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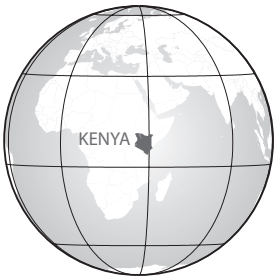

Using the Water Kiosk to Increase Access to Water for the Urban Poor in Kenya

german cooperation
DEUTSCHE ZUSAMMENARBEIT

PROJECT DATA

PARTNER ORGANIZATION:
German Development Cooperation: GIZ/BMZ

ORGANIZATION TYPE:
Government

DELIVERY CHALLENGES:
Capacity and skills; Ownership and stakeholder commitment

DEVELOPMENT CHALLENGE:
Access to water and sanitation

SECTOR:
Water and sanitation

COUNTRY:
Kenya

REGION:
Africa

PROJECT DURATION:
2006–present

PROJECT TOTAL COST:
€25 million

ORGANIZATION COMMITMENT
€6 million

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TABLE OF CONTENTS

In Brief

- **Development Problem:** Kenya needed to expand access to water and sanitation services to urban low-income areas consistently and efficiently on a countrywide scale.
- **Program Solution:** Kenya established a basket-funding mechanism through the Water Services Trust Fund to encourage investment by utilities in last-mile infrastructure using low-cost technologies, including water kiosks, yard taps, and sanitation facilities.
- **Program Results:** Pilot programs for water kiosks showed that shared facilities were accepted and welcomed by consumers. After scaling up, nearly 1.8 million people have gained first-time access to safe and affordable water services, and up to 429,000 people are scheduled to receive sanitation services by the end of 2016.

Executive Summary

Until recently, an estimated 8 million people living in Kenya's fast-growing urban low-income areas were not served by the country's water utilities. With the tacit acceptance of political decision makers, informal water provision, expensive and often unsafe, had become their only service option. Too often, plastic bags doubled

In 2013, GIZ commissioned the Ramboell Consulting Group to conduct an independent corporate strategic evaluation on scaling up in a representative range of GIZ's water portfolio. The GIZ Water Sector Reform Programme in Kenya was one of seven programs identified as the most effective in terms of their contributions to improved delivery of water and sanitation services at scale to poor citizens. Therefore Kenya was chosen as a case study for the Science of Delivery Partnership.

The case study is based on desk and field studies conducted by a team of external consultants in November 2013. The resulting report focused on the technical content of the case. As a second step, the case study was further developed and its conclusions verified through an in-house mission to Kenya by the GIZ Water Section in August 2014, which focused on management aspects of the case study.

The authors acknowledge feedback received on earlier drafts of this case study from the members of the editorial team Dr. Jörg Freiberg (GIZ), Stephanie Folda (GIZ), Oliver Haas (World Bank), and Michael Rosenauer (GIZ).

as toilets. Inspired by state-of-the-art sector reform and the scaling-up approach taken in Zambia, Kenya began to overhaul its own water sector: pro-poor commitments were included in a new water policy and legislation, including the formalization of service delivery in low-income areas and socially responsible commercialization of utilities. Significant improvements have been achieved using unconventional solutions. The case study shows how Kenya is moving toward its goal of universal service, and the successes as well as the difficulties that were encountered along the way.

A major innovation of the reform has been the establishment of a pro-poor basket-funding mechanism, the Water Services Trust Fund (WSTF or the Trust Fund). The WSTF, and more specifically its urban financing window, has been instrumental in reaching out to the allegedly difficult-to-serve urban poor: nearly 1.8 million people have gained first-time access to safe and affordable water services through water kiosks and yard taps since 2008. Scaling up sanitation is accelerating, with about 120,000 people served over the last five years and that number set to rise to 429,000 by the end of 2016.

The WSTF is responsible for channeling investment funding to those utilities showing promise and commitment to serving all their customers, but it is far more than just a financial intermediary. Supported by a team of integrated, long-term Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) advisors, it promotes low-cost technologies, provides comprehensive support to the implementing utilities, maintains customized monitoring systems, and facilitates continuous institutional learning. For those development partners (DPs) who have committed funds, it also functions as a risk manager in an environment rife with corruption. Overall, the Trust Fund has proven to be an effective and efficient financing mechanism to increase access for the poor to formalized service provision with limited funds. The average cost for the last-mile infrastructure for water supply stands at €14 per beneficiary and comparable costs for sanitation have fallen to €24 per beneficiary, both representing good value for money.

The reform has prompted a shift from an almost exclusive focus on household connections as the only acceptable service option to a wider recognition of the need for locally adapted, low-cost technology mixes. With support from the German Development Cooperation, the WSTF was able to pilot water kiosks that were professionally managed by utilities. The feasibility, acceptance, and sustainability of low-cost technologies to scale up services could finally be proven in the Kenyan context. Overwhelmingly positive feedback meant they were ready to be rolled out across the country. Some DPs also realized that the conventional, large-scale project approach, with its limited implementation mechanisms, was partially responsible for preventing the scaling up of water and sanitation infrastructure in urban low-income areas. The WSTF not only funds the small and medium-size investments needed to reach the last mile of service provision, it also ensures their long-term financial, technical, and social sustainability.

The WSTF allocates investments using a competitive funding procedure. This procedure provides an incentive for utilities to submit sound investment proposals, execute funding in a timely manner, and ensure the construction of infrastructure in compliance with the new national standards. The latter are derived from toolkits that have been assembled by the WSTF to share lessons from the field, such as the tested technical designs and proven approaches for water kiosk management. Toolkits provide simple, hands-on guidance for the implementing utilities (as well as Trust Fund staff, contractors, and communities) and are updated to incorporate new insights.

With a team of long-term advisors, WSTF has been able to develop into a professional and trusted organization. GIZ's advisory services emphasized coaching, on-the-job training, and strong partnerships, rather than just technical support. Advisors have helped foster positive relationships between key stakeholders (see annex A), for instance, instigating a successful South-South Knowledge Exchange and the well-received national strategic dialogues. As an outcome of this cooperation process, proponents of the scaling-up process developed a shared vision of their organizations as professional entities committed to delivering pro-poor services. The close collaboration of the financial and technical sectors—as provided by GIZ and the Trust Fund's financing partners in Kenya—was critical to combining the funding of last-mile investments with the concept and capacity development activities that are necessary to scale up services.

Introduction

When Ruth Wanjiru arrived in Nairobi, the Kenyan capital, in 1983, she chose to live in Mathare, which was cheap and fairly close to the city center. As Mathare grew, it became more difficult to buy clean water, and there were not enough toilets for everyone. The settlement

had become one of about 2,000 low-income urban areas in Kenya,[1] where tens of thousands of tiny houses are crammed into tight spaces. "Sometimes houses burn in Mathare because of lack of water," Ruth says; this is how her ten children lost their father. Anna Muthoni, who grew up in Mathare, remembers that "getting water was a struggle," and that "when there is no water, you have to walk many kilometers and wait in long queues." Both agree that water purchased from private sources is expensive, costing up to K Sh 20 (€0.2) for a 20-liter jerry can. Anna also worries about diseases spreading through dirty toilets (Ojwang et al. 2014; GIZ 2014).

In 2006, officials turned to neighboring countries for inspiration to solve this crisis. The man responsible for implementing the ambitious Kenyan water sector reforms, Engineer Ombogo, joined a delegation to Burkina Faso and Zambia. The visitors were impressed with the unconventional solutions used there to reach out to the urban poor. Within a few months of their return, the Kenyan Water Services Trust Fund (WSTF) added shared facilities and low-cost technologies to its portfolio: "Scaling up," the process required to deliver sustainable access[2] at scale in an acceptable timeframe with a limited amount of funding, had arrived in Kenya, where 8 million people like Ruth and Anna were waiting. Since the first pilot program in 2006, almost 600 water kiosks and more than 500 yard taps have sprung up across the country, and secondary infrastructure has been added to connect low-income areas to existing primary infrastructure, providing safe drinking water to nearly 1.8 million people previously deemed difficult to serve. Now Anna walks only a few meters to a water kiosk, where she can fill her jerry can for just K Sh 2 (€0.02). With increased access to drinking water off to a great start, the WSTF is now beginning to tackle the ubiquitous "flying toilets" (the plastic bags often used by the urban poor as toilets and flung into the nearest ditch or worse) by funding investments in last-mile sanitation service provision[3] in low-income urban settlements. In Kenya, scaling up is in full swing.

Development Challenge: Ensuring Access to Water and Sanitation

"Water is life, sanitation is dignity"—the slogan sums up the development challenge faced by Kenya, which by the early 2000s held the dubious fame of being home to the biggest slum in Africa. The consequences of inadequate access to water and sanitation are particularly devastating in the urban context where high population density leads to the rapid spread of disease. In addition, in urban areas public and private water sources tend to be heavily contaminated and are often unsuitable for drinking.

Kenya does not stand alone in facing this problem or its scale. In most Sub-Saharan African countries 30 to 50 percent of the urban population have no access to safe water or adequate sanitation.[4] Access to water through household connections in urban areas in Sub-Saharan Africa fell from 42 percent to 34 percent from 1990 to 2012, while access to other improved (but often unsafe) sources increased from 41 percent to 51 percent during the same period (WHO/UNICEF 2014). The estimated 150 to 250 million underserved urban people often live in low-income and sometimes unplanned areas, where poor living conditions exacerbate the consequences of inadequate access; they are far more likely to suffer from waterborne diseases, higher infant mortality, income loss, and lower productivity. Across the region, strong population growth and uncontrolled urbanization are accelerating the service gap, as governments are overburdened with attempts to expand public services, with a devastating impact on living conditions.

Despite this, most rural-to-urban migrants continue to settle in unplanned low-income areas, adding to the high population density and living with inadequate public services such as water supply and sanitation (WSS). Formerly planned areas frequently turn into settlements with an unplanned character as infrastructure development is outpaced by the high influx of new residents. In Kenya, a country of 45 million with an estimated growth rate of 2.7 percent per year,

1 Demographic data about Kenya can be found at the MajiData website, www.majidata.go.ke.

2 Access is the ability of consumers to use infrastructure (a water outlet or a toilet facility) that complies with the standards defined by the Human Right to Water and Sanitation and that is sustainably maintained and operated. The Human Right to Water and Sanitation was explicitly recognized by the United Nations in 2010. It sets minimum standards regarding the availability, accessibility, affordability, quality, and acceptability of drinking water and sanitation services.

