Engaging with the Private Sector for Urban Onsite Sanitation Services

Lessons from six sub-Saharan African cities

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EXECUTIVE SUMMARY

The BMGF and DFID Partnership Cities Project: an initiative to address the challenges of onsite sanitation services for the urban poor

In sub-Saharan Africa (SSA), over 300 million people use unimproved sanitation facilities (JMP 2017). The rapid pace of urbanization experienced across the continent poses a key challenge to urban authorities, who often struggle to match the rate of expansion with increased services. The extent of networked, and often poorly performing sewerage services is very limited in many African cities, with only around 9% of the urban population connected in SSA. Onsite sanitation prevails, particularly in low-income areas.

Onsite sanitation is often deemed in sector policy to be a 'private' rather than a 'public' good. Households are therefore generally expected to invest in their own facilities, often with limited attention from governments on associated services, such as emptying, transport and treatment of fecal sludge (FS). Another common challenge is that governments do not consider pit toilets, which are widespread in many cities, to be an acceptable solution for urban areas. Fecal Sludge Management (FSM) in many African cities is characterized by unregulated private operators, poor quality services, particularly for low-income areas, and a lack of investment in infrastructure across the sanitation value chain.

In 2013, the Bill & Melinda Gates Foundation (BMGF) and the Department for International Development of the UK Government (DfID) launched the Partnership Cities Project. This project sought to find solutions to sustainable onsite sanitation services, aiming to support investments in infrastructure, build partnerships between key actors at city-level, and showcase new service delivery models. The Project aimed to develop private sector participation (PSP) through contractual arrangements between private entities and the relevant service authority at different segments of the sanitation value chain. As of December 2017, the Partnership contributed to funding 11 FSM initiatives in SSA and South Asia. In SSA, the Partnership was implemented in Accra (Ghana), Dakar (Senegal), Blantyre (Malawi), Durban (South Africa), Freetown (Sierra Leone) and Kampala (Uganda).

The Partnerships project was initially designed to run until 2017 and, to date, each city has developed valuable experiences and learnings on the design and implementation of onsite sanitation programs involving the private sector. This report presents the findings from a rapid review of the six BMGF/DfID-funded projects implemented in SSA, with a focus on experiences of engaging and contracting the private sector for FSM services. This review also assesses some of the outcomes with regards to sustainable and inclusive service provision and extracts broader lessons for future project and Public-Private Partnership (PPP) design for onsite sanitation services.

City contexts: a range of socio-economic contexts, but common FSM challenges, and predominant (de facto) private-led service delivery model

The six projects in SSA were implemented against the backdrop of different city (and country) contexts that influenced their design as well as their outcomes. The cities are a mixture of higher income contexts (Durban) and those that sit within some of the world's poorest countries (Blantyre and Freetown). Low socio-economic development is also mirrored by low public-sector capacity. FSM was a major issue in all of the cities, although receiving limited attention from public authorities. The percentage of the population accessing networked sewerage services ranged from 57% in Durban down to just 1% in Freetown. Low income households often could not access safe emptying services, due to various physical and financial barriers. Unhygienic manual emptying services were widespread. Few cities had treatment facilities specifically designed to receive FS, and those that did were in varying states of disrepair. Despite these widespread challenges, FSM was given limited

attention by politicians and was often chronically under-resourced in terms of public expenditure. The service authorities (generally municipal authorities, except for Dakar) had varying degrees of involvement in direct and indirect FSM service provision along the sanitation value chain.

In most cities, onsite sanitation emptying services were predominantly provided by private entities. Private service providers included individuals, registered and unregistered companies delivering emptying and transport services, as well as public toilets services. Private emptying services were either mechanized (vacuum trucks), or manual services. Common challenges in emptying service delivery included poor road infrastructure, poor assets conditions (requiring frequent repairs) and limited private sector access to finance to upgrade equipment or scale-up services.

