SERVICE MODELS FOR PROVIDING WATER AND SANITATION SERVICES TO THE POOR IN URBAN AND PERI-URBAN AREAS

MARCH 2008

ARD, Incorporated
PROVIDING WATER AND SANITATION SERVICES TO THE POOR

EXTENT AND IMPACT OF THE PROBLEM

Photo: Nepal, ARD, Inc.
EXTENT OF THE PROBLEM

• It is estimated that more than 1 billion people lack access to a minimal amount of clean water, surviving on an average of only 5 liters a day.

• Coverage rates are lowest in Sub-Saharan Africa, but the greatest number of people without clean water live in Asia.

• The sanitation situation is even worse. About 2.6 billion people—half the developing world’s population—do not have access to basic sanitation.

• Two-thirds of the people lacking adequate water and sanitation access are poor—living on less than US $2 a day. More than 660 million people without sanitation live on less than $2 a day, and more than 385 million on less than $1 a day.
IMPACT OF THE PROBLEM

• Lack of access to adequate water and sanitation has a ripple effect on a country’s human and economic development, and a disproportionate impact on women and children. Key impacts, according to the UN, include:
  – Nearly 2 million children per year die as a result of diarrhea.
  – Children miss about 400 million schooldays yearly due to water-related illness.
  – Diarrhea and malaria (two water-related diseases) are major causes of worker illness and lack of productivity.
  – Women and children (especially girls) spend several hours a day collecting water.
  – More than 1 billion women and girls lack safe and private toilets, both at home and at school. Lack of these facilities forces women into unsafe situations or causes them to miss school or work.

• Illness and loss of educational opportunities due to water and sanitation issues limits opportunities for households to move out of poverty.

• Furthermore, there are direct economic costs related to the treatment of water-related diseases and loss of economic activity.
IMPACT ON THE POOR

Access to WSS by income quintile

PROVIDING WATER AND SANITATION SERVICES TO THE POOR

WHAT CAN WE DO?

Photo: Burkina Faso, ARD, Inc.
FRAMEWORK FOR ACTION

• The Millennium Development Goals (MDGs):
  – Call for halving “by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation.”

• The Water for the Poor Act:
  – Signed into law in 2005, makes access to clean water a focus of US foreign assistance.
ADDRESSING THE PROBLEM

- The World Health Organization (WHO) estimates that an additional investment of US $11.3 billion per year is needed to achieve the MDGs for drinking water and sanitation at the most basic levels.
- Yet…
  Investments in water and sanitation can generate a high return. It is estimated that for every $1 spent in the sector, on average, another $8 is created in costs averted and productivity gained.
There are inherent challenges to providing water and sanitation services to the poor:

- The poor are typically not connected to the network.
- The poor can be difficult to locate and survey.
- Land tenure and the legal status of informal settlements can be major obstacles to network extension.
- Available information on service preferences and price constraints is lacking:
  - Service preferences may not be known.
  - There are misperceptions about the ability of poor customers’ ability and desire to pay for service.
- Public authorities may not allow adequate prices to be charged for services to the poor, leading to an unsustainable financial situation for the utility.
Providing Water and Sanitation Services to the Poor

Moving Toward Solutions

Photo: John Mendelsohn
Strategies for expanding access and improving service should:

- Examine tandem approach to improving the services through the main utility AND through small service providers (SSPs) for whatever period they may be necessary and/or efficient—short, medium or long term; and
- Pay equal attention to the realistic rate at which the network can be expanded on a sustainable basis and the potential to make small-scale services more effective.
DEFINING THE TIME FRAME

Tailored Pro-Poor Solutions

Within Affordable Boundaries

- Improve Existing Services and Access (Short-term solution)
- Network Coverage (Long-term solution)
FINDING SOLUTIONS

The toolbox of solutions for reaching the unserved and underserved includes the following categories of interventions:

1. Policy, legal, and regulatory frameworks;
2. Reforms at the utility level;
3. Technical and service options; and
4. Financing mechanisms.

The right solution, or mix of solutions, is determined through a process of study and consultation.
INITIAL STUDIES

Initial Analysis

• What is customer willingness/ability to pay?
• How are the poor currently served?
• What are current/projected demands?
• What are the impediments to service?

Studies inform policy, regulatory, utility, technical, and financial solutions
CONSULTATION

• Identify the right community voice and method of inclusion.
• Liaise and educate on reform objectives, service and pricing levels, health impacts.
• Reassure community that efforts will be made to improve the efficiency and service of the provider.
• Ongoing participation of community is key to successful and sustainable improvement.

