



Benchmarking of Urban Sanitation Pricing and Tariff Structure in Africa

Consolidated Report (Abridged)
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List of Acronyms

ADASBU	Water and Sanitation Development Association for the Bairro of Urbanizacao
AIAE	African Institute of Applied Economics
AMCOW	African Ministers' Council on Water
BPD	Building Partnerships for Development in Water and Sanitation
BMGF	Bill & Melinda Gates Foundation
CBO	Community-Based Organization
CoP	Community of Practice
CRA	Water Regulatory Body
FGD	Focus Group Discussion
FIPAG	Asset Holding Body for Water in Mozambique
GPOBA	Global Partnership on Output-Based Aid
IRC	International Water and Sanitation Centre
JMP	Joint Monitoring Programme for Water Supply and Sanitation
KMA	Kumasi Metropolitan Authority
MDG	Millennium Development Goal
O&M	Operation & Maintenance
ONAS	Senegalese National Sanitation Office
ONEA	Burkina Faso National Water and Sanitation Company
PPIAF	Public-Private Infrastructure Advisory Facility
PAQPUD	Program for the Improvement of Sanitation in Dakar Peri-Urban Areas
PPP	Public-Private-Partnership
PSA	ONEA Sanitation Directorate
MAETUR	Rural and Urban Land Development Commission
MAGZI	Industrial Area Development and Management Commission
MMDAs	Metropolitan, Municipal and District Assemblies
NAWASSCO	Nakuru Water and Sanitation Company
NCWSC	Nairobi City Water and Sewerage Company
NGO	Non-Governmental Organizations
SIC	Cameroon Housing Company
UCLGA	United Cities and Local Governments of Africa
WASREB	Water Services Regulatory Board
WEDC	Water, Engineering and Development Centre
WSA	Water and Sanitation for Africa ¹
WSP	Water and Sanitation Programme
WSUP	Water and Sanitation for the Urban Poor
WTP	Water Treatment Plant

Executive Summary

This study to benchmark Urban Sanitation Systems, Pricing and Tariff Structures was conducted in Burkina Faso, Cameroon, Ghana, Kenya, Mozambique and Senegal in the second half of 2011. The purpose of the study was to explore how changes in the tariff system could improve access to improved sanitation and how tariffs could be used as a vehicle to deliver affordable and sustainable services.

The study was divided into an inception phase; scoping study; methodology workshop; in-depth fieldwork; validation workshop in each of the countries and a final regional workshop, which took place in Burkina Faso in December 2011. The research process was also informed by a literature review, which identified major gaps in the areas of setting the tariffs incorporating different perspectives, tariffs for on-site sanitation and pit-emptying, politics of sanitation tariffs and tariffs as a tool to promote stronger citizenship.

The study found that households pay sanitation tariffs in many forms; payments for using public toilets, connection charges for sewerage; regular payments for the use of sewerage; payments for pit emptying and payments in other forms, including non-financial transactions in some cases. The tariffs are also charged by a range of service providers, including water utilities, local government, small enterprises, Non-Governmental Organizations (NGOs) and informal sector service providers. The analysis highlighted that tariff charges at the city level depend on the system and technology in place. They could be divided into two broad categories:

- The regulated tariffs which may not be used by the poor people and could be non-affordable;
- The un-regulated tariffs which may be affordable but not delivering the acceptable levels of service.

Overall there are some good practices in sanitation tariffs, but there is no existing single business model which guarantees the potential of tariffs in providing affordable and sustainable services to the entire city, including low-income populations.

During the analysis phase, the data and information was closely observed in order to identify the cases where a change in tariff system would have a higher potential to deliver improved business models. Though these models could differ from one country to another, the study identified five general principles required to achieve this vision:

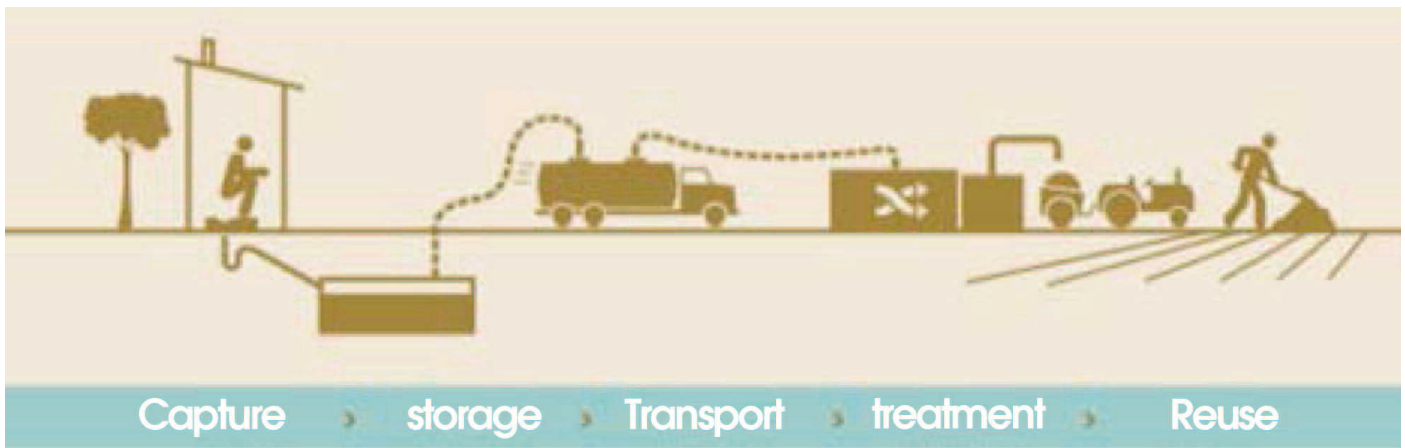
- Ability of the system to connect service providers and service users through tariffs.
- Ability of the system to cross-charge between high and low-income groups and also between water and sanitation provision;
- A system that recognizes the needs and conditions of low-income households;
- Ability to support the small-scale service providers; and
- Ability to build relationship between service providers and service users.