3 Last-mile sanitation service provision refers to the connection of low-income area households to the service delivery chain. It consists of (1) secondary infrastructure (such as small-scale water storage or sludge management facilities) connecting a low-income area to existing large-scale, primary infrastructure and (2) the customer points of access (such as water kiosks, yard taps, on-plot urine diverting dry toilets [UDDTs] or ventilated improved pit [VIP] latrines, and public sanitation facilities).

4 Statistics on the number of unserved people depend on which definitions are used to measure access. As some of the access criteria of the Human Right to Water and Sanitation, such as water quality, are neither considered by global monitoring programs nor verified on the ground, global data are misleading and draw an overly optimistic picture of the availability and functionality of water and sanitation services.

a quarter of the total population resided in urban areas in 2013. Urban low-income areas (LIAs) in the 276 cities and towns in Kenya comprise a population of more than eight million people and are experiencing an above-average growth rate of 6 percent (GIZ 2013).[5]

Delivery Challenge: Providing WSS Using Low-Cost Technology While Developing the Formal Sector

Limited application of low-cost technologies by water utilities and tacit acceptance of informal service delivery by political decision makers, development partners (DPs), and utilities—exacerbated by trends beyond the influence of the water sector (notably uncontrolled urbanization and population growth)—conspire to maintain the status quo in urban LIAs. The delivery challenges consist of providing immediate access to WSS through the use of low-cost technology and the long-term development of a formal WSS sector.

Insufficient Pro-Poor Orientation and Accountability of Public Institutions and Utilities

Poor governance on the national and local levels, powerful vested interests, and legal uncertainty drove the "informalization" of urban LIAs. There were no clearly defined responsibilities or organizational structures in place to secure the provision of WSS. Public authorities and utilities lacked enforcement mechanisms and the incentive to expand services, and residents had no adequate means of expressing their needs and concerns.

Basic information on population and service coverage simply did not exist for these areas. Moreover, critical information to guide decision making on investment priorities, value for money of investments, and technology choice was unavailable. At the same time that DPs, governments, and utilities underestimated the willingness of potential customers to pay for services and to use shared facilities, the costs of connecting to formal networked services were prohibitively high. Prevailing misperceptions about the willingness to pay meant that opportunities to increase revenue of the water utilities were not exhausted.

First-Mile Investments Failed to Reach a Significant Share of the Urban Poor

For decades the investment projects of DPs and sector institutions focused on the "first mile" of infrastructure development, that is, infrastructure for water abstraction and production, raw water treatment, storage, primary networks for drinking water and sewerage, and central wastewater treatment facilities. However, these cost-intensive construction measures frequently fail to provide WSS to previously unserved people. The overall investments in the sector have been insufficient to meet the growing demand for decades, and the exclusive focus on household connections exacerbated this situation.

The physical and socioeconomic conditions typically found in low-income areas (such as high resident turnover, topography, and high housing density) as well as limited financial resources can prevent the construction of conventional water supply networks. Providing all citizens access to a centralized sewerage network will be an unrealistic proposition for decades to come. In brief, providing WSS to currently unserved urban areas calls for transitional, shared water and sanitation facilities, and appropriate low-cost solutions—a fact assiduously ignored by government and DPs.

In the past, last-mile infrastructure investments were rarely more than an accompaniment to larger investment projects. The implementation of large-scale infrastructure development did not account for the technical, social, and operational complexity of the last mile. Disbursement pressure prevented the necessary, but time-consuming, participatory activities required for design and planning of last-mile infrastructure. When project management was separated from utility and community, the opportunity for crucial capacity building that would secure the sustainability of the last-mile investment was lost. Standards for the design and operation of adapted infrastructure solutions and concepts for social marketing and business models were not on the agenda of any water utility.

Acceptance of Informal WSS Service Delivery in Urban LIAs

When formal services are largely inaccessible in low-income areas, residents rely on informal service providers (ISPs), including NGOs, to meet minimum water needs. The Ministry of Water and Irrigation in Kenya (the Ministry), much like in most of Sub-Saharan African countries, accepted the ISPs' dominant role, tacitly

5 Low-income areas are settlements with poorly constructed houses or shelters where more than half of the residents live near or below the poverty line. Many grow into high population density areas within or around towns. They are often unplanned or were initially planned but degraded into an unplanned state.

perpetuating the lack of pro-poor orientation within utilities. The large numbers of ISPs cannot be regulated or monitored effectively. ISPs generally supply raw water that does not meet World Health Organization standards for microbiological and chemical quality. Customers are exposed to public health risks because minimum standards for service quality and for the human right to water and sanitation are not enforceable. Small private networks that supply only a couple of hundred connections (when they exist at all) cannot realize economies of scale and therefore have to charge more for the services they supply. Low-income customers regularly pay 10 to 20 times more for water of inferior quality, compared with regular users of formal utility services. In Nairobi, users of informal water points were paying on average between 8 and 20 times more per cubic meter of water than the "lifeline rate" offered to their more affluent neighbors with standard, private in-house connections, rising to a factor of nearer 100 during times of scarcity (Gerlach 2008).

This case study addresses four delivery questions:

- How was the emphasis in the Kenyan water sector shifted from an almost exclusive focus on household connections and toward technology mixes that included low-cost options?
- How did Kenyan institutions learn from the application of low-cost technologies and apply that knowledge to technical, social, and managerial issues?
- How did the Kenyan government and water utilities technically and financially roll out and sustainably operate low-cost technologies on a countrywide scale?
- How did the technical and financial components of assistance work together to support the service shift and the scaling-up process in Kenya?

Contextual Conditions

In Kenya, the shift to low-cost technologies to deliver urban water and sanitation services at scale has been part of far-reaching water sector reform that began in 2004. Annex B provides an overview of actions relevant to the case study.

Water Policy in Kenya

Past water policies in Kenya and the National Vision 2030 stipulated the provision of universal WSS coverage as important policy goals. In 2002, a new Water Act introduced an explicitly pro-poor focus to the Kenyan water sector. The new legislation provided a framework for reform implementation and addressed the institutional weakness that had contributed to the consistent underperformance of the sector—policy development was separated from regulatory functions and service delivery. As part of "whole of government" decentralization reforms, the responsibility for infrastructure development and WSS services was transferred to local government and regional Water Services Boards (WSBs). Actual service delivery was delegated to financially and managerially autonomous (i.e., ring-fenced) commercial public utilities. The utilities would operate according to economic objectives (aimed at cost recovery) and social objectives in line with the pro-poor sector policy. Their activities would be overseen by the Water Services Regulatory Board (WASREB), an autonomous body established to license WSBs (asset holders and developers) and regulate utilities.[6] The new policy and legal framework further provided for the development of the WSTF, an institution dedicated to promoting investment in low-cost technologies and building operational capacity within utilities to manage pro-poor WSS services. Since 2010 adequate water supply and sanitation have been a constitutional right of all Kenyan citizens.

Cooperation of Development Partners in Kenyan Water Reform

Kenyan water sector reform has been heavily supported by DPs. Prior to 2002, German Development Cooperation had been assisting the Ministry by providing technical experts on a short-term basis to revise water legislation. Having gained experience in the Zambian water sector, these experts brought important lessons into the law-making process. These included the separation of sector functions and the establishment of the pro-poor WSTF. In the wake of the Water Act of 2002, the Ministry requested that Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) deliver policy advice to major decision makers in the sector (such as directors and the permanent secretary of the Ministry) and support the organizational development of the WSTF, WASREB, and various water and sanitation utilities on a long-term basis.

6 Since the constitutional reform in 2010, counties have gradually taken over the responsibilities of local government and the transfer of assets to the counties is in process.

Since 2003, the GIZ Water Sector Reform Programme has been providing technical advisory services and small financial contributions (for example, for water kiosk pilot programs) to its partner institutions. Four seconded long-term international and ten long-term national experts work in key sector institutions. They provide hands-on support to staff, primarily through coaching and on-the-job training, to encourage sectoral, organizational, and individual change. The current (fourth) phase of the program runs until 2016. Apart from GIZ, the German Development Bank (KfW) provides financial assistance and accompanying consultancy services to infrastructure works including primary networks, treatment facilities, and sewerage treatment plants in Kenyan secondary towns and now increasingly to the satellite towns of Nairobi. KfW also made financial commitments to the WSTF.

The main DPs are the World Bank, the French Development Agency, African Development Bank, and German Development Cooperation, which have provided funds of approximately €180 million annually since 2008 (and plan to continue to do so until 2020) for the urban water sector (such as the cities of Mombasa and Nairobi). Technical assistance by other DPs is mostly limited to consultancy services for measures linked to infrastructure investments. The overall investments of DPs in the urban water and sanitation subsector channeled through the WSBs have risen from €4.5 million in 2005–06 to more than €82 million in 2013–14, illustrating the increasing confidence in the sector reform and scaling-up process. In 2013–14, 96 percent of the total investments in the urban water and sanitation sector were made through overseas development assistance.

Water Reform in Zambia

Another important contextual condition was the comprehensive reform of the Zambian water and sanitation sector, which was perceived by other governments—Kenya among them—as state of the art and inspired their own reform approaches.

WSS reform in Zambia was initiated by the National Water Policy of 1994, which led to a new Water Supply and Sanitation Act in 1997. Zambia proceeded to establish a financing basket for urban WSS, the Devolution Trust Fund (DTF), to assist utilities in extending services to the population in urban LIAs. The DTF successfully supported the implementation of standardized—but locally adapted—low-cost technology to match the needs of low-income customers; notably, the use of water kiosks was adjusted to local conditions and integrated into the formalized service provision. Besides financing physical investments, the DTF has been supporting the implementation of sustainable kiosk management systems.