Community consultation helps ensure ownership and sustainability of the solutions
PROVIDING WATER AND SANITATION SERVICES TO THE POOR

POLICY, LEGAL AND REGULATORY INTERVENTIONS

Photo: Angola, ARD, Inc.
The policy, legal and regulatory frameworks are often biased against service to the poor—either implicitly or explicitly:

- Ministries and regulators may lack adequate information, specialized knowledge, and the coordination needed to develop pro-poor frameworks.
- There may be a tendency to focus on the service provided by the main utility(ies) rather than the smaller providers on which the poor depend.
- There may be explicit policies and laws that discourage utility service to the poor or prohibit SSPs from operating in the utility service area.
- There may be a lack of attention to or understanding of the price structures and prices that truly benefit the poor.
- Levels of service and standards may be based on information established by, and appropriate to, developed countries or higher-level income groups.
POLICY, LEGAL AND REGULATORY SOLUTIONS

- Government needs clearly defined objectives regarding the poor. The strategy to achieve universal service should be spelled out with clear definition of what this means, yet retain the flexibility to be adjusted.
- Legislation, regulations, and contracts may need to be reformed to correspond with those objectives.
- The necessary institutions should be created or strengthened with the appropriate mandate and resources.
- If the government accepts that SSPs have a necessary role for a period of time, this needs to be explicitly stated, and the government should ensure that no laws or regulations impede this strategy.

**Key issues for consideration:** cost recovery requirements, legal requirements/rights of consumers and providers, appropriate separation of powers, transparency and accountability, safeguarding the interests of consumers
POLICY, LEGAL AND REGULATORY SOLUTIONS: ZAMBIA CASE STUDY

The national water regulator in Zambia, NWASCO, began functioning in 2000, regulating 10 public commercial water providers, some private utilities, and local authorities.

- **Giving a Voice to Customers**
  NWASCO created Water Watch Groups (WWGs) and delegated power to resolve customer complaints. WWGs are voluntary, independent consumer groups responsible for consumer rights and dissemination of information. If the utility is non-responsive, the WWGs coordinate with NWASCO.

- **Extending Service to the Poor**
  NWASCO created the Devolution Trust Fund (DTF), a financially separate institution responsible for providing financing for water supply operators to extend services to the urban poor. The DTF has also financed pilot sustainable water kiosk schemes.

- **Regulating Small-Scale Providers**
  In Zambia, Water Trusts are SSPs established with donor and community coordination in the peri-urban areas of Lusaka (serving 37% of Lusaka’s population). NWASCO is considering development of a MOU between the Water Trusts and Lusaka’s utility, and to regulate the trusts through the utility’s license.
PROVIDING WATER AND SANITATION SERVICES TO THE POOR

UTILITY-LEVEL INTERVENTIONS

Photo: Panama, ARD, Inc.
UTILITY-LEVEL CHALLENGES

Improving the overall management, operations and capacity of the network utility can be critical to improving service to the poor:

– Public utilities remain core to water services, yet utilities in developing countries may lose up to 50-70% of treated water due to poor infrastructure or poor management—limiting the amount of water available to unserved customers.

– “Lost” water is often used by unauthorized individuals and private providers.

– Low cost recovery and uncertain financing flows limit the utilities’ ability to expand the network.

– Utilities struggle with inappropriately high technical requirements for service while typical network service may be unaffordable for poor customers.
UTILITY-LEVEL CHALLENGES

- Consumers use water inefficiently
- Investment, maintenance are postponed
- Customers are ever less willing to pay
- Managers lose autonomy and incentives
- Subsidies often fail to materialize
- Motivation and service deteriorate further

- Low tariffs, low collection
- High usage and system losses drive up costs
- Services deteriorate
- Utility lives off state subsidies
- Efficiency keeps dropping
- Utility can’t pay wages, recurrent costs or extend system
- System assets go “down the drain”

Crisis, huge rehabilitation costs

UTILITY-LEVEL SOLUTIONS

• Improve utility performance (key to expanding utility coverage) through:
  – Financial sustainability,
  – Good governance, and
  – Clear and transparent service targets.

• Set realistic coverage targets.

• Have financing in place to meet targets.

• Create incentives to:
  – Innovate and develop suitable lower-cost technical solutions and standards, and
  – Expand appropriate coverage and service to the poor.
The national water and sanitation utility of Uganda, NWSC, began a dramatic reform process in 2000. **Key reform components included:**

- Targeted improvement initiatives;
- Implementation of a performance contract between NWSC and the Government of Uganda;
- Implementation of contracts between NWSC support service departments and delegated service contracts with management and staff of specific service areas; and
- Creation of a reward system and financial incentives for the best performing areas.

