

# Delivering Water Beyond the Pipes to Unconnected Customers

## HIGHLIGHTS

- Community-based model provides poor urban dwellers with access to clean, safe, and cheaper water
- Pooling users reduces transaction costs for the utilities and creates greater accountability.
- Community involvement and voice ensures better maintenance of infrastructure and less water loss/theft.



## Development Challenge

More than one billion people live in urban slums, where millions lack access to safe water and sanitation. The implications for development are vast. According to the US Center for Disease Control, diarrhea (caused largely by waterborne pathogens) kills more than 2,000 children a day—more than AIDS, malaria, and measles combined. Lack of clean water and sanitation also affects people's livelihoods, security, and quality of life. Building urban water systems could solve the problem, but the infrastructure needed is costly and often fails to affect people at the bottom of the pyramid, who are too poor to afford connections or live in areas where the system does not reach. Smaller-scale off-grid solutions thus hold promise.

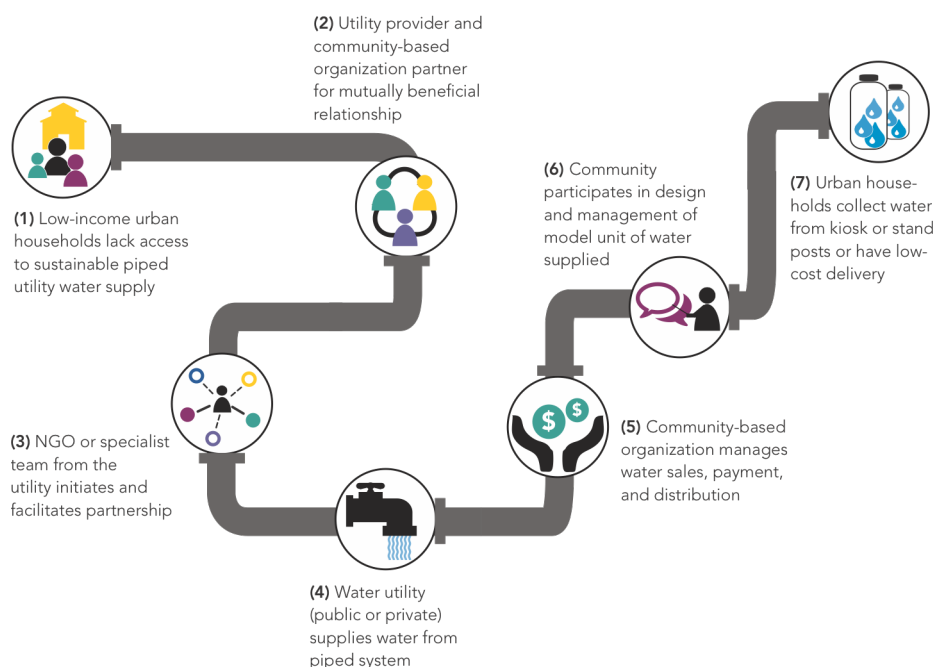
## Business Model

Off-grid systems represent a low-cost, sustainable solution that is based on establishing a mutually beneficial relationship between a utility and the community. A Community Based Organization (CBO) that represents the community is established as a legal entity. It contracts with the utility to provide water from the piped network to various distribution points, which it pays for in a single payment. The CBO then resells the water to end-users, from standposts and kiosks. The kiosks can be owned by the local government, the CBO, or the utility itself. Customers usually bring their own water containers, paying the kiosk attendant for water they take. Alternatively, the utility may simply set up a metered connection close to the community and leave it to the CBO to decide how to deliver water to households.

Setting up and implementing the model involves three sets of costs: (i) costs of connecting to the piped network are usually subsidized by an NGO or donor and gradually recovered through fees charged to end-users, (ii) costs of setting up the CBO and establishing relations among stakeholders are often borne by NGOs or development agencies, (iii) costs of distributing water to end-users are usually paid by CBO/end-user.

End-users pay fees based on the amount of water they use. The model is financially viable for the utility, because it already has the piped network and the costs of connecting to it are usually subsidized by an NGO or donor. The CBO covers its costs by charging more for the water than it pays. For example, the Ghana Water Company Ltd. charges a community management committee \$0.30 per cubic meter; water vendors who sell the water on behalf of the committee charge \$0.50 per cubic meter.

## Features of the Off-Grid Model



## Implementation: Delivering Value to the Poor

### Awareness

Community involvement is key to raising awareness about the provision of potable water and its health benefits. Local governments, educational institutions, and the media often work with CBOs in conducting information and awareness campaigns.

### Acceptance

For the model to work, the community has to accept that it is reasonable to pay for safe water and that the price is fair. Involvement of the community in the design and management of water distribution ensures high levels of acceptance and a sense of community ownership, which often reduces theft and vandalism of infrastructure.

### Accessibility

The model addresses a number of constraints that would otherwise prevent a water utility from making water available to low-income households, including: many poor customers are not able or willing to pay for individual household connections, or the transient nature of the population means that they cannot be billed for water; informal nature of housing may make the cost of a household connection very high or not allowed by the authorities; low trust between a utility and a community because of nontransparent pricing; the perception that prices are unfair; poor maintenance of infrastructure, which leads to high water losses, raising costs; vandalism of infrastructure; and theft of water (Water Aid 2013).

### Affordability

Water sold through the hybrid system is more affordable than other sources of clean water, such as bottled or bagged water. The pooling of users also reduces the transactions costs for the utilities, particularly for payments.

Connecting urban neighborhoods to existing water infrastructure requires multi-stakeholder coordination. The model can be initiated by a utility, an NGO, donor, or aid agency. Setting up the model often requires permission from the relevant government departments. Different stakeholders have different roles and responsibilities. The utility installs and maintains the connection mechanism and supplies clean water to the community. The CBO ensures that all local interests are served equitably and at the lowest possible cost. It receives support from the utility, and may access the utility's technical skills and resources not available within the community.

CBOs distribute water to end-users in a number of ways. Some hire their own staff, others delegate sales to local microentrepreneurs. In some countries, including India and Kenya, water is being distributed by "water ATMs". The water utility, or relevant government regulator monitors the performance of the CBO.

## Results and Effectiveness

**Scale and Reach:** The model is reaching thousands of people. In Antananarivo, Madagascar, 500 kiosks are providing access to safe water to 700,000 people, including some of the poorest people in the city's slums.

**Improving Outcomes:** Improvements in health outcomes have not been systematically measured, but the gains are large given the serious consequences of drinking unclean water. Following their success selling water, some CBOs have taken on additional responsibilities, operating community laundries and collecting solid waste, for example. The success of the model has also resulted in greater participation by communities in local government planning processes.

A sustainability survey of water supply in Kotei, Ghana indicated that the community management committee was covering its costs and had developed a trusted relationship with local consumers. In Lilongwe, Malawi, the community paid back half of its arrears to the water board in one year while enhancing its water supply (Water Aid 2013). In one year of operation, 2,000 previously nonpaying customers in Dhaka paid for water, generating an additional \$52,000 in revenues. The main costs of expanding access to clean water through this model are the upfront costs of stakeholder consultations and facilitation efforts. As more end-users are reached, the per user costs decline.