The DTF carried out a baseline study in all settlements of the urban poor, which led to the downward revision of water coverage figures in urban settings from 89 percent (as reported by monitoring carried out in accordance with the United Nations Millennium Development Goals) to 47 percent. The baseline study provided evidence that about three million people living in low-income areas had no access to safe water or proper sanitation in 2005. After a preliminary phase of testing, a competitive call-for-proposals procedure, and new low-cost technologies (including water kiosks), the DTF embarked on a program to scale up financing to all utilities in Zambia. Between 2006 and 2013, the DTF was able to finance water kiosks that serve more than 900,000 people, at a total cost of €15 million. DTF also assisted utilities in extending on-site sanitation to more than 15,000 people (GTZ 2008; NWASCO 2005).

Tracing the Implementation Process

Chronological Sequence of Actions Taken to Address Delivery Challenges

This case study analyzes how Kenya reinvented its water and sanitation sector to extend services to the country's urban LIAs. Figure 1 offers an overview of the ongoing scaling-up process.

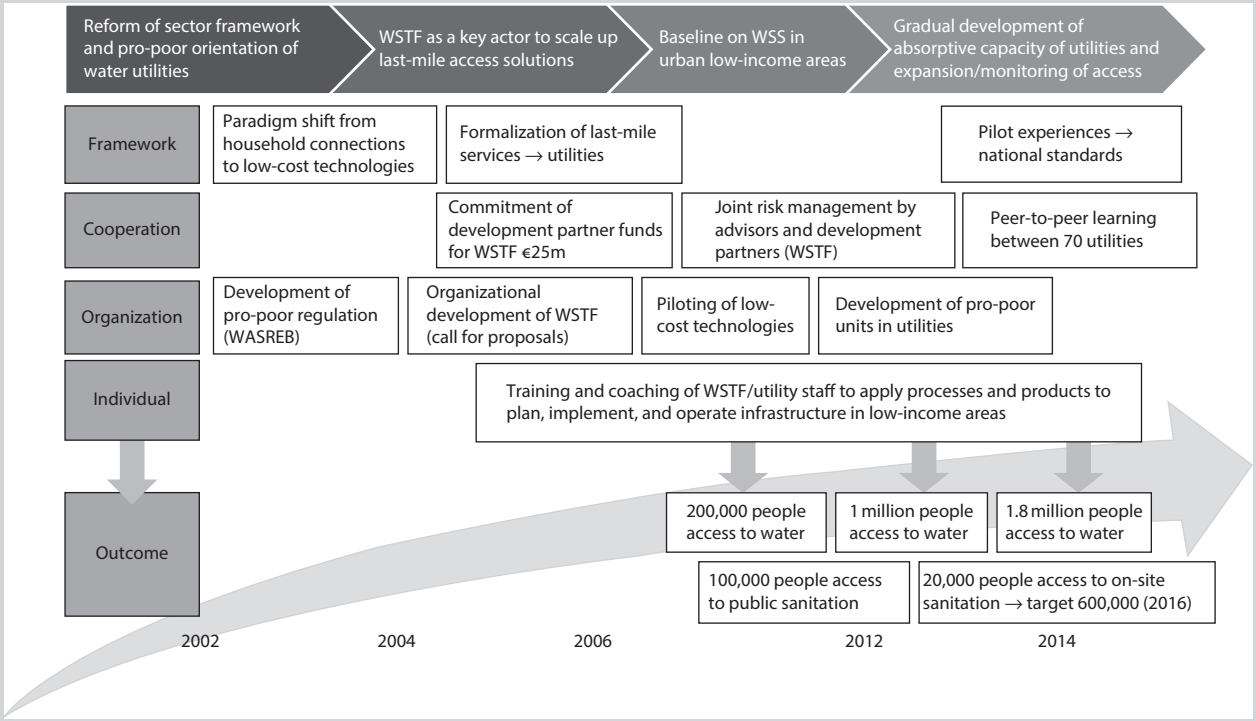
Implementing the Pro-Poor Delivery of Urban Water Supply and Sanitation

Policy and legislation put a priority on pro-poor service delivery, but utilities did not have the requisite regulatory incentives, technical know-how, or financial resources to expand water services to urban LIAs. Pro-poor regulatory tools helped create a pro-poor orientation, and the WSTF provided a scaling-up mechanism.

What Provided the Impetus for Kenyan Utilities to Acquire a Pro-Poor Orientation?

A major bottleneck prior to 2002 had been the lack of clearly defined obligations, standards, and accountability

Figure 1 Chronological Sequence and Levels of Scaling Up Water Reform in Kenya



Note: DP = Development Partner; WASREB = Water Services Regulatory Board; WSTF = Water Services Trust Fund.

mechanisms for urban water utilities. In addition, utilities were free to define their own service areas, which in practice often limited them to the area reached by their own network. The result was that many underserved low-income areas, even ones in the middle of towns (such as Kibera in Nairobi), were excluded when coverage was calculated. Utility managers showed little interest in low-income areas and therefore never assigned clear internal responsibilities or developed adapted strategies for expanding water and sanitation infrastructure there. ISPs had become the default—and accepted—service delivery mechanism in LIAs.

Following on from the pro-poor commitment contained in the Policy for Water Resources Management and Water Supply and Sanitation and the 2002 Water Act, a Pro-poor Implementation Plan for Water and Sanitation (PPIP) was launched in 2007 to put policy into action. The PPIP was designed to help sector stakeholders understand the provisions of the 2007 National Water and Sanitation Strategy that required a higher level of WSS coverage. Both stipulated the formalization of service delivery in LIAs and socially responsible commercialization of water utilities. The latter would now need to realign their priorities and, under the supervision of the newly established regulator WASREB, begin considering the residents of urban LIAs as potential regular customers, albeit with special circumstances requiring a departure from business as usual.

Implementing the Pro-Poor Approach to Water Supply

German Development Cooperation facilitated study tours to Zambia to introduce leading Kenyan decision makers—notably WASREB officials and Ministry directors—to socially responsible commercialization and autonomous regulation. As Patrick Mwangi, a Senior Water and Sanitation Specialist at the World Bank, stated: "Sector regulation is only justified if it can contribute to overcome sector challenges. But sector regulation cannot do the job alone; it needs the fertile ground of service provision with the potential for increasing professionalism and autonomy among service providers." The long-term presence of GIZ in other countries, especially Zambia and Burkina Faso, provided a critical entry point for identifying and connecting relevant decision makers and stakeholders. Later on, the Kenyans' advice would be sought by their counterparts in South

Sudan and Uganda, reinforcing the conviction of Kenyan decision makers that they were pursuing the right path.

GIZ supported Engineer Ombogo and the reform unit at the Ministry that he headed in the preparation of presentations and policy papers concerning the implementation of reforms and their anticipated outcomes, which he presented to CEOs and directors of the Ministry, WASREB, WSTF, and WSBs. Increasingly, NGOs and utilities also participated in these discussions, and since 2006, strategic dialogues—coupled with the South-South-Exchange initiated and organized by GIZ—have become a regular discussion forum organized by the Ministry and facilitated by GIZ.

In contrast to many DPs, financing agencies, and NGOs, GIZ pursued no agenda other than that of sector reform and never attached any conditions to its assistance.[7] Thus, Engineer Ombogo and other champions perceived GIZ as an "honest broker" throughout the implementation of the reforms. The strategic dialogues helped the Ministry, WASREB, and later the WSTF develop their commitment to reform.

As a result of their discourse, the key reform stakeholders believed that extending the mandate of the more than 100 urban water utilities to include low-income areas had significant advantages. Utilities would realize economies of scale, could be held accountable through regulation, and could develop their management structures and technical capacity in order to deliver high-quality and affordable services. Providing WSS through utilities would avoid many of the shortcomings of informal service provision. Starting in 2006, WASREB redrew the services areas of utilities to include low-income areas and to consider water tariff options that would suit service provision in LIAs. The first steps to orient water utilities toward the poor and to make them fit for their role in scaling up had been taken.

The legal obligation of utilities to supply service to low-income areas raised several difficult questions, considering their past track record: Which unit within the utilities should be responsible for managing service in LIAs? How could pro-poor last-mile infrastructure be funded? How could utilities develop the know-how to operate in LIAs? Who could deliver the required support for this? How could WASREB encourage utilities to extend service into the LIAs and establish reliable monitoring systems to follow their progress? There were no easy answers, let alone a ready-made plan to get started.

Meeting the Challenge of Bridging the Urban Water Service Gap

One of the key innovations in the Water Act had been a pro-poor basket-funding mechanism, the WSTF, which resembles the DTF in Zambia. The use of basket-funding arrangements was supported by the international discussions on improving ownership, alignment, and harmonization of the delivery of overseas development assistance in the wake of the Paris Declaration on Aid Effectiveness. Two objectives had to be reached. First, projects had to be anchored within existing sector institutions in order to ensure capacity building and commitment to the program for sustainable development rather than implemented outside the national framework. Second, the projects should be implemented nationwide with common standards and funds disbursed according to merit.

Participating in the South-South Knowledge Exchange with their Zambian colleagues and seeing the impact of the DTF convinced the Kenyan Ministry and Engineer Ombogo that the WSTF could play a key role in enabling utilities to construct and operate last-mile infrastructure and low-cost technologies on a large scale to bridge the urban service gap. To this end, an urban financing window called the Urban Projects Concept (UPC) was set up within the WSTF in 2006, specifically to fund small and medium-size investments in urban LIAs.[8]

Making the WSTF Attractive to Financing Agencies

Because the Kenyan water sector relied heavily on overseas development assistance for infrastructure development, the government turned to the DPs for funding commitments. However, many DPs were skeptical whether the WSTF would make a difference and whether their funds would be efficiently spent. They feared the misuse and embezzlement of funds "given away" to a national institution. In addition, many DPs perceived the pro-poor focus of the WSTF as a constraint. In contrast to the traditional way of disbursing large sums for first-mile investments and contracting with consulting firms for implementation, the focus on

7 For example, financing agencies frequently advocated highly contentious public-private partnerships. NGOs often favored informal or small-scale community service provision, though some simply tried to work around a system they had little influence over.

8 Other financing windows invest in water resources management and rural water supply and sanitation. In the remainder of this case study, UPC and WSTF are used interchangeably.

last-mile infrastructure would require numerous small and medium-size investments. WSTF investments would require greater management input from financing and implementing agencies (in this case, utilities) to steer the investment measures in low-income areas successfully, and high flexibility and longer time frames for disbursing funding. This proposed financing mechanism for LIAs ran counter to the philosophy of many DPs and their preference for disbursing large tranches of funding within a fixed and limited time frame.

