitation:

Bridging the Gap between Infrastructure and Service

Executive Summary

Access to water supply and sanitation infrastructure is increasing . . .

In India's urban areas access to drinking water considered safe by the Government's standards rose from about 82% of the population in 1991 to 90% in 2001. This figure, which includes access to non-piped water, could rapidly reach 100%, consistent with the aim of the Ministry of Urban Development to achieve 100% coverage in 2007 (end of the 10th Plan). But in an urban environment non-piped water may *not* be considered a safe source. Thus progress toward Target 10 of the Millennium Development Goals (MDGs) of *halving, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation* would need to be measured on the basis of access to piped water. This indicator, which rose from 68.5% in 1990 to 74% in 2001, would need to improve to 86.5% by the end of the 12th five-year Plan (2017) if India is to meet the MDG target. The record of progress indicates that development of the piped water supply infrastructure may be slightly behind schedule, suggesting a need to accelerate investment. The urban population share with access to basic sanitation, which rose from 43% in 1990 to 61.5% in 2001, is likely to improve to 81.5% at the end of the 12th Plan, thus exceeding the theoretical MDG target of 71.5%. Here India appears to be on track. Based on preliminary estimates, meeting the MDG target in urban areas would require investment of about Rs 425 billion and Rs 500 billion (US\$10 billion and US\$11.8 billion) for the 11th and 12th Plans, and recurrent expenditures of the same order of magnitude of about Rs 390 billion and Rs 505 billion (US\$9.2 billion and US\$11.9 billion).¹

In rural areas access to drinking water increased from about 65% of the population in 1990 to about 90% in 2001. Thus it appears likely that if India sustains investment at a level similar to that of the past decade, it could achieve 100% coverage of water supply infrastructure if not by 2007, as targeted by the Rajiv Gandhi National Drinking Water Mission, then probably by 2012. The rural population share with access to basic sanitation, which may have been as low as 5% in 1990, rose to about 20% in 2001. If it is to reach 53% at the end of the 12th Plan to meet the MDG target, India may be somewhat behind. Meeting the MDG target in rural areas would require investment of about Rs 370 billion and Rs 330 billion (US\$8.7 billion and US\$7.8 billion) for the 11th and 12th Plans, and recurrent expenditures again of the same order of magnitude of about Rs 305 billion and Rs 355 billion (US\$7.2 billion and US\$8.4 billion).

¹ All figures are in 2001 rupees. The exchange rate used is US\$1.00 = Rs 42.5.

... but access to reliable, sustainable, and affordable water supply and sanitation service is lagging behind.

Reliable? Whether in small towns or mega-cities, or in single- or multi-village schemes, piped water is never distributed for more than a few hours a day, regardless of the quantity available. In urban areas raw sewage often overflows into open drains because sewers are blocked or pumping stations not functioning. And in rural areas hand pumps can remain out of order for months, while latrines too often are used for purposes other than that for which they were designed.

Financially sustainable? A few mega-cities recover from user charges the full cost of water supply and sanitation service, including operation and maintenance and capital costs. But most urban operations and all rural schemes still survive on large operating subsidies and capital grants provided by the states.

Environmentally sustainable? Most cities must compete with the agricultural sector to secure water rights, and very few contribute to the abatement of pollution in receiving bodies. Villages relying on groundwater suffer from the rapid depletion of aquifers, whose mining for irrigation purposes is encouraged by highly subsidized power rates.

Affordable? Most households, forced to cope with poor quality water supply and sanitation service, spend time and money on expensive and unsafe substitutes and on treatment for waterborne diseases. User charges are low by international standards, but the cost of the alternatives on which users must rely far exceeds the full cost of providing good quality service. And while the poor may be the intended beneficiaries of the low user charges, they suffer most from the poor quality of service that results.

So the true challenge is not to increase access to infrastructure to almost 100% of the population—but to increase access to reliable, sustainable, and affordable service. India is unlikely to be able to meet this objective unless it adjusts policies, institutional arrangements, and financial incentives to help improve service delivery . . .

Improving reliability. Improving the reliability of service would require clarifying the roles of the actors in the sector (policymakers, regulators, financiers, asset owners, and service operators) and establishing enforceable contractual relationships between them so as to increase transparency in decision making and accountability to end users. In addition, full responsibility for service provision would need to be devolved to the lowest appropriate level of government. As part of this, the function of “promoter of infrastructure”, now the responsibility of state engineering agencies, such as Public Health Engineering Departments or State Water Boards, would need to be consolidated with that of “provider of service,” to ensure that water supply and sanitation projects correspond to what service providers can afford and can operate. The revenues and expenses of water supply and sanitation operations would need to be separated from those of the local government and “ring-fenced”; clarifying the financial situation of service providers is deemed to be essential to design appropriate financial recovery programs. To further increase accountability, the “beneficiaries” of a nearly free (but very poor-quality) service would need to be transformed into “paying customers” with the right to express concerns and preferences. Finally, private sector participation would need to be promoted. The initial emphasis should be on service and management contracts, since the main issue is increasing the

efficiency of day-to-day operations rather than raising private equity and commercial debt to finance the extension of infrastructure.