Projects sought to strengthen the enabling environment for private sector-led FSM services

The projects embedded activities to build the foundations for sustainable PSP and PPPs in onsite sanitation services. Efforts to build public sector capacity for PSP and PPPs varied. Examples included:

- Undertaking studies to build the evidence-base to plan for and outsource FSM services: These studies have been a catalyst in providing data on which to plan and budget and in raising FSM issues onto the sector agenda. Stakeholder exchange visits also helped raise understanding and engagement of city stakeholders on FSM issues.
- Hosting workshops to bring public and private sector stakeholders together, to strengthen dialogue and trust and increase technical capacity (e.g. training on FSM standards).

However, aside from Freetown, few projects deliberately sought to strengthen the service authority's capacity in areas relating to their role in potential PPPs in FSM, including issues such as procurement, contract management, monitoring and enforcement.

Projects also developed standards for urban sanitation services as part of efforts to improve regulation and increase operators' accountability. However, the extent to which these standards are adopted and enforced varies in practice. In some cities, service authorities adopted a gradual approach to standards enforcement: for example, in Freetown and Kampala, the city authorities decided to develop trust with private sector operators, before progressively formalizing relations into operating licenses.

Efforts were made to improve services at all steps of the sanitation value chain

Two projects focused on public toilets, with Blantyre getting to the stage of contracting out operations to the private sector. In Blantyre grant funds were used to rehabilitate and construct toilets to a standard which customers would be willing to pay for. Consultations were undertaken with communities and local leaders to increase customer willingness to pay and political acceptance of privately-run, pay-for-use toilets.

The '*emptyability*' of domestic toilets is a key challenge in some areas and projects took different approaches to overcome this. Media awareness campaigns were used in three of the cities to inform customers of the problems of putting solid waste into pits. In addition, in Blantyre, local masons were trained on construction of (emptyable) toilets. However there has been relatively limited engagement in strengthening sanitary inspections and building control inspections to enforce toilet standards, or indeed to provide technical guidance to households on toilet designs.

Efforts were made to support the growth of emptying and transport businesses through trainings, introduction of appropriate technologies, Business Development Support (BDS) and facilitating access to credit. In Dakar, a loan guarantee fund for truck operators was established. In Freetown, BDS was provided to truck operators to increase their creditworthiness and help with their loan

applications. However, in some cases, as in Blantyre and Freetown, access to credit remains a challenge. Other types of support emerged: in Blantyre, a leasing model was adopted for the operation of a small toilet emptying facility. In Kampala, BDS is helping private operators to reach the requirements of public procurement, to enable PPPs in future.

Call centers were also established to improve service regulation. Such call centers were established in Dakar, Kampala and Freetown, with the aim to ease customer access to service providers, reduce costs through competition and allow service authorities to track the quality of services provided. In Kampala and Dakar, customer prices through the call center fell by 10-20%, although in Dakar only 10% of emptying services were requested through the call center.

Durban is the only city fully subsidizing emptying services. The municipality contracted emptying services for 50,000 Urine Diversion Toilets (UDTs) installed in low-income areas. Whilst this is a clear example of targeted public funding for pro-poor FSM services, it is based on a legal framework which guarantees the right to free basic services, which is often lacking in other countries.

Projects also invested in treatment and re-use technologies. In Accra, the grantee led the construction of a FSTP with the capacity to produce 500 tons of FS-based compost and supported the design and roll-out of a marketing strategy for these by-products. In Dakar, the project included the rehabilitation of three FSTP under a concession agreement with a private operator, as well as the introduction of an innovative treatment and valorization technology (the Omni Processor). Finally, in Durban, eThekwini aimed to use the Black Soldier Fly (BSF) technology to transform waste into useful end-products. As of October 2017, the concession to rehabilitate and manage the existing FSTPs was ongoing, whilst the waste conversion processes in Accra and Durban had just started operating.

To date four service authorities succeeded in designing and awarding PPP contracts

Contracts with the private sector have been awarded in Accra, Blantyre, Dakar and Durban. Whilst the contract for the FSTP in Dakar and the toilet emptying contract in Durban had been running for some time prior to the review, the contracts for treatment and re-use in Durban and Accra had just started. Contracts for public toilet management and the lease of toilet emptying equipment in Blantyre were recently signed, but had not started operation.