Based on its previous experience with German Development Cooperation, the Ministry requested GIZ to support the organizational development of the WSTF. Anxious to make the WSTF more attractive for financing agencies and development banks, the Ministry was tempted to extend its mandate to include first-mile investments. GIZ insisted, however, on retaining the focus on last-mile investments to ensure that smaller pro-poor investments received priority and attention. In addition, the discussions with the CEO of the DTF in Zambia confirmed that the pro-poor mandate had been critical to the success of the DTF. In order to preserve the initial concept of the WSTF, its CEO prepared funding proposals for various financing agencies. Supported by GIZ, they approached the KfW and the EU (and, at a later stage, the Bill and Melinda Gates Foundation [BMGF]), which showed some interest in the WSTF approach. They explained the advantages of the WSTF for pro-poor financing compared with the way investments had been implemented in the past.

Many DPs remained doubtful about basket funding for last-mile infrastructure because of risks linked to corruption and the anticipated slow pace of implementation. The DPs recognized, however, that if funding were pooled in a large generic basket fund without a specific pro-poor focus, attention would sooner or later be diverted to large investment projects at the expense of last-mile projects. The WSTF board, with support from GIZ, submitted a funding proposal to the EU and succeeded. After verifying the program's feasibility, German Development Cooperation through KfW also made a financial commitment. Having secured support for WSTF from these two important financing agencies, GIZ began the organizational development of the Trust Fund through a team of international and national experts, complemented by a KfW-funded financial consultant.

Launching the Urban Financing Window

As soon as the funding commitments from KfW and the EU were obtained, the board of trustees of WSTF was convened. The partners fully agreed on the need to "keep the organization lean and the number of staff limited" in order to keep the overhead costs low and maintain the confidence of the DPs in the efficiency of the WSTF. A panel supported by an independent consultant contracted by GIZ recruited permanent national management, technical, administrative, and financial staff for WSTF on a merit basis. To this day, the urban financing window of WSTF employs only six staff members.[9] The institutional setup of the urban financing window of WSTF, including its interlinkages to DPs, GIZ, and the utilities, is depicted in figure 2.

As a next step, the WSTF proposed pilot programs to test low-cost technologies. Installation of water kiosks and yard taps, which in Zambia and Burkina Faso had proven to be effective in reaching the urban poor, would provide the necessary first-hand evidence and experience on improving the delivery of safe drinking water to poor urban citizens in Kenya.

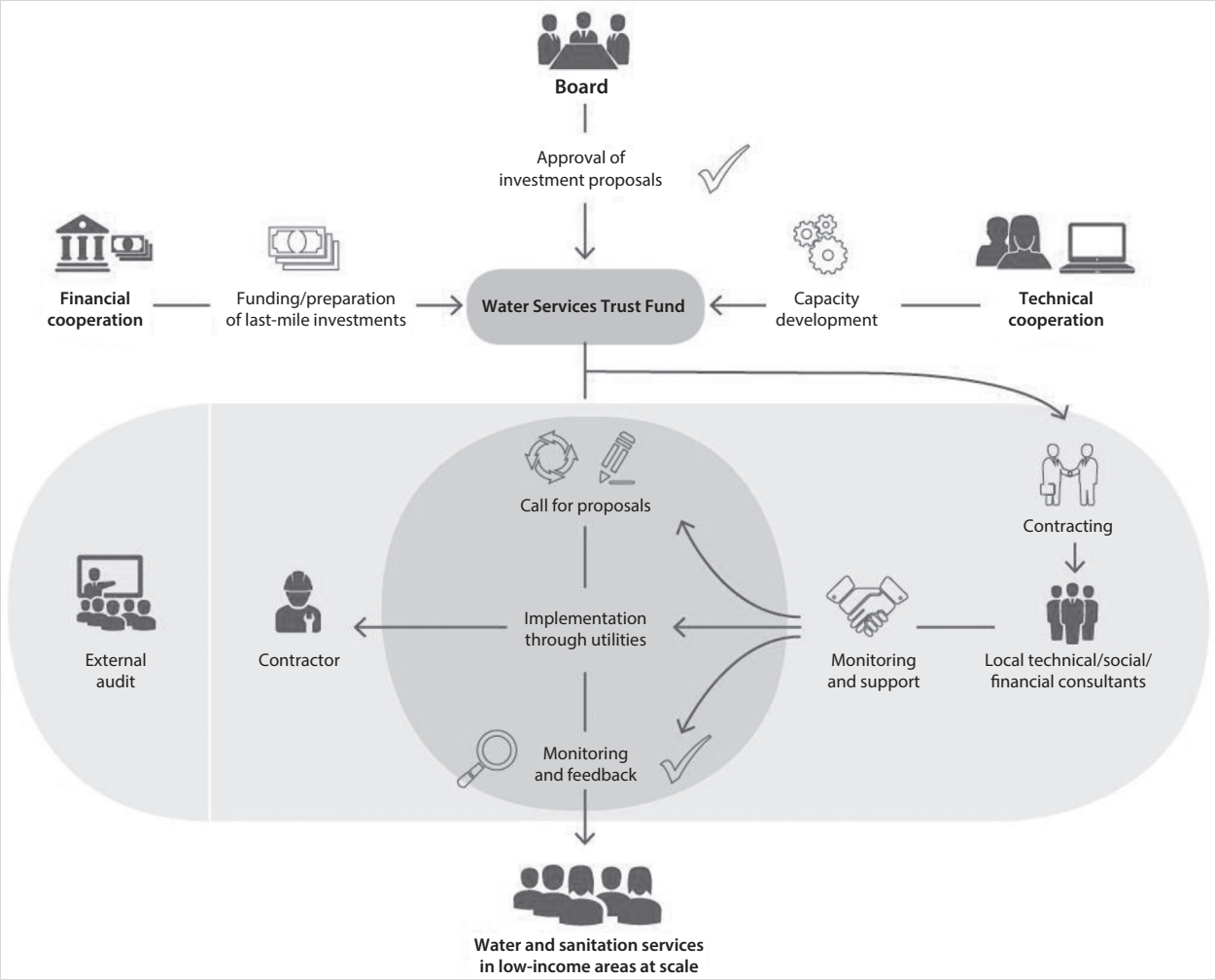
Tackling the Growing Demand for Drinking Water: Piloting of Water Kiosks at Scale

Prior Experience with Water Kiosks in Kenya

Prior to the reform, water kiosks had a negative connotation in Kenya. Before their visits to Burkina Faso and Zambia, even key champions of the reform, such as board members of the WASREB and directors at the Ministry like Mr. Gakubia and Mr. Ombogo, were not certain that water kiosks would be an appropriate technology and business model to supply drinking water in LIAs. Existing water kiosks in low-income areas in Kenya were poorly managed by informal service providers, mostly small-scale NGOs or private operators. Frequently, they were "hijacked" by local gangs or cartels, exploiting customers through exorbitant prices. The kiosks were generally unhygienic and not well maintained. There was no quality standard for the drinking water sold. Water kiosks were widely associated with informal service delivery, which was what the new policy and the WSTF were designed to overcome.

9 Overall, the WSTF employs 55 staff members, including those in its rural and water resources financing windows.

Figure 2 Institutional Setup of WSTF



Source: GIZ 2015.

Lingering doubts about the kiosk model—and shared facilities in general—were summed up by the chairman of the board of WASREB in 2006: "It is evident that water kiosks don't work in Kenya." The Ministry, WASREB, utilities, and WSTF wanted to see evidence and tangible examples of the contrary.

How Was the Water Kiosk Pilot Program Implemented?

In order to demonstrate the feasibility of the kiosk concept, the WSTF and GIZ team randomly selected three medium-size utilities for pilot testing. With GIZ financing, the utilities would test the construction materials, technical designs, management model, and social marketing tools—based on the kiosk models in Burkina Faso and Zambia—necessary to make a water kiosk work.

As a first step, the GIZ and WSTF team reviewed the kiosk system with utility management. Together they chose several pilot low-income areas for each utility, where one or two kiosks would be constructed and a kiosk operator would be recruited. Construction was tendered to local craftsmen, and GIZ, WSTF, and the utilities jointly monitored the construction and operation of the kiosks and how customers perceived them. The utility managers appointed dedicated staff to work on the pilot and to ensure the operation and maintenance of the kiosks.

Results of the Water Kiosk Pilot Program

In 2008, GIZ commissioned a survey of 400 users in the pilot low-income areas on the impact of the WSTF water kiosks (WSTF 2010). The results, which were presented by the utilities in a forum attended by many water utility representatives, were overwhelmingly positive: In Rongai, for instance, where a large majority of respondents had previously relied on untreated surface water sources, about 88 percent of the target group had shifted to the new water kiosks operated by the utility.[10] The respondents reported much better water quality, shorter waiting times, improved hygiene at home, and significantly reduced expenditures on drinking water.

All this had been achieved with an investment of about €12 per beneficiary. Demonstrated feasibility, high cost-effectiveness, and popular acceptance finally convinced Ministry officials, utility staff, and the directors of the WSTF and WASREB that shared facilities and low-cost technologies—such as the water kiosk—can and should play critical role in the process of scaling up WSS delivery in Kenya. With key sector champions on board, the WSTF management took up the kiosk as a standard product to be provided by all water utilities.

Making the Sector Fit for Scaling Up: Development of the WSTF into a Key Agent for Rolling Out the Water Kiosk System

It was not clear however, how WSTF could ensure consistent quality if the kiosk systems were constructed and operated by a multitude of utilities, contractors, and craftsmen across the country. WSTF had neither the required standards and tools of the kiosk system nor the technical capability to roll out the system on such a large scale even if they did. Most of the team members realized that the process of scaling up would be long and difficult. Patrick Onyango, a senior GIZ expert from Kenya, stated: "Although the idea of up-scaling should be part of every pilot measure there is still a long way to move from piloting to a fully-fledged and successful up-scaling program; to make it work we need implementing instruments guiding all actors involved in planning, constructing, and operating toilets and water kiosks in the poor urban areas."