The study suggests that a number of changes are required in policy and practice to promote new ways of working to achieve a vision of improved sanitation coverage, especially through tariff regulation and standardization of technologies.

1. Introduction

This report presents the consolidated findings from a research carried out in six African countries on benchmarking tariffs in urban sanitation and funded by the Bill and Melinda Gates Foundation (BMGF). The research was carried out in Burkina Faso, Cameroon, Ghana, Kenya, Mozambique and Senegal from June 2011 to January 2012. WSA (then known as CREPA) led the research in partnership with Practical Action, Water and Sanitation for Urban Poor (WSUP), the African Institute of Applied Economics (AIAE), and the Water, Engineering and Development Centre (WEDC). The report provides a summary of the various tariff models in each of the study countries, their positive and negative aspects and where engagement(s) with the policy and practices is/are required. The study focus was broadly through enquiries along the sanitation value chain, from capture of the excreta through transport, storage, treatment and reuse.

Figure 1: The Sanitation Value Chain



1.2 Purpose

The purpose of this study was to promote best practices in sustainable sanitation service delivery through:

Evaluating the effectiveness of sanitation pricing and tariff models in six countries to support sustainable and equitable service delivery by understanding:

how tariffs are calculated, agreed and charged (at which level) in each country;

how these tariffs incentivize (or dis-incentivize) sustainable business models for utilities and local governments as public service providers;

how these models support service delivery and coverage at municipality/country level;

Recommending best practices in tariff policy that maximize service provision for the urban poor in the form of a set of policy recommendations.

This study was conducted in six countries, which represent different policy environments (institutional setup, regulatory framework, sanitation service provision models) and technological capacities, as well as their relevance



to trends in improved sanitation coverage (according to JMP data) (Table 1). This will provide greater understanding of best practices and barriers in tariff settings and subsequent implementation.

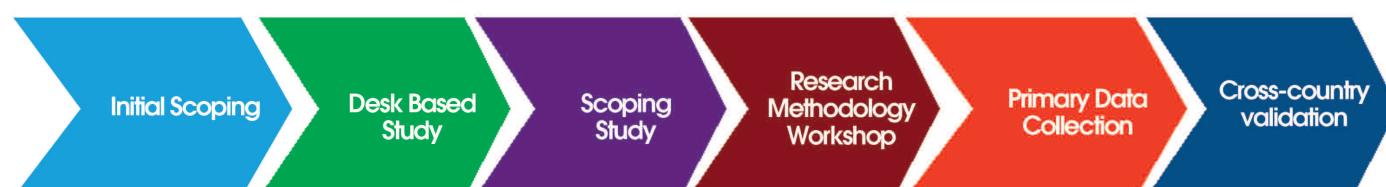
Table 1 Countries selected for the Benchmarking of Urban Sanitation Pricing and Tariff Structure in Africa.

Country	Criteria
Burkina Faso	A country where a successful model of setting and implementing sanitation charges exist through non-state provision, such as through NGOs in partnership with local governments and utilities
Cameroon	A country where utilities and local governments have not been successful due to inadequate tariff and pricing structures
Ghana	A country where a successful government model through local government provision exists
Kenya	A country with a well functioning utility and which has made some progress in improving access to water, but it has not achieved higher sanitation targets
Mozambique	A country where other actors, such as informal and small scale providers, could provide good principles in getting user charges
Senegal	A country where evidence is available that tariffs played a role in improving access to sanitation service, especially in reaching the previously un-reached households through water utilities

1.3 Methodology

The study process was mapped out during a methodology workshop in Accra, Ghana (see Figure 2). Following this, the respective country team managers set about collecting data in preparations for initial scoping studies to identify and characterize case studies, in-depth country studies and the validation of country findings at national level, and dissemination and dialogue of these with stakeholders at a regional level. While the regulatory and institutional context is extremely important to understand the cases, this report focuses more on the tariff models and their positive and negative features.

Figure 2: Implementation Process



2. Case Studies

2.1 Burkina Faso

Review of Tariff Model

In Burkina Faso, the total cost of the sanitation component of the National Program for Water Supply and Sanitation (PN-AEPA) amounts to approximately US\$321,486,000 and has a funding gap of approximately US\$170,452,305. The National Water and Sanitation Utility (ONEA) imposes a sanitation charge on water consumption and uses these funds to subsidise on-site sanitation in areas in which it operates. This is the only case where on-site sanitation is institutionalised in the study. This fee is used to finance operation costs of ONEA's Sanitation Directorate (PSA).

Through this «water pays for sanitation» cross-subsidization, subscribers who do not have access to PSA services are also expected to pay the fee. ONEA has replicated this practice in all the municipalities in which it operates and enables urban sanitation sector access to a local, regular and predictable (and growing) funding source. However, studies were recently undertaken to reform the financial model and pricing structure of the sanitation fee, which is essential to ONEA's financial stability.

There is a Sanitation Strategic Plan (PSAO) led by ONEA and implemented by key wastewater and excreta stakeholders in urban areas of Burkina Faso. The plan is based on a comprehensive and coherent approach and aims to create conditions for the emergence of a formal market for wastewater and excreta services in the city. With the implementation of this plan which started in 1991,

The number of appropriate sanitation facilities built increased from 2,850 in 1991 to 60,000 in 2007,

The number of households that have adequate sanitation systems increased from 5% in 1991 to 15% in 2007, and over 40% of plots have a sanitation system,

The financing of investments by households accounts for over 70% of investments

amounting to approximately US\$5 million; the rest represent the 30% of subsidies granted by the State and its partners,

700 field workers (artisans and facilitators) have been trained. The financial mechanism, which is a unique feature of the model, places households at the centre of decisions and involves private stakeholders (facilitators, masons, supervisors).