A range of PPP models were introduced in the cities. Five out of seven contracts tendered the management of public infrastructure through management, lease, or concession models. The project in Accra opted for a joint venture model, whereby the assets are jointly owned by the private and public sectors. The Durban emptying contract was a service contract, providing services using their own assets against the municipality's payment. This contract transferred the least risk (since all remuneration came from transfers from eThekwini), while by contrast the contracts in Accra and Dakar transferred the largest share of risk to the private sector, since operators were fully in charge of all operations and maintenance costs and expected to be remunerated through tariffs and FS bi-product sales. Grant and public funds were used to '*de-risk*' contracts through funding the initial capital investments to establish treatment facilities or construct public toilets.

Contracts were awarded either based on open tenders or through negotiated procedures. The procurement periods were generally lengthy (seven to 11 months), reflecting the need for protracted negotiations and the innovative nature of these contracts both for the public and private sectors.

Overall assessment: are contracts delivering service level improvements, pro-poor and sustainable services?

Many of the initiatives are still in their early stages, therefore it is too early to assess the improvements brought about by the PSP and PPPs. Data is also sometimes lacking, which calls for improving project monitoring systems in the future.

Preliminary results indicate that contracts for treatment services have contributed to increasing service levels. In Dakar there has been considerable increases in volumes of FS being delivered to the treatment facilities, suggesting a decrease in illegal disposal. In Accra, where the FSTP started operations a few months ago, 100% of sludge delivered is effectively treated. In Durban the emptying contractor has emptied around 12,000 household toilets.

There is good potential for the initiatives to improve service levels for containment, emptying and transport, although such improvements will be partially dependent on the adoption and enforcement of standards, which is not yet guaranteed. Projects in Freetown, Kampala and Dakar aim to increase the access to (and affordability of) vacuum truck services and improve the quality of such services. Blantyre and Freetown have introduced technologies (such as the Mobile Desludging Unit - MDU, and Gulper) with the aim of improving the quality of emptying services in hard to reach locations. Factors that have contributed to improving service levels across the value chain include:

- Capital investments in infrastructure by the public sector;
- Operational efficiencies brought in by the private sector. In Dakar, the company was able to increase overall net profits by 236% four years after the contract start; and
- Clear outputs as laid out in contracts, forming the basis for remuneration, such as in Durban.

Aside from Durban, there is limited evidence that services developed have benefited poor households directly. As projects did not seek to capture their specific results in developing inclusive services, the review had limited data on outcomes on poor households to analyze. Only two contracts (Blantyre MDU lease, and Durban UDT emptying) sought to develop services specifically tailored to the needs of the poor. Whilst most projects primarily sought to improve vacuum truck emptying services, few projects included efforts to research and build on services that currently target poor areas. Freetown is an exception, where manual pit emptiers were supported to provide higher quality of services in their communities; however the lack of public infrastructure (transfer stations) undermines these efforts for service improvements.

Where contracts have got successfully underway, they have enabled the development of a sustainable approach to urban sanitation service provision, although a more robust financial assessment would be required to assert sustainability. Private sector appetite for further contracts with service authorities, in Accra and Dakar especially, indicate that FSTPs can generate attractive revenues. However, it is premature to review sustainability of the various initiatives at this early stage.

There has been limited leverage of private investments for capital costs of public infrastructure to date. However, the private sector in Accra and Dakar are carrying substantial risk and have contributed working capital. It is anticipated however that once the business models are ‘proven’ there would be replication with greater private sector investments in future.

Lessons on engaging the private sector for urban sanitation services

The BMGF/DfID Partnership Cities Project has demonstrated that the private sector can be successfully attracted to deliver urban onsite sanitation services under PPP arrangements with service authorities. Experiences from these six cities show that opportunities in onsite sanitation

services can attract well-organized Small and Medium Enterprises (SMEs), able to deliver services in a professional and efficient manner. Key ingredients of success include:

- A clear rationale for PPPs and early engagement with potential service providers;
- Careful contract preparation to identify the optimum legal arrangement and risk allocation between contracting parties;
- Flexible procurement arrangements that can be workable with local procurement procedures, which can adapt to the capacity of potential service providers and can address some innovative aspects of sanitation services to be provided.