To implement low-cost technologies consistently and efficiently on a countrywide scale and prevent the embezzlement of funds allocated for last-mile investments, WSTF developed 'standardized products' (e.g., water kiosks, yard taps, and public toilets), process standards, and a robust risk management system for the scaling-up process.

Development of the Toolkit for Urban Water Supply

From the pilot it became clear that the utilities needed extensive support in all areas of design, construction, and operation of low-cost infrastructure. Ideally, they would have access to all available documentation, including planning spreadsheets and technical drawings, to help them plan, construct, operate, and monitor a water kiosk system.

The first Kenyan "toolkit for urban water supply" was a detailed summary of all the experience gained from the pilot studies and served as the basis for national standards and uniform implementation. There are now toolkits for urban public and household sanitation, and toolkits for last-mile access continue to be updated and refined as scaling up progresses. Every toolkit offers comprehensive support—from selecting appropriate technology mixes, through sustainable, community-oriented business and management models, to the social marketing mechanisms that will secure participation by the intended users.[11]

During the water kiosk pilot program the WSTF technical team and the embedded GIZ advisors worked closely assembling the knowledge that produced the toolkits, and ensured the flow of information to WSTF management, the Ministry, and WASREB. A sound balance between desk work and work on site enabled WSTF technical staff to enhance their understanding of their tasks. Gradually they became able to take over the process of developing and further refining access solutions.

10 A second survey carried out in 2010 provided further evidence that the population largely accepted the new water kiosks introduced by utilities.

11 Toolkits support Trust Fund and utility staff, local consultants, community members, and facility operators. Standard designs are complemented by detailed implementation guidance. Toolkits focus on appropriate mixes of low-cost technologies and shared facilities, addressing the specific requirements of low-income areas. They introduce business and management models for last-mile infrastructure, which make it financially attractive for a utility to sustainably operate the infrastructure and enhance the utility's commitment and experience as well as the involvement of the local community. Finally, they contain social marketing concepts, which enable participatory planning, secure hygienic use of infrastructure, and promote acceptance in the community. The toolkit for public sanitation projects under the WSTF is available at the Sustainable Sanitation Alliance website, www.susana.org/en/resources/library/details/1273.

This led to strong ownership and awareness within the WSTF of the complex conditions in low-income areas and how water utilities function. The continuous interaction of utility and Trust Fund staff (in regular meetings and site visits) was key for the sound application of the toolkits in the scaling-up process. Both WSTF and utility staff learned lessons in this process, and the portfolio of standard products of the Trust Fund expanded over the years to respond to the dynamic demand from low-income citizens.

The First Call for Proposals to Invest in the Program

Once the toolkit for water kiosks was complete and ready for application, WSTF issued the first public call for proposals in 2009. All utilities—with the participation of the target groups in the low-income areas—were invited to submit proposals for last-mile investment funding. Eligible applications would be chosen based on a careful assessment against previously published technical, financial, and social quality standards. The team braced themselves for a muted reception, fearing that the competitive selection process would fail for lack of interest in the comparatively small investments on offer.

The technical manager of the WSTF's urban financing window breathed a sigh of relief when he received one investment proposal after another from water utilities across the country. By the deadline, 20 utilities had submitted proposals. Two important points had been proven: the concept was attractive to utilities, and they appreciated the importance of low-cost technologies. This was a very promising sign, but it was not to be taken for granted. WSTF upheld its motto that "quality mattered more than quantity." Accordingly, 10 of the proposals were referred back to the utilities for revision and deferred to the next call round.

The investment proposals of the remaining 10 utilities were enough to begin the scaling-up process. In the following months, 62 water kiosks and 92 yard taps were constructed across the country. After completion, kiosk operators were recruited and trained by the WSTF and utilities, and kiosks were integrated into daily utility operations. In order to ensure that the planning, construction, and operation of the water kiosks met the WSTF guidelines and toolkit provisions, the WSTF technical team—supported by field monitors (local consultants employed by WSTF)—carefully observed and reported on technical, social, and financial performance of the newly built last-mile infrastructure. Monitoring was designed to mitigate corruption risks and to ensure that kiosks would not be taken over by informal service providers.

The outcome of this first call round was very encouraging, both for the WSTF and for its financing partners: 160,000 people received access to safe drinking water supply.[12] Confidence in the WSTF was growing. An important lesson, which would be confirmed in the following rounds of calls for proposals, was that medium-size utilities would be important players in the scaling-up process. Even though they had not been "spoiled" by DPs with larger grants and loans, they had sufficient capacity to prepare sound investment proposals and manage the kiosk systems in a professional manner.

What Made the Funding Partners of WSTF Confident That Their Money Was Well Spent?

The efficiency of WSTF operations and the prevention of fund embezzlement were supported by strong formal provisions, which were defined in the act and statutes of WSTF—an indication of the high corruption risks typically associated with infrastructure investments at that time. The Trust Fund had been designed as an autonomous sector institution with a board of directors making decisions, staff hired in the open labor market, and a mandate to attain a high level of self-financing. Autonomy was important to board decision making, management decisions, human resources, and financial management. WSTF needed protection from political interference from the Ministry and separation from the financial management of the WSBs that were responsible for first-mile, large-scale investments and where anecdotal evidence of corruption was strong. Contrary to standard practice in other Kenyan public sector institutions, WSTF's human resources management allowed nonpermanent employment contracts, setting an incentive for staff performance and promoting integrity. This was supported by internal and external auditing provisions.

Further assurance was provided by the procedure for the competitive call for proposals, which guaranteed an efficient and needs-oriented allocation of funding. It was one of the first to be developed by WSTF with GIZ support—a lesson from Zambia. The WSTF also

12 Kiosks are designed to comfortably serve relatively large numbers of users. According to the pilot experience, an average of 300–500 people per day can be served per water tap at a water kiosk. The kiosk is generally equipped with three taps and on average covers an area of one to two square kilometers depending on the density of the settlement. Each yard tap serves 20–30 people.

developed its own simple but comprehensive information system to ensure transparency and the objectivity of its investment decisions. The UPC Information System provides up-to-date data on the level of compliance of utilities during implementation of past projects to help determine future eligibility. Data are constantly fed into the system. By 2014, the WSTF team, backed by about 20 field monitors, was checking progress and compliance during construction on a quarterly basis, following up with annual checks on operations. Information on eligible and compliant utilities receiving WSTF funding was forwarded to the DPs.

Maintaining the Professionalism of WSTF

Even though the WSTF was established against a backdrop of decentralization reforms, it was subject to pressure for politically motivated funding allocations.[13] As a GIZ advisor remembers, the conduct and decisions taken by some board members were not always professional. There were some attempts to interfere with WSTF management for personal or political interests, such as by influencing recruitment decisions in favor of relatives or based on tribal background. Board members tried to politically exploit funding decisions by manipulating lists of approved investment measures. In one case, a board member seeking political office argued in favor of certain investments in order to secure votes during the upcoming regional election, completely ignoring the Trust Fund's quality- and equity-related funding conditions. Although these were typical risks associated with processes of resource allocation, they put the reputation of WSTF as a professional institution at stake, endangering the trust and confidence of financing partners, government, and the public.

When the first list with manipulated investment proposals arrived on the desk of a DP in 2010, the integrated GIZ advisors, who also take part in the meetings of the board's investment committee, acted decisively to save the credibility of the WSTF. They supported the coalition of honest board and staff members in providing information on the manipulated proposals to the DPs, which was critical to avoid the WSTF's drifting off course. The EU and KfW duly rejected the list and demanded strict compliance with the published technical and financial criteria for investment approval. Honest board and staff members, with their objections validated, submitted a clean list of proposals to the DPs, which was then approved.

The integrated GIZ advisors were integral to backing employees and coalitions within WSTF who had a shared vision of developing WSTF into a professional organization. They helped to retain motivated staff and to monitor the calls for proposals, evaluation of proposals, and subsequent decision making and implementation. The close coordination between GIZ and the DPs has proven to be important; when other means of mediation or facilitation seemed futile, the funding commitments from DPs functioned as a carrot and stick for stakeholders.

Figure 3 provides an overview of some of the key processes that led to sound organizational performance of the urban financing window of WSTF. Support for the development of process standards and the organizational structures and systems became effective because of additional, complementary situational actions. The situational actions resulted from the day-to-day interaction between the long-term technical advisors and staff and decision makers of WSTF, and helped to mitigate risks and bottlenecks for the delivery capacity of WSTF to handle last-mile infrastructure investments.

Approaching Scale: More Utilities Learn to Deliver Services in Low-Income Areas with Low-Cost Technologies

Subsequent Calls for Proposals

Since 2009, six calls for proposals have been issued. Fifty utilities submitted investment proposals in 2013. More than 250 investment measures, generally consisting of water kiosks, public toilets, and additional small to medium-size investments to connect an area to a larger network were successfully implemented. According to the monitoring operations described above, about 80 percent of the infrastructure was still in good operational order several years after completion of the original investment. The close technical support to the utilities provided by the WSTF technical team and field monitors created "learning loops" within the utilities: the quality of proposals improved and the technical know-how of utilities on planning, construction, and managing the water kiosks and other outlets was expanded. After each round of calls, WSTF organized workshops for utilities to exchange their experiences, and toolkits were updated.

13 County governments naturally favored equal allocation of funds to all regions. This approach would, however, entail the risk of financing projects that would be at high risk of failure or corruption.

Figure 3 Formal and Informal Strategies to Make WSTF Effective

Note: WSTF = Water Services Trust Fund.

An important lesson learned from the process was that utilities needed to develop full ownership of their last-mile infrastructures and water kiosk systems. The example of the Nairobi Water Company illustrates that commitment from utility top management is not sufficient. In this case, the manager responsible for low-income areas did not support the expansion of services to Mathare (Anna and Ruth's home settlement). As a result, the water kiosks were not managed with the required supervision and control and were either not open or received no water.

To set an incentive for the utilities to carefully plan any investment in water kiosks and to ensure the kiosks' professional management, WSTF created a blacklist of utilities that repeatedly disregarded the Trust Fund's standards and procedures. WASREB has been supportive of WSTF's efforts to help utilities extend service provision to LIAs and to expose especially the large utilities that are still hesitant to serve the poor. WASREB, assisted by GIZ, has developed a new version of its Water Resource Information System, which obliges the utilities to report on their progress in specified low-income areas. WASREB and the WSTF are now in a better position to monitor inequality in service provision and the progress made to reduce it.