**Pro-poor achievements included:**

- About 40,000 connections added in the last five years;
- Connection fee reduction for customers within 50 meters of the supply line;
- About 400 water kiosks erected, primarily in poorer communities; and
- Increased utility revenue reinvested into network expansion.
If the government intends to offer a contract providing for private sector partnership (PSP), the range of pro-poor considerations includes:

- Ensuring that the private partner has the information and mandate to serve poor consumers—as well as the financing and tools to make this happen;
- Ensuring that the partnership improves utility performance to the extent that additional investment is attracted, or that efficiency improvements free resources for coverage extension;
- Ensuring that there are explicit pro-poor obligations/incentives in the contract, and that they are achievable, enforceable, and financeable; and
- Striving to include SSPs within the partnership.
In 1997 the Philippine government privatized the Metropolitan Waterworks and Sewerage System of Metro Manila. The two concessionaires were required to reach the poor through:

- Establishment of public standpipes;
- Provision of group taps for 2–5 households, where users form groups, register connections, and share the cost for usage;
- Introduction of community-managed water connections with a metered master connection;
- Water distribution by community associations;
- Individual connections; and
- Sale of water to private companies that manage water distribution in squatter areas.
PROVIDING WATER AND SANITATION SERVICES TO THE POOR

TECHNICAL AND SERVICE INTERVENTIONS

Photo: Panama, ARD, Inc.
Technological and Service Challenges

There are specific technical and service challenges related to serving the poor:

- The poor often live in physical locations which complicate network service extension.
- Uncertain land tenure and property rights make water delivery and billing/collection extremely challenging.
- When the poor do not own their homes, the utility may be constrained in its legal ability to serve customers—or because of risk, may hesitate to serve customers.
- Standposts may be the prevailing utility method of reaching poor customers, but these may be hard for the utility to manage and offer poor service for customers.
Achieve coverage through the most cost-effective and demand-responsive means:

– Allow differentiated service levels (standposts, domestic connections, condominial); and

– Decentralize service, accountability, and resources to the appropriate level to be demand responsive and to create ownership.
PARTNERSHIPS TO FILL DELIVERY GAPS

• Partnerships with communities and SSPs are important to reach low income consumers—there are several kinds of SSPs and different arrangements are appropriate:
  – Dependent water SSPs obtain their water from the utility.
  – Independent water SSPs obtain their water from boreholes and surface sources.
• Create a “wholesale model” to supply poor communities through dependent water SSPs.
• In the sanitation sector, small private operators can partner with the municipality or utility to maintain and empty latrines, empty septic tanks, and dispose of waste.
• Utilities and community-based organizations (CBOs) can partner to reach an understanding of the best way to reach poor communities.
CASE STUDIES ON INNOVATIVE PARTNERSHIPS TO FILL SERVICE DELIVERY GAPS

• **Senegal:**
  – Partnership between private utility/asset holding company and local CBOs: utility increases number of standpipe with co-funding from local communities.

• **Malawi:**
  – Partnership between Water Board and local communities: communities fund capital improvements while Water Board provides technical assistance and harmonized standards.
  – Partnership between Water Board and local standpipe managers: focused on ensuring proper distribution to water kiosks.

• **Tanzania:**
  – Partnership between city municipal sanitation department and private operators to enable private operators to provide septic collection services and to legally use approved disposal sites.
PROVIDING WATER AND SANITATION SERVICES TO THE POOR

FINANCIAL AND COMMERCIAL INTERVENTIONS

Photo: Armenia, ARD, Inc.
TWO INTERRELATED CHALLENGES

1. The financial sustainability of the service provider, and
2. The ability of the poor consumers to pay for WSS services.

The intersection of these issues is the appropriate level of cost recovery to allow the provider to meet consumer expectations and needs:

- In developing countries, the majority of potential customers may be poor—and connecting the poor may actually be critical to the revenue stream.
- Improved financial management and efficiency of the providers free up resources to expand coverage.
- There should be increased recognition that the poor can and will pay for safe and accessible water—and that they pay a high price already.
- The poor require tailored approaches to services, pricing, billing, and connection in order to make the services affordable.
- Pricing schemes have to balance affordability, cost recovery, demand management, access, and adequate usage.
PRICES OF DIFFERENT ACCESS OPTIONS