However, whether services that are contracted lead to direct benefits for the poor remains to be demonstrated. More evidence needs to be gathered and tracked to assess the potential of PPPs to benefit poor urban households. As such, projects seeking to improve services for the poor should embed baseline studies on the situation of services for poor households, establish specific pro-poor targets and identify adequate contractual mechanisms (e.g. financial incentives, clustering service areas of different income levels, etc.) to incentivize the extension of services to poor households.

In cities which have limited experience in PPPs, service authorities require specific support to help them take on their roles as a client, enforcer and enabler. Many of the city councils undertook direct service provision before the projects, and shifting to a role of encouraging and regulating private sector services requires new skills, and a clear strategic direction change by the city authorities.

Introducing PPPs takes time, and foundations need to be laid to ensure they will be viable. The ‘readiness’ of the context is key for PPPs and many actions may be needed to get the sector to a stage where PPPs can be implemented and be viable in the first place. This includes for example getting the private sector to a capacity at which they can take on PPPs; ensuring the public sector has appropriate frameworks to procure and enforce PPPs; and building customer demand to ensure PPP viability.

Beyond contract award, ongoing, cost-effective support to private operators is key for supporting the viability of PPPs. For example, support in demand creation, ensuring availability of enabling infrastructure (such as transfer stations, accessible treatment facilities, etc), or enforcing against alternatives (such as open defecation, illegal sludge dumping, or poor quality emptying services). As public financing for FSM is limited, there is a need to review the cost effectiveness of various actions to support FSM services and find innovative low-cost means to provide such support, to ensure the best targeting of limited resources.

Establishing standards for service levels is an important step, although PSP initiatives should also consider how to ensure standards are monitored and enforced. Such enforcement is key to the viability of private sector viability in FSM; models reliant on top-down enforcement can be augmented by innovative approaches and by community accountability and feedback mechanisms.

Political commitment to ensure FSM services to the poor is not necessarily guaranteed and needs to be strengthened. FSM is often given less political attention than other urban services such as solid waste and the fact that poor communities often reside in informal or ‘illegal’ settlements can be a barrier to service authorities’ engagement. There is a need for governments to consider the public health benefits of investing in on-site sanitation services, to consider the in-equalities of focusing government subsidies only for sewerage services and not for on-site services, and to identify effective means to incentivize services for the poor.

ACRONYMS AND ABBREVIATIONS

BCC	Blantyre City Council
BDS	Business Development Support
BMGF	Bill and Melinda Gates Foundation
BOO	Build Operate Own
BOT	Build Operate Transfer
BSF	Black Soldier Fly
CEO	Chief Executive Officer
CIPA	Country Policy and Institutional Assessment
DfID	UK Department for International Development
FCC	Freetown City Council
FCFA	Central African Franc
FS	Fecal Sludge
FSM	Fecal Sludge Management
FSTP	Fecal sludge treatment plant
GIS	Geographical Information System
GNI	Gross National Income
GPS	Global Positioning System
HDI	Human Development Index
IPA	Innovations Poverty Action
IWMI	International Water Management Institute
JMP	Joint Monitoring Program
JV	Joint Venture
KCCA	Kampala City Council Authority
KII	Key Informant Interview
MDU	Mobile Desludging Unit
MFI	Micro Finance Institution
NGO	Non-Governmental Organisation
ONAS	*Office National de l'Assainissement du Sénégal*
PPP	Public-private partnership
PPPC	Public Private Partnerships Commission
PSP	Private Sector Participation
SDG	Sustainable Development Goals
SFD	Shit Flow Diagram
SLA	Service Level Agreement
SME	Small-Medium Sized Enterprise
SOP	Standard Operating Procedures
SSA	Sub-saharan Africa
TMA	Tema Municipal Assembly
UDT	Urine Diversion Toilets
WSUP	Water & Sanitation for the Urban Poor

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1.1 BACKGROUND

In sub-Saharan Africa (SSA), over 300 million people use unimproved sanitation facilities (JMP 2017). The rapid pace of urbanization experienced across the continent poses a key challenge to urban authorities, who often struggle to match the rate of expansion with the rate of extension of services. The extent of networked, and often poorly performing sewerage services is very limited in many African cities, with only around 9% of the urban population connected in SSA, with onsite sanitation prevailing, particularly in low-income areas.