The model for funding the Sanitation Strategic Plan of Ouagadougou (PSAO) is exemplary in that it allows sustainable revenues from water bills, sets tariffs and subsidies taking into account the specific problems of households, namely their ability to pay for the services rendered, combines facilitation, education and information in its policy for the promotion of decent sanitation, and stimulates demand from households.

Table 2 Key Positive and Negative Aspects of Burkina Faso Tariff Model

Positive	Negative
<p>Impact/track record of ONEA subsidy programme (1992-2007)</p> <p>Construction of two sludge treatment plants in the city of Ouagadougou (with a capacity of about 500m³ of sludge per day by 2020) is included in a 2011 action plan</p> <p>Households can freely apply for ONEA's subsidy and upon signing of contract ONEA-trained artisan used for construction and three technology options</p> <p>Relatively low cost of manual pit-emptying especially in the case of traditional latrines</p> <p>A tax is levied to support ONEA fundraising efforts and rate is set on the basis of economic, social and financial considerations</p> <p>An exchange framework between mechanical emptying operators and ONEA in Ouagadougou and Bobo-Dioulasso where sludge treatment plants have been established; allows for consultation among these operators</p>	<p>ONEA's programme discriminates against populations in and around non-allotted areas (over 27% of the urban population of the city) who use traditional latrines or resort to open defecation</p> <p>Even with current ONEA's subsidy, households are still expected to make very high contributions towards any type of sanitation facility</p> <p>High private sector construction costs and collective sanitation systems of Bobo-Dioulasso and Ouagadougou primarily serve businesses, industries and government offices</p> <p>Sanitation tax collected with all ONEA subscribers is insufficient to enable the state and municipalities (i) to carry out their sanitation activities (ii) to self-finance the effective maintenance of existing sewers and treatment plants</p>

2.2 Cameroon

Review of Tariff Model

In Cameroon, collection of fees for sanitation occurs at the local level; a direct municipal tax is charged on specified sanitation services. The law allows municipalities to charge US\$0.11-US\$67/year for sanitation to public sector and formal private sector. Private companies pay patent fees on a capital of less than US\$750 per year. However, this law does not explicitly state the terms for managing wastewater and excreta, but rather sanitation in the broader sense. This legislation is made operational through Decrees No. 77/220 of 07/01/1977 and No. 80/017 of 15/01/1980 governing the funding and setting the minimum and maximum rates to be collected by municipalities.

After over 25 years of operationalizing the law on sanitation pricing, these taxes have been found to be low and primarily based solely on formal public or private sector employees who represent a small group and have little say in how it is spent.

As a result, the proportion of these taxes in financing sanitation is very low and represents only 0.2% to 5% of municipal revenues. To some extent, this provides some explanation as to why the municipal budget to the sanitation sector is low and represents only 10% to 15%.

Table 3 Positive and Negative Aspects of Cameroon Tariff Model

Positive	Negative
<p>All houses built by the Cameroon Housing Company (SIC) are connected to sewage systems that feed into treatment plants; connection fee charged</p> <p>Financing of private sanitation technologies are sourced from traditional banks and micro-financing institutions (catering for about 20% of urban households), landlords own funds and loans from informal financing sources (used by about 2/3 of urban households) and NGOs (with beneficiaries providing about 10-30% of the total facility cost)</p> <p>Private (indiscriminate) sewerage disposal is predominant in Cameroon with over 700,000 private facilities including septic tanks, traditional and improved latrines</p>	<p>Since its creation, MAETUR has achieved little and its performance has not matched the increasing demand of a growing population.</p> <p>Sewerage networks cover less than 1% of urban population</p> <p>Ineffective transfer of financial resources from SIC and MAETUR to local governments/municipalities for the management of their public sanitation systems: this gap leads to an unfulfilled responsibility,</p> <p>Lack of a municipal O&M strategy for systems which are subsequently abandoned because of their poor functioning.</p> <p>Poor compliance by artisans and small/medium scale businesses of technical building techniques and standards</p> <p>Failure of relevant local and State technical services to monitor the construction rules of these facilities</p> <p>Non existence of sludge treatment plants in Cameroon</p>

2.3 Ghana

Review of Tariff Model

In the urban areas of Ghana, public toilets are owned by government, private persons and through public-private partnerships. Tariff setting for the use of public toilets is primarily done by the Metropolitan, Municipal and District Assemblies (MMDAs) or by the MMDAs in consultation with franchisees in the case of public-private partnership. Tariffs charged to wholly privately-owned facilities are at the discretion of the operator.

However, the setting of sanitation tariffs in Ghana has been based largely on the following:

If the facility is entirely government-owned and operated, by a public-private partnership arrangement, or entirely privately-owned and operated.

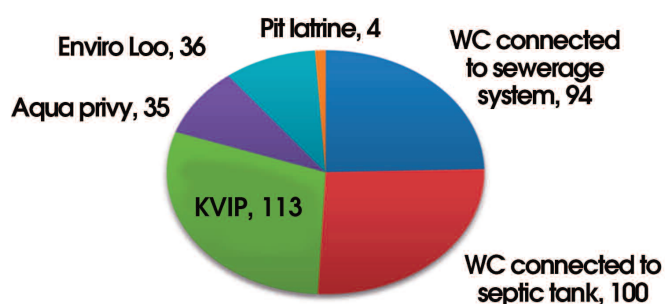
The type of technology of the facility.