Providing Sanitation

Responding to the demand from utilities and low-income customers, WSTF offered public toilets as a scalable product during the first call rounds. However, the responsibility for sanitation was unclear at the national level, as was the role utilities should play in the promotion of on-site sanitation. Traditionally, sanitation and hygiene were the domain of the health sector and completely neglected by water and sanitation service providers. Building toilets and employing informal service providers to remove the sludge was strictly regarded as a household responsibility.[14]

Water and sanitation subsector professionals are better able to provide the support poor households need to construct and maintain toilets according to national minimum standards, especially when the support is linked to subsidies. With additional financial assistance from the BMGF, which provided another US$7 million into WSTF for infrastructure development, the Trust Fund was able to offer a choice of on-plot sanitation or household toilets under the Up-Scaling Basic Sanitation to the Urban Poor (UBSUP) program.[15] The BMGF managers were convinced by the performance of WSTF and in 2012, BMGF funds were used to pilot the implementation of decentralized wastewater treatment

14 Of course, this is absurd; the poor who struggle to pay for their daily water cannot afford toilets, let alone sludge removal, or there would be no such thing as flying toilets.

15 UBSUP was also financed by KfW, which provided US$10 million. BMGF also provided US$3 million to GIZ for technical assistance to help the WSTF to develop UBSUP.

facilities, collection systems, and shared on-plot toilets with three utilities.

The toilets were financed and constructed by landlords or householders, who would receive a fixed subsidy from the Trust Fund upon completion of the facility in the form of a cash transfer. At the end of this pilot program, the WSTF and GIZ team were caught by surprise: Instead of the 600 planned toilets, 2,000 had been constructed. Most households complied with the prescribed technical standards. These first results proved that households and landlords in particular were willing to pay for adequate sanitation services and accept part of the financial responsibility. Small entrepreneurs, who operated informally before, could be transformed into local sanitation entrepreneurs, collecting and transporting faecal sludge from the households. The pilot programs also raised awareness for the need to invest in sanitation and enhanced the policy dialogue between the ministries responsible for health and water.

Following this success, WSTF is now planning to support utilities in developing viable and functioning systems for wastewater and solid waste collection and decentralized wastewater treatment facilities, especially in areas where there is no sewerage network. About a third of the country's water utilities submitted funding applications for on-site sanitation, and out of these applications about 20 utilities were accepted for funding. Successfully implementing the decentralized sanitation infrastructure will be the greatest challenge for the WSTF in the coming years.

Monitoring Service Coverage Improvements in Low-Income Areas

While the scaling-up process was gathering momentum, GIZ advisors became increasingly concerned about the fragmented information available in the sector. Until 2011, sector reports on service coverage in low-income areas relied on paper-based estimates or very broad and insufficient water-related census data. Before the creation of WSTF, none of the national institutions in the sector showed much interest in the coverage in LIAs. Meanwhile, WSTF had adopted a practice of aggregating the investment-specific information for the various utilities between the calls for proposals, which did not provide the necessary level of insight.

WSTF staff and GIZ advisors recognized that a professional assessment of the services in low-income areas was overdue. Without updated and comprehensive data, it would be difficult to ensure that further funds would be effectively used and to persuade decision makers to continue their support for scaling up. There was a real risk that interest in scaling up would be lost. Furthermore, without a reliable baseline, it would be impossible to convincingly track progress made in the sector. The WSTF needed a system of documenting progress in low-income areas measured against the situation at the outset of the programs and also against the rapid growth of demand due to urbanization.[16]

Another indication of the need for an improved database was the seemingly endless discussion about the number of dwellers in Nairobi's Kibera slum before 2007, which a number of publications labelled as the "biggest slum in Africa." Rapid assessments carried out by WSTF staff and GIZ advisors never estimated its population at above 200,000, far from the "over 1 million poor" claimed elsewhere. A departure from old attitudes was backed by the new sector legislation and statutes, which contained accountability provisions that forced the sector institutions, including the Ministry, WASREB, WSTF, and utilities, to record more extensive performance data and reporting the data to the public. Much of the work of the new sector institutions would hinge on the quality of available data. With motivated staff and IT-based systems, they were well placed to address the information gap. In the case of WSTF, the information demanded by BMGF, KfW, and the EU provided another impetus to create a reliable and credible database. GIZ advisors encouraged WASREB and WSTF to publish the new data and spark discussions in the sector and among the wider public on how to extend services to the urban poor.

Based on the notion that sound data are critical for choosing technology and investments, and with the consent of national decision makers, technical advisors of the German Development Cooperation and other partners initiated a baseline study covering all urban LIAs in Kenya in 2011. For the first time, it was revealed that about eight million people live in more than 2,000 low-income urban areas in Kenya. Demonstration meetings promoted by GIZ helped stakeholders understand

16 Sector reform, including scaling up through the WSTF, has helped to reverse a negative trend toward an increasing number of underserved in urban areas, but it is still far from eliminating the backlog of the millions of underserved accumulated over the last decades.

Table 1 Institutional Performance and Outcomes of WSTF-UPC as of December 2014

Category	*Value*
Institutional Performance	
Year operation started	2006
Number of staff	6
Commitments from development partners and donors	€28 million
Operational efficiency (disbursements/overhead cost)	10%
Number of external audits (since start of operation)	10
Number of calls for proposals	
Water supply	6
Sanitation	5
Outcomes	
Access	
Number of residents with access to safe drinking water supply	1,750,000
Number of residents with access to adequate sanitation	120,000
Water supply	
Number of water kiosks	572
Number of yard taps	530
Length of water network	1,699 km
Number of water tanks	113
Number of water meters	25,761
Sanitation	
Number of household toilets (UDDTs, flush, VIP latrines)	2,000
	56
Number of public sanitation facilities	11
Length of sewerage network	

Source: Data extracted from UPC-Information System, WSTF, December 12, 2014.
Note: UDDT = urine-diverting dry toilet; VIP = ventilated improved pit.

the critical importance of information to improving services, as it would inform decisions on investments and technology by taking into account the demand and needs of the target population.

The baseline data was later transferred to a permanent, updatable database (MajiData). MajiData did not account for the funds received by the DPs, however, and the WSTF developed UPC-IS, which supports financial management and the collection of data on implementation progress and the operation of infrastructure. UPC-IS reports submitted to the DPs contain, for example, cost-beneficiary ratios. Now both MajiData and UPC-IS are increasingly used as important, nationally embedded tools by WSTF, the Ministry, WASREB, and utilities to manage the scaling-up process and report to the public on progress. Together with the WASREB's Water Resource Information System, they have contributed to increased transparency and accountability in the sector, one of the significant achievements of the water sector reform.

Evidence of Development Outcome for Citizens

The scaling-up approach has achieved significant improvements for large numbers of Kenyans. About a fifth of the urban low-income population have been reached with last-mile investments funded through the WSTF. Nearly 1.8 million residents have gained first-time access to safe and affordable water services through water kiosks and yard taps since 2008. Scaled-up sanitation is accelerating, with about 120,000 people served since 2009,[17] and that number is set to rise to 429,000 by the end of 2016.

The institutional performance and outcomes of the urban financing window of the WSTF are summarized in table 1 and figures 4 and 5. The Trust Fund has proven to be an effective and efficient financing mechanism to increase access for the poor to formalized service provision with limited funds. The average cost for last-mile infrastructure for water supply stands at €12 per beneficiary,[18] and comparable costs for sanitation have fallen to €24 per beneficiary[19]—both representing good value for money. Moving the poor from informal to formal service provision constitutes the biggest jump of improvement in the ladder of service levels.

Scaling up has touched many aspects of consumers' lives: households save substantial amounts of their income, incidences of waterborne disease have declined, hygiene is improving, and the burden of fetching water, usually the task of women and children, is significantly reduced.[20]

GIZ commissioned household surveys to capture the beneficiaries' perceptions of changes in their living conditions once formalized water kiosks were provided by utilities. Acceptance is very high: Almost all respondents of a Greater Nairobi survey were reportedly using WSTF-funded water kiosks by 2010. The 2013 WSTF survey in

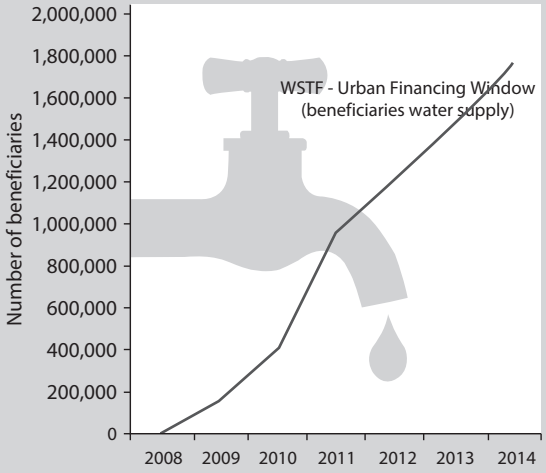
17 Unlike many other access statistics, these figures have been verified through specially developed information systems embedded in to the standard processes of UPC and take into account the agreed minimum service criteria.

18 This takes into account the total cost of technical assistance, capital for the last-mile investment, and operation of the financing mechanism (that is, Trust Fund overhead), but excludes investments in large-scale, first-mile infrastructure.

19 This includes subsidies of approximately €16 per toilet built, construction of decentralized treatment facilities, the costs of technical cooperation, and all other project-related costs. It does not include the financial contribution of the households for the construction of the toilets.

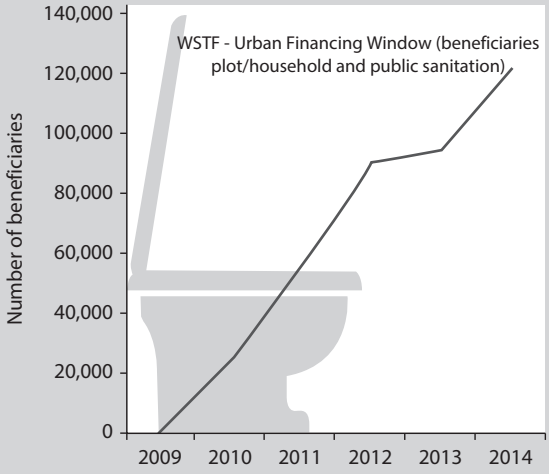
20 Evidence can be found in the results of various surveys carried out in the target areas. Quotes in this chapter are drawn from various reports (WSTF 2010; Ojwang et al. 2014; GIZ 2014).