Onsite sanitation is often deemed in sector policy to be a 'private' rather than a 'public' good. Households are therefore generally expected to invest in their own facilities, often with limited attention paid by governments on associated services, such as emptying, transport and treatment of fecal sludge (FS). In many cities, municipalities do not consider the widely-used pit toilets as acceptable technologies for urban settings. Fecal Sludge Management (FSM) in many African cities is characterized by relatively unregulated private operators, poor quality services particularly for low-income areas, and a lack of investment in infrastructure across the sanitation value chain.

In 2013, BMGF and DFID launched the Partnership Cities Project to find solutions for the sustainable provision of sanitation services to the urban poor. The project focussed specifically on the development of onsite sanitation services, with the aim to transform the sanitation sector by testing and demonstrating how the private sector can work with public entities in delivering sanitation services to the urban poor. The Project aimed to develop private sector participation (PSP) through contractual arrangements between private entities and the relevant service authority at different segments of the sanitation value chain.

In 2013, BMGF/DFID launched a request for Letters of Interest from cities interested in developing and testing models to engage the private sector, to ensure the delivery of equitable, sustainable sanitation services. As of December 2017, the Partnership contributed to funding 11 projects in SSA and South Asia aimed at strengthening and developing private sector-led urban sanitation services. The Partnership also developed a guidance document on how to engage with the private sector through performance-based contracts, tying remuneration with pre-determined outputs, so-called Service Level Agreements (SLAs), between service authorities and private contractor.[1] In SSA, the Partnership supported the implementation of projects in Accra (Ghana), Dakar (Senegal), Blantyre (Malawi), Durban (South Africa), Freetown (Sierra Leone) and Kampala (Uganda).[2] While Blantyre, Durban, Freetown and Kampala benefited from BMGF/DFID grant funding following the call for Letters of Interest, grantees in Accra and Dakar had benefited from BMGF/DFID funding prior to 2013.

1.2 STUDY OBJECTIVES AND METHODOLOGY

This study is a quick review of these urban onsite sanitation projects implemented through BMGF/DFID Partnership Cities. Its main objective is to identify lessons on engaging with the private sector for the delivery of inclusive and sustainable urban sanitation services in the six cities in SSA.

[1] The Guidance document was developed by the consultancy Castalia.

[2] In South Asia, the Partnership is also supporting projects in Chittagong, Faridpur and Khulna in Bangladesh and Warangal and Wai in India.

It is expected that such lessons will help inform future projects design and approaches embedding PSP for urban sanitation. The specific objectives of this study were to understand: The rationale for PSP at the time of projects design; progress made by cities in developing partnerships between public and private actors; the contract modalities that were put in place and the processes of engaging contractors; challenges encountered, enabling factors and bottlenecks to engaging the private sector on FSM services, and finally; projects' outcomes in terms of improved service delivery, leverage of investments, inclusiveness, and sustainability.

The study involved documentation review of each city, and also city visits in Accra, Blantyre, Durban, Freetown and Kampala[3]. The study was undertaken between September and December 2017.

1.3 TERMINOLOGY

This report refers to various concepts such as 'Service Authority', 'Service Provider', the 'Sanitation Value Chain', 'Public Private Partnerships', 'Private Sector Participation (PSP)', and 'Service Level Agreements' (SLAs). Please see Annex 2 for an explanation and examples of these terms, and narrative on how we present them in this report. Of note is that we make a distinction between SLAs and licensing, the former implying a contract between the private and public sector and the latter not requiring a contract, and being applicable to both public and private service providers. Where we refer to SLAs, this is based on the SLA definitions presented in Castalia (2014).

2. CITIES' CONTEXT

2.1 SOCIO-ECONOMIC CONTEXT

The six projects were implemented against the backdrop of different city (and country) contexts that influenced their design as well as their outcomes. The cities are a mixture of higher income contexts (Durban), and those that sit within some of the world's poorest countries (Blantyre and Freetown). Ghana, Senegal and Uganda present similar socio-economic features (Table 1). Rates of urbanization in each city (aside from Durban) are relatively high, and significant proportions of the urban populations live in informal, and often relatively high density settlements.