Achieving financial sustainability. Achieving financial sustainability would require establishing sound principles for pricing water supply and sanitation service so as to meet financial, economic, equity and simplicity objectives. Aiming at full recovery of operation and maintenance costs from user charges by the end of the 11th Plan (2012) is probably feasible for both urban and rural service. Going beyond and contributing to capital costs could be envisaged in a second phase; preliminary estimates show that it is likely that user charges needed to cover operation, maintenance and capital costs would, as an average, be lower than those in comparable countries. The transition from today's highly subsidized sector to a much less dependent one would need to be financed in a transparent and targeted manner, with any operating subsidies still provided by the states linked to actual improvement in the performance of service providers. To tackle the cost side of the equation: (i) to reduce operation and maintenance costs: efforts would need to focus on creating appropriate financial incentives mostly by increasing private sector participation; (ii) to reduce capital costs: the dimensioning of sector infrastructure should be limited to what is strictly needed and the quality of construction should be improved to extend useful life of assets; and (iii) to reduce financing costs: financing conditions should be adapted to what the sector debt servicing capacity. State financing programs would need to be designed to support the recovery of the urban water supply and sanitation sector, not merely to fill gaps in infrastructure. The role of the Government of India in supporting the reform should be extended: a financing mechanism similar to the rural sector's Swajaldhara may have to be created for the urban sector. Finally, external financing needs would have to be harnessed primarily to support implementation of new policies, institutional arrangements, and fiscal incentives, not just to rehabilitate and extend infrastructure.

Achieving environmental sustainability. To achieve environmental sustainability, bulk water would need to be priced according to sound economic principles, to give consumers the right signals about the actual cost of this increasingly scarce commodity. Water rights would need to be strengthened and water rights markets developed to: (i) allow water-starved cities an official access to water resources that are now used, often inefficiently, by agriculture; and (ii) ensure proper compensation of farmers. Depletion of groundwater, still the main source of water for rural schemes, would need to be limited by pricing the electricity delivered to farmers according to sound principles and ensuring that power bills are actually paid. Water quality would need to be protected by paying as much attention to proper waste water collection as to waste water treatment; a large share of the waste water now generated never reaches treatment facilities. Infrastructure would need to be planned to achieve realistic environmental objectives: waste water treatment to the highest level often fails to improve the water quality in the receiving bodies enough to be economically justified. Finally, efforts to support behavioral change toward better sanitation practices should be continued, particularly those aimed at eliminating open defecation.

Improving affordability. Improving the affordability of service would require first of all reducing costs, as already mentioned above. Cost recovery strategies would need to include transparent, well-targeted subsidies for the poor, both to help obtain connections to service and to encourage the consumption of a minimum quantity of water.

... and build the capacity now lacking.

In the urban water supply and sanitation sector an important step toward building capacity would be to create an identity for the "urban water supply and sanitation industry." A

professional association of service providers could play a key role in disseminating best practices, implementing full scale benchmarking, and providing training and certification for sector professionals. Training institutions would need to adapt their programs, currently focused mainly on technical design issues, to the new needs of the urban sector. And special information programs would need to be developed for key stakeholders, i.e., local politicians, consumer associations, and the many nongovernmental organizations with a special interest in water supply and sanitation. In the rural sector special training programs would also need to be developed to build the capacity of local governments (Panchayati Raj Institutions – PRI).

While most of these principles are generally well accepted in India, they have yet to be consistently implemented. What can the World Bank do to help India improve the reliability, sustainability, and affordability of water supply and sanitation service?

In the urban water supply and sanitation sector the World Bank could target its assistance primarily to a few selected projects that would support the reliability, sustainability, and affordability agenda; to mega-cities (Delhi, Chennai, Mumbai...), where it has traditionally been involved; and to selected reforming states with smaller urban centers, mainly with the aim of designing options that can be easily replicated.

In the rural sector, where the Bank is providing support through three ongoing projects and three projects under preparation, it should gradually move toward a sector-wide approach (SWAp) in states where full agreement can be reached on policies, investment plans, implementation arrangements, and monitoring and evaluation mechanisms.

The Water and Sanitation Program, which has a significant budget for policy dialogue for both urban and rural water supply and sanitation, should continue to disseminate best practices and to assist selected states in formulating the concept of sustainable projects and developing detailed procedures for sector reform, including for the preparation of financing applications for Indian and international lending agencies and independent appraisal procedures.