The location of the toilet (urban or rural, residential or commercial area, school, market, lorry park, etc.).

The socio-economic circumstances of the target beneficiaries, including income levels, population density and culture particularly as it relates to anal cleansing practices (washing or wiping i.e. use of water vs. paper and other solid materials).

Beneficiaries' willingness and ability to pay the requisite user fees.

Figure 3: Type of toilet facilities commonly used in Kumasi



The tariff is set at US\$0.03 for the Kumasi Ventilated Improved Latrine (KVIP) and US\$0.07/use for the water closet (WC) in residential areas. In commercial areas such as markets and lorry parks, users have a choice among several facilities and services, and tariffs ranging between US\$0.03-US\$0.13. Most people in these areas are either traders or travellers and can afford the higher fees. An estimated 50% of urban dwellers rely on public toilets.

Table 4 Positive and Negative Aspects of Ghana Tariff Model

Positive	Negative
<p>In traditional urban areas sanitation provision is primarily through public toilets (50% pop.). Primarily operated in business districts, high and middle income areas</p> <p>Public toilets offer a viable business model to service providers and increases access to sanitation facilities</p> <p>The spread of public toilets in Ghana has attracted a range of private sector providers and is viewed as attractive profitable ventures</p> <p>Encourages decentralized local ownership by service providers; provides healthy competition (tariffs and levels of services)</p> <p>Charges easy to understand and simple to pay (users). Alternative service providers available; users can register their level of satisfaction if service is sub-standard</p> <p>Preliminary reflections from this study suggest that this has been coupled with improved levels of services and offers some key lessons on service expansion in low income areas</p> <p>Increased confidence in the profitability of this type of business by private sector operators leads to increased willingness to invest.</p> <p>Although service providers are poorly regulated and there is great variation in pricing, it should be noted that there is an informal price ceiling</p>	<p>Facilities are located far away and therefore not always convenient for users especially women and children</p> <p>Very little evidence on user perceptions beyond the scope of study affirming suitability and affordability of public toilets</p> <p>Discussions from stakeholders' workshop suggest that this is an expensive option for low-income groups</p> <p>Access to land (due to high cost) to build toilets in urban, low-income and high density areas is a challenge</p> <p>While minimal regulations on public toilets have a number of benefits, it leads to excessive charges by some service providers.</p> <p>Mix of fully regulated/licensed toilets, partly regulated and un-regulated toilets in urban areas leads to continuous debate on the ownership of assets, operational responsibilities and tariffs .</p> <p>Similar to Kenya and Senegal, there is limited and irregular consultation on fixing the sanitation tariffs for public toilets. In some cases, regular users arrange a system of 'use now pay later' system for these facilities</p>

1. In contrast to Kenya, in Ghana the toilet operators also own the assets. Some stakeholders see this as handing over more power to the service providers.

2.4 Kenya

Review of Tariff Model

In urban Kenya, institutional sanitation tariffs exist with water and sewerage utilities and mainly attached with the sewerage systems. Tariffs are dependent on the rate of water consumption, charged for connection and regular operational charges which users are expected to pay for sewerage connections.

A regulatory institution, the Water Services Regulatory Board (WASREB), approves regulated water and sanitation tariffs in Kenya and, amongst other functions, it is responsible for developing tariff guidelines for the provision of water & sanitation services nationwide. These guidelines provide the basis upon which water and sanitation tariffs are determined, reviewed, approved and adjusted over time.

WASREB has tried to strike a balance between commercial, social and ecological interest to enable access by all for services as well as living space for Water Service Boards (WSBs) and Water and Sanitation Programs (WSPs) to make a business case by recovering justified investment costs. For example, to recover operation, maintenance and expansion costs of the public sewer network in Nairobi, the Nairobi Water and Sewerage Company (NCWSC) levies a conservancy tariff which is set at 75% on all user category connections. It follows that, in the reference month, total water and sewerage bill for that household will be US\$20.

NCWSC also charges tariffs for connection into their public sewer networks in Nairobi, just like any other water and sewerage company elsewhere in the country. Additionally, there are disposal tariffs for mechanical emptiers of septic tanks and pit latrines in order to access NCWSC waste water treatment activated stabilization lagoons.

In Kenya, other scenarios exist where the above tariffs may not apply. For instance, in Nairobi city those tariffs may not fully be

enforced in the informal settlements where the majority of the urban population lives. On sanitation, the utility carries out the connection of all community ablution blocks into the nearby public sewer lines where connection tariffs are charged as well as regular monthly charges depending on amount of water used to flush out the human waste.

Table 5 Positive and Negative Aspects of Kenya's Tariff Model

Positive	Negative
<p>NWSC has adopted a number of good business principles and customer friendly approaches - ease of payment, regular issuing of receipts and a collection efficiency of 79%.</p> <p>NWSC has a published policy on sewerage and pit emptying and provides sewerage connection if technical considerations are favourable.</p> <p>Although sewerage networks have a high investment cost, the operational and maintenance cost of sewerage systems reduces with an increasing number of customers; promotion of sewerage system across the city also reduces cost of pit emptying.</p> <p>Small scale service providers very much involved in pit-emptying and serve across the entire city. The market opportunities for small scale service providers are not restricted in the pit emptying business.</p> <p>Small scale service providers are not harassed and declared illegal; the NWSC and small scale service providers offer lower and pro-poor rates in pit emptying.</p> <p>Sewerage systems, and its link with the tariffs, provide incentive to households to acquire water connections.</p>	<p>The preferred technology for urban Kenya is sewerage systems which may not be suitable for many low income areas; less than 50% of the population is served in Nairobi.</p> <p>Challenges with conventional sewerage - right to land and accessible roads – are faced by the majority of low income residents who live on land which is not owned by them</p> <p>A number of low income residents purchase water from unofficial sources and are therefore not eligible for sewerage connections; low-income households are only able to connect if a sewer has been laid nearby.</p> <p>Sources of water for the poor are different and are more expensive, so the poor consumes less water and are not ready to use this for flushing toilets.</p> <p>Nairobi is a water scarce area and sewerage systems depend on availability of enough water.</p>