Figure 4 Beneficiaries of Water Supply under WSTF-UPC



Source: GIZ 2015.

Figure 5 Beneficiaries of Sanitation under WSTF-UPC



Source: GIZ 2015.

the towns of Lodwar, Malindi, and Nakuru concluded that 80 percent of the interviewees were satisfied with the service coverage in their area, and 82 percent rated the reliability of drinking water service provision as "good" or "fair" (WSTF 2013).

Direct Savings

All kiosks sell water at regulated prices, with customers across the country able to buy water at a fixed price of K Sh 2 (€0.02) per 20 liters.[21] Others, like John Ochieng Ngutu from Rhonda, a low-income area of Nakuru, have had their plots connected to the utility water system for only €25, and are saving approximately K Sh 2,500 (€25) on their monthly water bills over informal service provision. Before, "getting a water connection was a nightmare with costs of K Sh 115,000 (€1,100) to be paid to the council," Ochieng Ngutu recounts.

Improved Water Quality

Surveys generally report high confidence in kiosk water quality. In Rongai and Athi (settlements in Greater Nairobi just south of the capital), for instance, the share of households treating water before use had dropped from 71 percent to 38 percent and from 64 percent to 38 percent, respectively, by 2010. Residents from Nakuru concurred, commenting that they no longer needed to buy water purification tablets.

Improved Hygiene and Reduced Waterborne Disease

Households appreciate being able to keep clean and healthier, with a reduced incidence of waterborne disease confirmed by health professionals. Jane Otieno, a public health officer in Rhonda, Nakuru, notes fewer outbreaks of typhoid, for example, freeing money patients would previously have spent on medication. She is pleased to report that, "In addition, our dispensaries have received a much better water supply, which greatly improved hygiene in our stations."

Shorter Waits and Travel Distances

The task of rising early, walking long distances, and waiting at water points would generally have fallen to the women and children of a household. Much like Anna in Mathare, the vast majority of kiosk users now report that distance and time spent was reduced (for example, by more than 90 percent in Athi and Rongai) after the introduction of WSTF kiosks. "I always felt that I supported child labor when being obliged to let my children fetch water," admits one father from Rhonda, who is now happy that he can

21 Kiosk users can now buy about two cubic meters of water for the same price that household customers in more affluent parts of the city are charged for the lowest consumption block (six cubic meters), a vast improvement in overall fairness.

send them to school instead. Seen through the eyes of a girl from Mathare, life has become happier: "Water kiosks have made it easy for me . . . . I am not late for school [and] now I have more time to play and do my homework."

Better Security

For many families, security is a major concern. Ochieng Ngutu is relieved he no longer needs to fear his daughters will come home pregnant from traveling long distances to fetch water. In Athi River and Rongai, where water kiosks were deliberately installed in central and open locations, more than 80 percent of survey respondents now perceive an improvement of security. The controlled management of kiosks and public toilets strongly discourages harassment, which particularly benefits women.

Income Opportunities

In addition to the direct and indirect savings enjoyed by households with access to safe and affordable water, kiosks have helped create further opportunities. Stephen Mbugua, a kiosk operator from Mathare, explains that he makes money by selling a few household essentials in addition to water. Women, who run an equal share of the water points, public sanitation facilities, and public toilets, appreciate the regular income they earn as operators and from the small businesses they can run alongside.

Although no formal surveys of sanitation improvements have been carried out so far, anecdotal evidence suggests these are equally valuable to and valued by residents of low-income areas.

Lessons Learned

The following section details the most important lessons drawn from the case study.

How was the emphasis in the Kenyan water sector shifted from an almost exclusive focus on household connections and toward technology mixes that included low-cost options?

Despite internal political pressure to expand services to urban low-income areas, in an environment with a high rate of urbanization, universal access to water and sanitation through conventional household connections alone would remain out of reach in the medium term. Existing lower-cost alternatives would need to be explored. Inspired by the scaling-up approach taken in Burkina Faso and Zambia, Kenya enacted a formal pro-poor sector framework.

Director Ombogo of the Ministry and the CEOs of WASREB and WSTF became champions of the pro-poor reform. A South-South Knowledge Exchange was coupled with national strategic dialogues in which stakeholders developed a deeper understanding of the importance of low-cost technologies to reach the last mile. The pro-poor policy framework enabled the WSTF, with support from German Development Cooperation, to pilot water kiosks that were professionally managed by utilities. The feasibility, acceptance, and sustainability of low-cost technologies to scale up services could finally be proven in the Kenyan context. The outcomes, together with the equally successful trials of low-cost sanitation options that followed, convinced decision makers and utilities that a new way forward had been found.

In the course of the reform, some DPs also realized that the focus on household connections as well as their own standard implementation models for investment prevented the scaling up of water and sanitation infrastructure in urban low-income areas. The combination of the WSTF's autonomy and the presence of GIZ advisors as informal risk managers created confidence that WSTF was developing into a credible funding mechanism for last-mile infrastructure.

How did Kenyan institutions learn from the application of low-cost technologies and apply that knowledge to technical, social, and managerial issues?

WSTF used the lessons it learned from the successful water kiosk pilot programs to create a "toolkit for urban water supply."[22] The initial intention was to share the tested technical designs and proven approaches for kiosk management and provide simple, hands-on guidance for the implementing utilities. The toolkits also ensured uniform implementation of low-cost technologies across the country. From the outset, pilot projects were undertaken with a view toward transforming tried and tested programs into national standards.

The various tools have been—and continue to be—updated based on the experience of the 70 utilities currently implementing investments funded through WSTF. Likewise, the WSTF's product portfolio was

22 Toolkits now exist for urban water supply, urban public sanitation, and urban household and on-site sanitation.

expanded following steps similar to those used for the water kiosk. Pilot projects were initiated for yard taps, public toilets, and household toilets, and those experiences (such as what material to use or how to convince households to invest in sanitation) were assembled into new toolkits, which were rolled out through the calls for proposals.

The frequent field visits of WSTF staff and close collaboration with the utilities were important to developing a common understanding of how low-cost infrastructure can be successfully operated and integrated into utility operations. Scaling up places high demands on utilities and WSTF staff, who need to keep learning and adjusting the use of specific tools (such as guidelines, posters, checklists, and reports) as well as the overall monitoring and operation of low-cost infrastructure. Regular feedback workshops with the utilities have been critical in this regard.

Although the scaling-up concept and specific tools have reached a mature stage, covering all technical, social, and managerial aspects of last-mile service delivery, there will always be room for improvement.

How did the Kenyan government and water utilities technically and financially roll out and sustainably operate low-cost technologies on a countrywide scale?

The major innovation in Kenya which made scaling up possible was the WSTF, an explicitly pro-poor financing mechanism. The combination of competitive funding allocation of last-mile investments and strong technical support and standards for low-cost infrastructure such as water kiosks, secured the support of some DPs. Recognizing this approach as a beneficial addition to the conventional, large-scale project approach, they diverted some of their funds to WSTF.

The Trust Fund has been instrumental in channeling investment funding (about €23.8 million to date) to those utilities showing promise and commitment to serving all their customers. The competitive funding procedure proved to be a good incentive for utilities to submit sound investment proposals, execute funding in a timely manner, and ensure the construction of infrastructure in compliance with the new national standards.

But WSTF is far more than just a financial intermediary. It functions both as a risk manager for the DPs and as an agent to build the capacity within utilities to serve low-income areas. Beginning with the first pilot projects, WSTF has been facilitating continuous institutional learning and knowledge transfer. Support offered by WSTF (through the comprehensive toolkits), as well as the follow-up (through strict monitoring), has been critical in ensuring financially and technically sustainable construction and operations.

How did the technical and financial assistance work together to support the service shift and the scaling-up process in Kenya?

With a team of long-term advisors, WSTF could develop into a professional and trusted organization and set about realizing the joint vision of "helping to provide water and sanitation services to all urban low-income areas." The strong influence of the integrated GIZ technical experts was not limited to strengthening the WSTF's internal processes (such as the call for proposals procedure), systems for monitoring, and human capacities. Advisors also helped foster positive relationships with key external stakeholders.

The close collaboration between the financial and technical assistance—as provided by GIZ and the Trust Fund's financing partners in Kenya—was critical to combining the funding of last-mile investments with the concept and capacity development activities that are necessary to scale up services. Furthermore, close coordination between the financial and technical sectors was key to managing political, fiduciary, and operational investment risks. Technical advisors understood the internal functioning of WSTF and noticed the interference in the decision-making process. Honest WSTF board members and staff formed an informal coalition with their GIZ advisors, which made it possible to avoid embezzlement of funds in the allocation of investments and enhance the confidence of DPs and the government in the Trust Fund.

Future Questions to Be Addressed

Even as the scaling-up process is in full swing, it is hampered by unresolved challenges and some misperceptions that are remarkably persistent. There are a number of issues that need to be addressed to extend and consolidate the successful effort to date:

- The underestimation of consumers' ability to pay for services in low-income areas is still widespread, despite evidence to the contrary.
- Baseline information is critical to the scaling-up process and to guiding the prioritization of last-mile investments. Experience has shown, however, that the continuous updating of data is difficult to achieve.

- The Kenyan sector framework does not yet provide for the clustering (systematic merging of utilities in one region or area, where efficiency and cost recovery of service provision can be substantially enhanced through economies of scale) of the more than 100 participating utilities, which is a prerequisite for the urgently needed economies of scale. Although decision makers acknowledge that the size of a utility matters for its effective operation, clustering efforts have encountered resistance from some stakeholders, such as board members of utilities with vested interests.
- There are ongoing difficulties with informal service providers. Although no longer legally recognized, ISPs have not been fully integrated into formal utility systems or replaced.
- Despite its success in expanding coverage in urban areas, WSTF remains unattractive to DPs and domestic funders. The growing financing gap cannot be bridged by solely relying on funds from DPs. Local revenue and resources have to be channeled into the WSTF to make it sustainable in the long term. The new draft water act currently foresees a surcharge to water bills as a possible source of financing for WSTF.
- WSTF must secure organizational performance and governance once the embedded advisors withdraw. The formal safeguards coupled with the integrity of the CEO and managers are key in this regard and show promising trends.