Source: UNDP 2006
COST RECOVERY IN UTILITIES

<table>
<thead>
<tr>
<th>Country income level</th>
<th>% of utilities in sample where average residential tariff is:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Too low to cover basic O&amp;M</td>
<td>Covers O&amp;M and partial capital</td>
</tr>
<tr>
<td>High income countries</td>
<td>8%</td>
<td>50%</td>
</tr>
<tr>
<td>Upper middle income countries</td>
<td>39%</td>
<td>39%</td>
</tr>
<tr>
<td>Low middle income countries</td>
<td>37%</td>
<td>22%</td>
</tr>
<tr>
<td>Low income countries</td>
<td>89%</td>
<td>3%</td>
</tr>
</tbody>
</table>

FINANCIAL AND COMMERCIAL SOLUTIONS

• Educate the public on the true cost of producing and transporting safe water.
• Provide clear and realistic targets for cost recovery, both from customer revenue and as a platform to attract investment.
• Seek a variety of financial sources and timelines for transitions from one source to another.
• Reform public utilities to absorb and effectively use increased funding flows.
KEY QUESTIONS IN FORMULATION OF PRO-POOR STRATEGIES

• Are connection charges affordable?
  – If there is a “social connection” policy in place, and do the criteria allow the poorest to benefit?
  – Are there any other charges (such as meter rental) which pad the connection cost artificially?
KEY QUESTIONS IN FORMULATION OF PRO-POOR STRATEGIES

• Do tariff setting principles emphasize pro-poor considerations?
  – Do they define concepts such as “equity” or cost recovery sufficiently clearly?
• Do tariff structures target subsidies to poor consumers?
  – What is the size of the first block?
• What is the tariff for standpipes or bulk selling?

“Equity”? Cost recovery?
Subsidies to poor? Standpipes/bulk setting?
WSS for The Poor

Tariff Setting Principles
KEY QUESTIONS IN FORMULATION OF PRO-POOR STRATEGIES

- Are subsidies properly targeted and transparent?
KEY QUESTIONS IN FORMULATION OF PRO-POOR STRATEGIES

• Are billing and collection procedures appropriate to low-income consumers?

*Photo: Pre-pay water meter, public_citizen.com*
PROVIDING WATER AND SANITATION SERVICES TO THE POOR

SANITATION-SPECIFIC CHALLENGES

Photo: Vietnam, ARD, Inc.
SANITATION-SPECIFIC CHALLENGES

• 2.6 billion people lack access to improved sanitation - two and a half times the deficit for access to clean water. To reach the MDG goal for sanitation, 120 million more people would need access to improved sanitation each year between now and 2015. This would still leave 1.8 billion people without access.
• Nearly 1.4 billion people without access to sanitation live on less than $2 a day.
• Improved sanitation options progress from pit latrines to improved pit latrines to pour-flush latrines to septic tank latrines. In high-density urban areas, a sewerage system is ideal. However, when the sewerage network is limited and the unserved population large, the capital costs can be prohibitive.
• Continued reliance on latrines and septic tanks cause different sanitation problems.
• The benefits to addressing the challenge are huge in terms of health alone....
SANITATION-SPECIFIC CHALLENGES

Climbing the sanitation ladder has financial
As well as health implications

Human Development Report, UN, 2006
Like water, sanitation has to be on the national policy agenda. Even when progress has been made in water access, there may be a lag in attention to sanitation.

Unlike water, responsibility for sanitation is often fragmented among different institutions at national, municipal, and community levels.

At the same time, local participation is critical to success in sanitation improvements.

People tend to attach a higher priority to water than to sanitation as a more immediate need. There should be increased education and advocacy on sanitation options and the need for community involvement.
SANITATION-SPECIFIC SOLUTIONS

- To help poor households meet the financing requirements of improved sanitation, arrangements are needed that provide subsidies or allow payments to be spread over time through microcredit.
- Affordable and appropriate technologies need to be adopted.
- Municipalities often have a key role and need to feel empowered and capable of addressing sanitation issues.
- Partnerships with SSPs can be beneficial in the sanitation sector.
The Problem:
In Kano, Nigeria, (population 1.7 million) there are poor sanitation conditions caused primarily by overcrowding, leaving little room for household toilets or communal latrines.

The Solution:
A partnership between the municipality, private SSPs, State Environmental Planning and Protection Agency, and private financial institutions.

The Result:
New sanitation facilities fill the gap.
USEFUL RESOURCES

- [http://web.mit.edu/urbanupgrading/waterandsanitation/home.html](http://web.mit.edu/urbanupgrading/waterandsanitation/home.html). Web site prepared for the Water Utility Partnership as part of a project to strengthen the capacity of water utilities to deliver WSS to Low Income Urban Communities.