2.5 Mozambique

Review of Tariff Model

One of the main problems in major urban centres in Mozambique e.g. Maputo, Quelimane, is the absence of formalized provision of integrated sanitation services, particularly in predominantly low-income *bairros* or peri-urban settlements. The nature of the supply chains and service chains are unclear and it is primarily up to the household to make arrangements for procuring and servicing latrines. A number of NGO-related activities are underway, for example through WaterAid and its local NGO/community-based partners who are providing subsidized latrines in collaboration with the local representatives of the neighbourhoods.

The emptying of latrine pits and tanks is carried out by a number of small-scale private operators; there is also a local NGO (ADASBU) in Maputo that is supported by WaterAid. Some innovations have been made in water supply to consumers in *bairros*; these have been achieved largely as a result of excellent cooperation between the regulatory authority (CRA), Aguas de Mozambique (the owner of the assets), FIPAG (the implementing agency), facilitating NGOs (WaterAid partners) and the communities. This has resulted in the extension of piped networks to settlements that are not covered by the utility network and the provision of community-managed water kiosks.

The regulatory body (CRA) has applied a pro-poor tariff structure that is soundly based on the ability to pay. CRA spearheaded identification of specific needs of the urban poor, through beneficiary assessment studies and service mapping. The critical areas of low service were identified, and monitored, and some of the key performance targets for the urban water service providers encouraged improvement of cost recovery so as to invest into service extension. In 2010, the tariff structure was redesigned to make it more pro-poor. Prior to the new tariff structure, all water service connections had a minimum fee charge attached to them for the first 10m³ per

month, irrespective of whether users consumed less. Minimum consumption was halved to 5m³ per household per month, and the minimum charge reduced by 25%, to US\$4.5 per household per month. This payment translates to 5% of the income of a family living at US\$0.5 per day. Other changes effected by the regulator to make water services more accessible to the urban poor include:

- House connections do not require proof of land tenure;
- Families with higher incomes cross-subsidise the poor;
- All appropriate options of service delivery are being explored, such as reselling by households;
- The connection charges are cross-subsidised between rich and poor households;
- Poor households are given the option to pay the connection costs in instalments; and
- Various payment options are being encouraged, rather than relying on only monthly payments.

It appears that a similar partnership needs to be defined and worked out in order to address the lack of *sanitation services*. The Municipality has a key institutional role, but has proved problematic to work with. A more promising approach could be to develop the partnership around more localised municipal districts such as exist in Maputo.² This provides a more localised base for initiatives that could attempt to facilitate partnership with: local suppliers of material for latrine construction; a technical advisory service (for example on latrine design and costing); and coordination of emptying services. There is a need to ensure a regulatory role is in place, for example concerning the adequate transport and disposal of latrine contents.

Table 6

Positive and Negative Aspects of Mozambique's Tariff Model

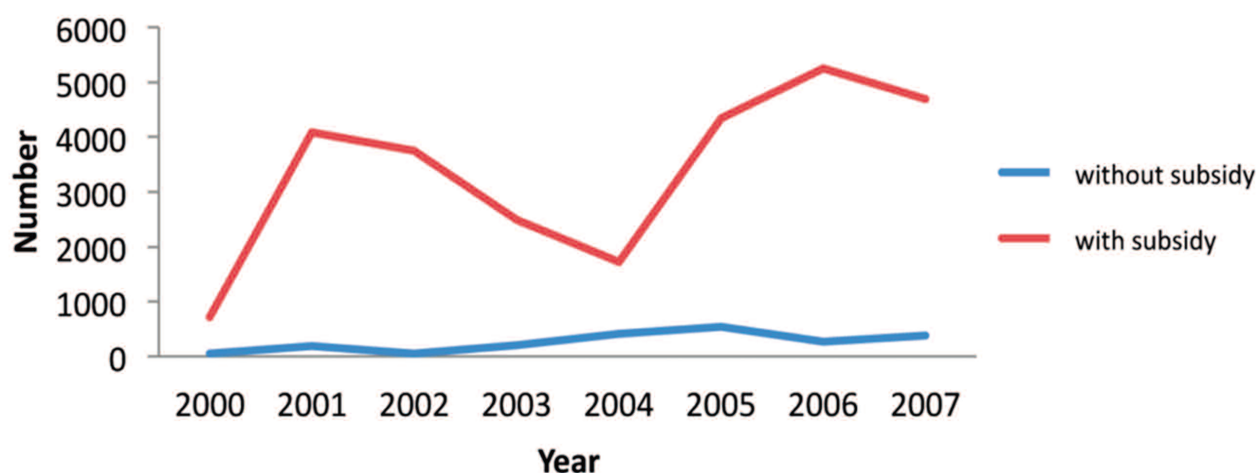
Positive	Negative
<p>4 types of sanitation technologies are commonly used – traditional latrines (costs US\$4.5-22.5); public toilets/latrines; community sanitary blocks; and flushing toilets (costs US\$505.6).</p> <p>Currently, international development agencies are playing the biggest role in sanitation investments in the country.</p> <p>Existing entrepreneurs/CBOs in the bairros with experience in providing sanitation services.</p> <p>Sanitation is high on policy agenda for the government with water sector reform policy that endorses private sector participation.</p>	<p>No government agency with a clear mandate to lead the policy development and planning sanitation and hygiene promotion.</p> <p>No evidence involvement of any government institution in any regulatory activities for providing sanitation services to the bairros, in terms of service standards or pricing.</p> <p>86% of the funds committed in the sanitation sub-sector was provided through Overseas Development Assistance. This is likely to be a further constraint on the rapid expansion of urban sanitation coverage.</p> <p>The only public sewage treatment plant in Maputo does not operate optimally, supposedly mainly because of inadequate funding</p> <p>Service providers are not registered, and they do not speak with one voice.</p> <p>Difficulties in levying charges due to the separation of functions for water and sewerage services.</p>