How the Case Study Informs Science of Delivery

The emerging framework of the science of delivery identifies five elements that are important factors for meeting delivery challenges in the development context.

Relentless Focus on Citizen Outcomes

- The MajiData database and the UPC-IS targeted investments toward urban poor residents; they supported the matching of technology choice with the preferences and socioeconomic circumstances of poor citizens.
- The expansion of utility WSS services has proven that households accept low-cost technologies, are willing and able to pay for safe drinking water services, and will invest in household sanitation.
- One of WSTF's key criteria used for the prioritization of investments is the number of beneficiaries reached. The robust monitoring of each investment measure over a minimum of five years ensures that completed infrastructure will be operational and used.
- The WSTF implementation support and toolkits for utilities address the social aspects of infrastructure extension to secure user acceptance and participation and promote positive health outcomes.

Multidimensional Response

- National institutions (the Ministry, WSTF, and WASREB), 70 water and sanitation utilities, local communities, and external partners (GIZ, KfW, EU, and BMGF) collaborated in the scaling-up process. Contracted by the utilities, the local private sector and communities are involved in the construction and operation of water kiosks and public sanitation facilities.
- Backed by high-level political commitment, the partnership between WSTF and embedded GIZ technical advisors was critical to convince DPs to make financial contributions to WSTF.
- Key national decision makers were involved through the South-South Knowledge Exchange in preparing to change from an exclusive focus on conventional household-level access to a mix of technologies, including low-cost options. A wide range of stakeholders was engaged and won over through dialogues led by the head of the Ministry's reform unit and the successful pilots of low-cost technologies funded by GIZ.

Leadership for Change

- GIZ technical advisors and the decision makers of key institutions have been working to improve organizational policies, processes, and systems. As an outcome of this cooperation process, proponents of the scaling-up process developed a shared vision of their organizations as professional entities committed to the delivery of pro-poor services. This cooperation was often more important than mere technical advice.
- Learning events, including field visits, workshops, and utility peer-to-peer learning, promote the wide sharing of experience with the implementation of WSTF-funded investment measures.

Evidence to Achieve Results

- The South-South Knowledge Exchange and the sharing of evidence by Zambia and Burkina Faso were key to learning from practices elsewhere. Seeing

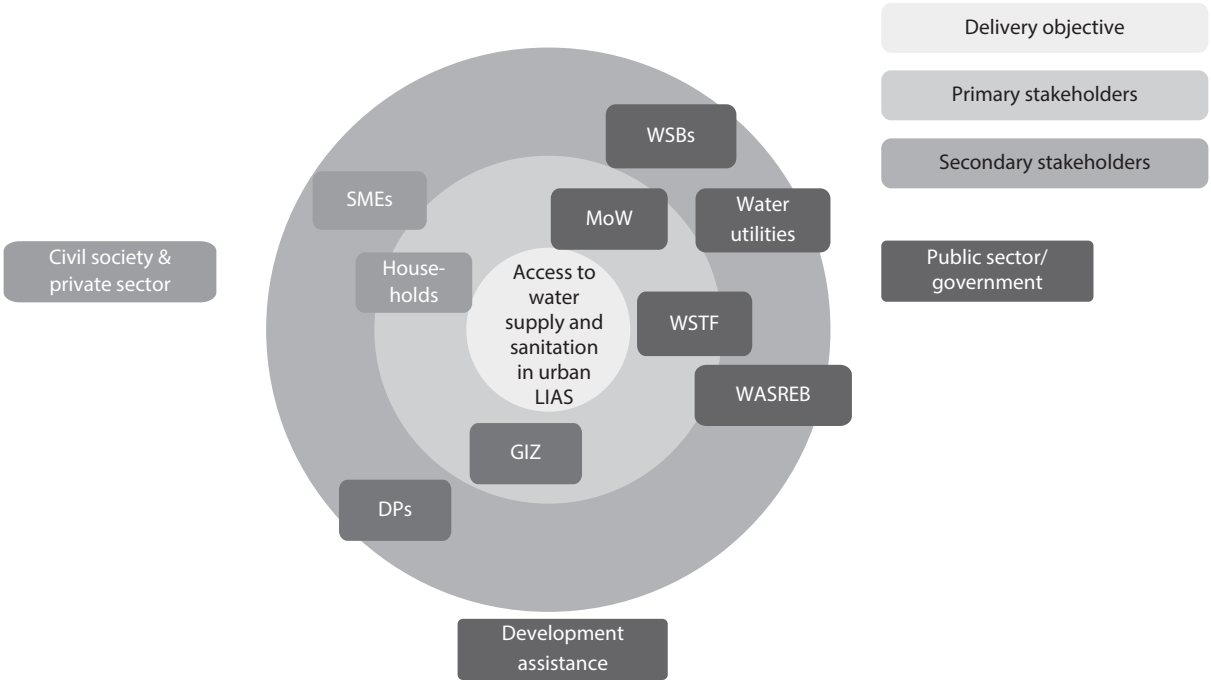
evidence that water kiosks could be an access solution that is accepted by low-income customers was critical for Kenyan policy makers.

- The visible impact of the DTF in Zambia strengthened the belief of the CEOs of WASREB and WSTF in a pro-poor financing mechanism. It helped foster a vision of how to scale up access to water and sanitation services in Kenya.
- The experiences of piloting low-cost infrastructure for the poor were incorporated into toolkits that were repeatedly updated. The pilot programs enabled the creation of countrywide standards applicable to all investment measures. Technical designs, business models, and social marketing tools are developed and updated by the WSTF technical staff based on knowledge acquired during implementation and frequent field visits.
- Robust monitoring of implementation of investment measures by WSTF (including field visits for verification of progress) and monitoring of operation of infrastructure over five to eight years secure a strong focus on evidence and outcomes during the scaling-up process.

Adaptive Implementation

- The call-for-proposals procedure allows for the flexible disbursement of funding from WSTF to water utilities according to their absorption capacity. The amount of last-mile investment funding during each round of calls is determined by the quality of project proposals of the utilities rather than ex ante defined "disbursement plans" or tight project timelines. Funds which are not used during one round of calls can still be disbursed during the following ones. The experience of WSTF has shown that utilities learn how to plan, implement, and operate last-mile infrastructure gradually (i.e., their absorption capacity increases over time).
- GIZ support is oriented toward the needs of the partner institution, in this case, WSTF. Long-term GIZ technical advisors adapt to the increasing levels of professional capacity of WSTF staff and the increasing complexity of organizational processes. German technical cooperation permits flexibility during the implementation of three-year program phases. The inputs and activities of a GIZ program are not fixed at the beginning of implementation, but can be continuously adapted to partners' needs and political dynamics.
- Although this case study addresses a basket-funding mechanism for the scaling-up process in Kenya, the Trust Fund's procedures, structures, business models, and technical designs may be relevant for other types of funding mechanisms.

ANNEX A Stakeholder Map as of August 2015



ANNEX B Timeline of Water Sector Reform in Kenya

1990s	Pilot of socially responsible commercialization with three utilities
1999	Policy for Water Resources Management and Water Supply and Sanitation, which initiated the reform process
2002	Passage of Water Act. Provisions include: · Separation of subsectors for water resources management and water supply and sanitation · Separation of sector functions (regulation, service provision, and policy development) · Decentralization of water supply and sanitation service delivery responsibility to urban water and sanitation service providers (utilities)
2004	Water Services Regulatory Board (WASREB) commences operations
2006	Water Services Trust Fund (WSTF) begins urban financing and plays a key role in supporting the expansion of WSS services by utilities to urban LIAs and providing the required funding to implement low-cost technologies at scale
2007	National Water Supply and Sanitation Strategy for the implementation of key sector principles such as · Poverty orientation · Cost recovery and ring-fencing of sector income · Regulated service provision with minimum standards
2007	Pro-Poor Implementation Plan for Water Supply and Sanitation
2008	National Vision 2030, stipulating the goal of "universal WSS service coverage"
2008	Financing commitments to WSTF by KfW (€5 million) and the EU (€10 million) to support scaling up of water supply and public sanitation
2009	First call for proposals for water kiosks and public toilets (20 utilities responding)
2010	Access to drinking water and sanitation are established as fundamental rights in the new Constitution of Kenya
2011	Financing commitment to WSTF by BMGF (US$7 million) to support scaling up of on-site sanitation to reach 429,000 people by 2016
2010–11	MajiData database provides a complete picture of WSS access in urban LIAs for the first time
2014	Sixth call for proposals under the WSTF-UPC for water kiosks, yard taps, public toilets, secondary infrastructure, and, for the first time, on-site sanitation; 70 utilities participate
Results as of December 2014	· Nearly 1.8 million low-income residents have gained access to safe drinking water · 120,000 low-income residents have gained access to adequate sanitation · 70 (out of 100) water utilities across the country operate low-cost technologies in urban LIAs · Overall investment in last-mile WSS services during 2009–13 by WSTF totals €23.8 million (compared with an investment of €373 million in first-mile WSS infrastructure not channeled through WSTF during the same period)

ANNEX C Interviewees and Affiliated Organizations

Interviewee name	*Affiliation*
Kimanthi Kyengo	MEWNR
Dirk Schäfer	GIZ
Patrick Onyango	GIZ
Doreen Mbalo	GIZ
Robert Gakubia	WASREB
Malaquen Milgo	Athi WSB
Sanne Willems	EU
Sheillah Karimi	KfW
Jacqueline Musyoki	WSTF
Han Seur, Dennis Vilovic	GFA
Simon Okoth	WSTF-UBSUP
Stelle Ndwiga	MAVWASCO
Doreen Mbalo, Carol Ngesa	Field visit Ongata Rongai
Patrick Mwangi	World Bank
Patrick Alubbe	Water.org

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