

# Water Supply and Sanitation



A sufficient supply of safe water is vital to human life. Improved systems are needed for the protection, extraction, treatment, delivery, and storage of water to support healthy, economically active communities. Appropriate sanitation technologies with improved hygiene practices are critical for preventing diarrheal diseases and fully realizing the health and economic benefits of investments in water. As the world strives to meet the Millennium Development Goals by the year 2015, many donors and governments realize that a much greater effort is required to increase people's access to improved water and sanitation.

RTI International has conducted projects in water and sanitation planning, utility management, local government service delivery and financing, environmental health, and water resource management. We have built a reputation for excellence in program design, implementation, and evaluation with the U.S. Agency for International Development (USAID), the Asian Development Bank (ADB), The World Bank, United Nations agencies, and private sector clients. RTI has a broad team of technical professionals with multidisciplinary skills in health, engineering, economics, and social sciences. RTI has financially strong, experienced project management with

on-the-ground presence in over 40 countries in Africa, Asia, Eastern Europe, Latin America, and the Middle East.

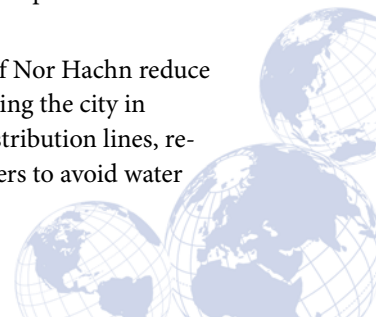
## Urban Water Supply and Utility Management

RTI has worked with national ministries, municipal utilities, and regional water authorities to improve their capabilities in strategic planning, capital investment planning, technical design, financing, operations and maintenance (O&M), and customer service.

- In Indonesia, we designed and conducted an Advanced Management Training Program and international study tour for 26 water utility managing directors. The course was adopted and then delivered by the Indonesian Water Supply Professional Association, with exemplary managers as instructors. RTI also conducted surveys in peri-urban areas, assessing the quality and satisfaction with water vendor services. In other areas, we assisted water utilities conduct customer satisfaction surveys to be more customer-focused and incorporate the results into their strategic planning.
- In Armenia, RTI helped the city of Nor Hachn reduce nonrevenue water by 40% by guiding the city in procuring equipment to repair distribution lines, re-plumb residences, and install meters to avoid water diversion.

### RTI Water Utility Tools and Training Programs

- Assessment protocols in management, finance, O&M, nonrevenue water, and customer satisfaction
- Advanced management training for water utility directors
- Optimal nonrevenue water management tool
- Handbooks on utility corporate planning, participatory capital investment planning, pricing, borrowing, financial management and maintenance management, and project impact assessment
- Water utility performance measurement and benchmarking tool, including RTI's Performance Star System™



- In Poland, we helped establish the National Standards Board which issued voluntary standards for water service pricing, allowing a balance between local control and high-quality pricing methodologies.
- RTI also developed guidelines published by USAID to help policy makers evaluate the adequacy of national sanitation policies as the first step in reforming programs for improved sanitation services. RTI field-tested the guidelines on the policies of Peru, South Africa, and Uganda.

## Rural Water Supply and Sanitation

RTI provided technical assistance to governments, rural development agencies, and communities to improve sustainable access to water supply and sanitation in small towns and rural areas, as well as to promote better hygiene.

- In Senegal, RTI is leading a USAID project to expand rural access to water and sanitation by fostering the growth of local service providers, using low-cost technologies, and instituting community-driven planning and management through water user associations.
- In Madagascar, RTI is leading USAID's main health project. We work with local NGOs to implement Community-Led Total Sanitation (CLTS), a more sustainable community-based approach as an alternative to quick-fix, subsidized construction programs.
- In Tunisia, RTI assisted the government with transferring the responsibility of operating water systems to rural communities, in developing the national strategy for water user associations, and in designing the nuts-and-bolts of O&M systems that local artisans may implement.
- In Sri Lanka, RTI surveyed 1,800 households to develop a profile of rural water users, including their sanitation and hygiene practices and willingness to pay for improved services. RTI evaluated the spatial correlation of poverty, water, and sanitation through GIS mapping and generated tariff and targeting recommendations for a government initiative to privatize the water supply system.

## Watershed Management

As a pioneer in water data management, RTI developed the U.S. National Hydrographic Database that has been used by U.S. Environmental Protection Agency and various states for years. RTI adapted this tool and integrated GIS to conduct river basin-modeling in Bulgaria, China, Hungary, Jordan, Kazakhstan, Poland, Romania, and Slovakia.

- For China's Hai River Basin, RTI introduced Chinese counterparts to best practices in water quality, remote sensing, and data management systems.
- In Eastern Europe, RTI's efforts helped link modeling and decision making along the Danube River, using a graphic database tool (then known as DEMDESS).
- In Jordan, RTI helped develop a watershed protection model to prevent groundwater contamination of the Qairawan Springs watershed. The pilot study demonstrated the methods, institutional framework, and interagency collaboration for replication.

## Impact Evaluation and Assessment

RTI is a leader in qualitative and quantitative evaluation of the health and socioeconomic impacts of water supply and sanitation interventions, having developed the *Guide to Water and Sanitation Sector Impact Evaluation* for The World Bank.

- In India, RTI surveyed more than 10,000 households to evaluate the child health impacts of improved water and sanitation services and hygiene awareness in the states of Orissa and Maharashtra using quasi-experimental and randomized controlled trial study designs.
- In the Indian state of Andhra Pradesh, RTI researched household attitudes and practices related to water treatment, storage, and use to inform the commercial launch of point-of-use water treatment and storage products for consumers earning less than US\$5 a day.
- In the West Bank, RTI conducted a household survey in several villages to quantify the health benefits of water and sanitation projects. RTI then recommended strategies to maximize those benefits, address gaps in community awareness about hygiene practices, and improve water supply management.
- In Kenya and India, RTI is monitoring and performing a cost-benefit analysis to promote locally developed commercial solutions for safe water transport and storage that are based on needs and behaviors of the poor.

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