2.6 Senegal

Review of Tariff Model

Research carried out in Cambrène, Dakar, Senegal in 2011 shows that subscribers spend respectively US\$804 and US\$40 for ordinary/normal and subsidized connections and combined sewerage systems (newspaper "Le Soleil", June 6, 2006). The subsidised option is an ONAS-led initiative which takes into account the incomes of people in accessing sanitation. The study reveals that a private facility (pit for sludge management) cost US\$486/household.

Figure 4: Connection to ONAS networks



Statistics from PEPAM, 2005 provide the following costs in rural areas: (i) US\$338 for a human waste disposal facility (ii) US\$105 for each washing basin (iii) US\$8465 for a standard public convenience/toilet. However, a study commissioned by Eau Vive in 2010 and conducted by a firm called CIME-Sarl states that a private sanitation facility exceeds US\$432. Costs needed for the construction materials and the transport account for 60% and 15% of the total latrine costs. As part of the PEPAM, the following subsidy mechanism was set up to ease communities' access to facilities: (i) household's contribution is 10 % for private facilities, (ii) rural communities provide 10 % of the total costs for a public convenience (investment resources provided by government plus communal/local budgets), (iii) the other 80% are secured by the government and partners.

In Dakar in 2006, 35% households were using mechanical means to empty their pits as opposed to 65% using hands for an amount ranging between US\$12 and US\$84 depending on the depth of the pit which is 12m³ in average (Alioune, 2006). Sludge is disposed of/dumped by private operators in ONAS treatment plant which collects a fee from them. It should be noted that the unlawful dumping remains a commonplace practice by those who manually empty the pits/tanks.

For collective sanitation, a fee of 5% to 10% is systematically added to the water bill, whether subscribers are connected to the sanitation network or not. This system does not favour owners of on-site sanitation systems who ultimately pay for a service that they do not have access to.

Table 7 Positive and Negative Aspects of Senegal's Tariff Model

Positive	Negative
<p>Tariffs have played a key role in improving the access, especially to previously unserved areas in urban areas in Senegal. ONAS offers a subsidized cost for the low income customers to connect to the network. ONAS is a non-profit making organization, though it does not mean that it has the capacity and systems to reach a scale. ONAS operates a treatment plant and generates an income from the sale of treated effluent. In addition, treated and dried sludge is sold to market gardeners for a unit price and this enables ONAS to provide for 40% of its energy. This aspect of cost recovery is unique and may provide a model to other countries. Mechanical pit emptying services have clearly defined tariff structure and depend on the volume.</p>	<p>Similar to Kenya and Ghana, lack of public consultation and engagement with the service providers is common in Senegal; service providers fix prices with lack of user consultations. Local authorities are not directly involved in fixing or setting sanitation prices and tariffs. Similar to Kenya, sanitation scaling-up is somehow seen as the vision of success of the utility and tariff and price setting done for the sole aim of balancing finances.</p>

3. Policy and Practice – Points for Further Discussion

The information here is presented as points for which further discussion is required at country and regional levels.

3.1 Burkina Faso

ONEA rolls out a subsidy programme for which it covers 30-40% of the total cost of vents and pit latrine slabs and 100% for the equipping of all primary schools in Ouagadougou with VIP latrines. The important debate is on the role of subsidy, *how much, how and on what components?*

Nationally, investment in the area of wastewater and excreta is heavily dependent on external funding sources. *Does it create dependency or help the sector on the pathway to development?*

The investment costs for individual wastewater and excreta facilities depend on technology used, for e.g. manual flush toilets and septic tanks are 4 to 15 times more expensive than traditional latrine; the cost of connecting to the sewerage system is about three times lower than the cost of constructing septic tank and is on the average equivalent to an average investment cost for the construction of improved latrines.

There exists an absence of clearly defined short and medium-term expenditure framework for sanitation necessitating a piecemeal approach on sanitation issues by the government.

The municipal budget share that goes to sanitation and its role is relatively low.

Bilateral and multilateral cooperation provides a contribution of over 90% to the implementation of the PN-AEPA.

Absence of treatment plants necessitates the sale of fresh sludge to gardeners and farmers at the rate of

US\$31.5-42.0 per 10m³.

National sanitation strategies and plan that clearly delineates the roles and responsibilities of all stakeholders including private operators, artisans, civil societies, etc. and sets objectives, financial resources required and the funding mechanisms are required.

Establishment by the State of an Industrial Pollution Control Fund (FODEPI) to encourage manufacturers to connect to the public sewerage system in the cities of Ouagadougou and Bobo-Dioulasso after complying with the standards for discharging effluents into sewage treatment plants.

Although the revenue from the sanitation tax (levied on water bills) is insufficient to self-manage the sector of wastewater and excreta, it can be improved taking into account the actual capacity of households to sustainably pay for these services.

Existence of an annual review of the sector and a platform for dialogue for the stakeholders involved in the management of wastewater and excreta services.

The existence and the application by ONEA of a «sanitation fee» to all subscribers to finance activities under the Sanitation Strategic Plan and the PN-AEP for the urban population; with this mechanism, charges on drinking water can be used to subsidize wastewater and excreta services, namely latrine campaigns in households and the maintenance of collective sanitation facilities in the cities of Ouagadougou and Bobo-Dioulasso.

The propensity of emptying operators to dispose of the sludge drained on informal sites rather than in treatment plants where they exist, like in the case of Ouagadougou and Bobo-Dioulasso. Such practices, which go against environmental texts and the “polluter pays principle”, are unfortunately common and persist because operator wants to avoid paying the unloading tax at the ONEA sludge treatment plant. *How can more*

incentives/ controls be created?

At the national level, only one out of five households have an improved individual sanitation system. The costs of the acquisition of these technologies remain prohibitive for households with more than six in ten below the poverty line. For example, the construction of an improved latrine requires more than eight times the minimum monthly wage or close to three months' average wage for a household head in Burkina Faso. A septic tank requires the equivalent of 10 months of an average wage or 25 months of the minimum wage.

3.2 Cameroon

Work undertaken by MAETUR, MAGZI³ and SIC receives financial support from CFC which is a semi-public institution and a funding tool in support of the government housing policy. CFC resources come from workers from the formal/structured public and private sector registered at the National Security Fund of Cameroon.

Inadequate use of latrines: only 22% households use their latrines for the exclusive disposal of their faeces and urine as opposed to 78% who use them as bathrooms.

Increasing number of some households (3 to 5%) putting dangerous, and/or non-biodegradable substances into the traditional latrines e.g. stones, metal and plastic items, glass.

Few urban households have access to improved wastewater and excreta management services due to exorbitant construction costs and land insecurity in the slums (nearly two-thirds of urban households use rudimentary latrines).

Ignorance of and non-compliance with the design, implementation and maintenance requirements of facilities by artisans with no training. These gaps account for the poor functioning of the facilities on the ground and subsequently, the disposal of untreated waste water in the open.

In general, these latrines are poorly constructed due to a lack of control and

improper usage – users use the two pits at the same time.

There are very few artisans with the necessary skills to produce these latrine parts and the scale up of this technique is a challenge.

Sustainable management of sludge in Cameroon cities is a serious concern: no city has a system for treating sludge, annual quantity of which range from 400,000 to 600,000 m³ respectively in Yaoundé and Douala.

Common practices which include providing the pits with "special pipes" used during raining periods to directly discharge the overflow into lakes, streams, rainwater gutters etc.

In slum areas, small artisans and members of a given household undertake manual pit emptying. These players work under poor security and hygiene conditions.

In general, there is no public funding for managing wastewater and faeces in Cameroon.

For financing improved private sanitation facilities and promoting, disseminating improved sanitation system, subsidies worth US\$130-175/household (in cities beyond 50 000 people) and US\$ 35-45/household (for cities under 50,000 people) will be put in place for all urban «poor» households. The total amount of the estimated subsidy which will be US\$250 million in 2020 is about 36.7% of total investment over this period. For public institutions site sanitation, public sanitation and disposal sites, the government of Cameroon intends to cover all investment costs. It is also committed to fully fund the creation of demand for sanitation facilities as well as technical assistance and training of artisans and the sector NGOs.

A financing plan for the sanitation programme will be established through a «Sanitation fund» worth US\$595 million that will be covered by 8.25% by user fees and paid directly to companies building private sanitation facilities, 21.75% by the budget of the government of Cameroon and 70.00% by donors.

The decentralization process initiated in

2004 involves the transfer of duties on urban sanitation to local authorities. These local authorities are now the owners, prime contractors and regulators of sanitation services in the respective areas. However, the modalities for the transfer of skills and technical and financial resources have not been specified since the adoption of the decentralization policy. This gap leads to failure to meet obligations in the O&M of community wastewater and excreta facilities in urban Cameroon.

There is indeed a sanitation market in the urban areas of Cameroon. For the next ten years (2020), the government is designing a national strategy for the development of wastewater and excreta collection in urban and rural areas. This strategy proposes to increase national coverage from 34% in 2010 to 57% by 2020, through better access to improved sanitation facilities for households with subsidies from the State. Such a forecast will require construction of approximately 1,100,000 additional facilities, including 550,000 units for households in cities. In addition to these facilities in households, an estimated 9,000 facilities will be constructed for public institutions (including 6,000 in schools).

3.3 Ghana

User consultation and engagement with the service providers came out as the key policy issues to take forward. The current tariffs paid for the operational cost, including workers salaries, generate a profit but may not be enough to pay for treatment of the effluent and in some cases regular maintenance of the facility. What cost components a tariff should include is an important policy-practice debate.

Location was stressed as one of the issues that affect patronage, for example highly populated areas need more facilities than areas with smaller populations.

Again, the social class of the people in a locality also has an effect on patronage. In high class areas, every house may have toilet facilities hence there will be little or no need for public toilets whe-

reas the opposite may be true in low class areas where majority of the houses may not have the toilet facilities.

If accessible financing is available to build further the current model of public toilets, it needs to focus on increasing the number of public toilets, improving the system of their maintenance, acquisition and provision of subsidized land for their construction, rehabilitation of existing toilets in low income areas and capacity building of operators to reach the un-served areas.

3.4 Kenya

An average of 50% of the urban population in Kenya lives in low income areas. NWSC is working towards expanding sewerage network. A pilot project is underway to adopt the use of PVC pipes to convey sewer from toilets and ablution blocks to main trunk sewer lines. Based on the evidence from the pilot project, policy and practice changes are needed to enable low income residents to connect to the sewerage system. A discussion on this aspect is crucial in bringing more people on the sanitation tariff ladder.

There is currently no separate sanitation tariff for people living in low income areas. The tariff is based on the consumption of water, where many poor people do not have a metered water connection. Encouraging sewerage connections must go hand in hand with the promotion of low water consumption technologies, to flush the toilets but also to carry the solids in small diameter sewerage system. Research and changes in policy and practice could play a crucial role in this.

Though public toilet systems are not very common in urban areas of Kenya, they exist in the Central Business District (CBD) and in some low income areas. The maximum tariff for public toilets is fixed by the Nairobi City Council. The toilets are operated by registered companies or NGOs, though in many cases they do not invest their own money to construct the infrastructure. Toilet operators signed



an agreement with the Nairobi City Central Business District Association (NCCBDA). Public toilets are successful in urban Nairobi because there is a clear business model available to the operators and donors are available to fund their construction.

In some cases, intermediaries play a role in extending the provision of services to low income areas. For example, NGOs like Umande trust attract investments, negotiate the location, land and construction with the community and operate the service. They market the service, collect the money and pay charges to the government. In this way, users of the service are linked with the service providers. Service operators, such as owners of the public toilets face a number of challenges, such as availability of water and emptying/ discharge of wastewater and solid sludge.

To expand the technology options and allow connection fees to be paid in instalments. Appropriate technologies to empty pits are also needed and technologies such as biogas toilets need to be developed, promoted and maintained.

Tariff fixing process does not take into account users' ability to pay and users are not consulted on the setting of tariffs. Pit emptying has a pro-poor tariff of Ksh 4000 per trip.

3.5 Mozambique

The process for setting tariffs has not been well elaborated by most service providers. According to representatives of the Association for the Development of Water and Sanitation in Urbanização Quarter (ADASBU), they usually carry out a cost analysis prior to fixing the charges. Consultations are not carried out with customers nor the municipal authority (or any other government agency). The most determining factor of charges is the price of fuel.

None of the service providers gave an elaborate pricing plan for the charges levied. However, accounts obtained for ADSBU operations in 2006 gives a picture of the proportions of costs incurred by them in providing the service. It shows that about 20% of the costs went into the purchase of fuel and lubricants, 30% were for maintenance, while 50% was spent on staff costs

In order for private entrepreneurs to flourish in the market of providing sanitation services, there must be willing buyers of the service.

There is the issues of household's low capacity to pay for capital costs of sanitation facilities.

In Maputo, the government agencies responsible for sanitation do not have a willingness to charge for sanitation services, allegedly because of the poor level of services.

There are proposals to impose a sanitation tax on all consumers of water that are consuming at least 10 m³ per month, which would be billed and collected along with water bills.

There is a good model of a public private partnership for managing solid waste management in Maputo, which could be adapted for faecal sludge emptying. Community-based organisations and private micro-entrepreneurs are contracted to carry out primary solid

waste collection in the *bairros*, while MCMC deals with the secondary storage, transportation and disposal of the garbage.

3.6 Senegal

Recognizing the challenges, several studies are underway to find appropriate solutions to sanitation. It is important to learn from these studies.

A study of tariffs to define a new tariff system to ensure the financial balance of ONAS and ensure greater equity in access to collective, semi-collective and on-site sanitation services is underway. In addition, since 2009, a feasibility study for a 3rd generation reform for full concession is in progress.

However, the management of the sludge emptying sector in the cities of Senegal remains on the margin, because these studies in question do not include this component, which remains however very important in the provision of services. Over 45% of the population of Dakar use on-site sanitation.

4. Conclusion

The setting of tariffs and subsequent scale-up remains a major challenge for low-income areas in some countries in Africa. Current tariff systems lack sustainable short, medium to long-term financing mechanisms, are poorly or not regulated, unable to meet the demand of growing populations, and inappropriate for on-site sanitation facilities. With respect to the sanitation value chain, insufficient measures exist to address the issue of transport and even less for treatment and reuse of wastewater and excreta. Of the six countries selected for this study, only two have pro-poor tariffs that address issues such as affordability and accessibility - Burkina Faso and Senegal; however, these have not been taken to scale.

This study also concludes that sanitation ser-

ices in urban areas are in demand but have been neglected in many developing countries, with the lack of clear institutional roles and responsibilities and successful business models. The technologies for urban sanitation are limited and only benefit certain sections of the population. While some effort has been made in improving urban sanitation, it is not benefitting the low income areas. Especially, emptying, transportation and disposal of faecal sludge, leading to reverting back to open defecation. Households in low income areas largely rely on un-regulated and poor quality services. Recovery of resources in the form of biogas and sale of treated effluent could offset cost of sanitation provision. With the exception of Dakar, this has not been utilised fully in any of the other research cities. Recognizing this, specific areas of policy and practice have been identified.

Tariff is central to access to sanitation services, scale up and sustainability and therefore could be harnessed as an instrument to address numerous challenges within the sanitation sector. Sanitation tariff reform is inevitable in order to ensure longer-term cost recovery and profit thereby improving financial performance of sanitation firms and enterprises. But to ensure a successful system, it is important to involve service recipients at every stage.

Sanitation has received some political attention recently. In some countries, governments are beginning to accept some responsibilities. It is important to emphasise that government must not act as the service providers but create space for other actors to play a role, especially the private sector.

In some countries regulatory instruments are used to promote sanitation and enforce tariffs. These measures are only effective if the institutions have the capacity to enforce and citizens accept those institutional pressures.

Sanitation in urban informal settlements is also constrained by certain structural causes, such as land ownership, official status of citizens, corruption and lack of accountability and in some cases pressure of external donors. The nature of these

constraints may vary in each case, but it is important that research and capacity building is done on how to overcome these structural causes.



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