Low socio-economic development is also mirrored by low government capacity. The 2016 World Bank Country Policy and Institutional Assessment (CPIA), which scores countries' policies and institutional quality (from 0 to 6), indicates that public institutions' capacity in the six countries is highest in Senegal, Uganda and Ghana, while Malawi and Sierra Leone score the lowest.

Table 1: Countries and cities socio-economic and demographic data

Country	HDI (rank /188)	GNI per capita (USD, 2016)	CPIA index (2016)	National urban growth rate	Population (city)
Ghana	0.579 (139)	3,853	3.5	3.4%	Greater Accra*: 2,316,000
Malawi	0.476 (170)	1,056	3.2	4%	Blantyre: 1,100,000**
Senegal	0.494 (162)	2,298	3.8	3.6%	Dakar: 3,653,000
South Africa	0.666 (119)	11,922	n/a	2.3%	Durban: 2,370,000
Sierra Leone	0.420 (179)	1,223	3.2	3.1%	Freetown: 1,029,000
Uganda	0.493 (163)	1,684	3.6	5.3%	Kampala: 2,012,000

*Source: data.worldbank.org and http://hdr.undp.org/; UN 2017; *Authors' estimates based on city council data.*

[3] Dakar was excluded from city visits because the project is well documented.

2.2 SITUATION OF URBAN SANITATION SERVICES AT THE TIME OF PROJECT DESIGN

From the limited baseline data available at city level, it is clear a large proportion of the population relied on unimproved sanitation facilities, with sewerage networks serving only a small proportion of the population. Although open defecation is estimated to be low across all the cities, a large proportion of urban residents relied on unimproved facilities, and in the case of Tema (Accra), 30% of the population relied on public toilets. The majority of cities' residents relied on onsite sanitation technologies, however adequate FSM services and infrastructure was often lacking. The percentage of the population accessing networked sewerage services ranged from 57% in Durban down to just 1% in Freetown. Onsite sanitation prevailed, especially in low income areas. A major challenge across all cities was Fecal Sludge Management (FSM), i.e. the provision of safe emptying, transport and treatment services. Significant proportions of the population in the cities relied on unsafe emptying services, for example with around 50% of the population using manual emptiers in Dakar and Freetown. Table 2 provides an overview of FSM challenges at the time of project design, including on FS treatment facilities.

Table 2: FSM challenges in the six cities at time of projects designs

City	Access to mechanized emptying services	Situation of FS treatment services
Accra (Tema)	No data	Existing FS treatment facility not operational; only 10% of the sludge reaching the FSTP was treated
Blantyre*	53%	Wastewater treatment plants not designed to receive FS, and only a relatively small proportion of FS was delivered to the facilities.
Dakar	48%	Three operational FSTP, but requiring repairs, and insufficient capacity to treat all FS produced
Durban	No data	Specific issue with treating waste from UDTs
Freetown	50%	Non-functional FSTP, high rates of illegal dumping and 'legal' discharge site posed major public health risks to local residents
Kampala	42%*	An estimated 50% of FS was not safely collected and treated*

**Accurate data on emptying services is a challenge in Blantyre, and figures here represent work-in-progress on a SFD for the city.*

2.3 LEGAL AND POLICY CONTEXT

Across all six countries, the responsibility for urban sanitation service provision is clearly allocated to a service authority: to an autonomous state owned national sanitation utility in Senegal (ONAS), and local governments in remainders cities[4]. In case of Kampala there are joint responsibilities between the National Water & Sewerage Cooperation, who is responsible for the sewer systems and all treatment facilities, and the Kampala City Council Authority (KCCA), who is responsible for containment, emptying and transportation. The six countries' national policy context recognizes the need to ensure city-wide and inclusive sanitation services. In Ghana, for example, access to sanitation is a human right, as per Ghana's Constitution. However, with the exception of Dakar and Durban, national aspirations to deliver sanitation services for all have yet to translate into concrete approaches and instruments at decentralized levels. For example, several service authorities provide very limited onsite sanitation services or oversight over service providers. Although policies recognize the critical role the private sector can play in delivering sanitation services, only Durban had prior experience with PPPs for onsite sanitation services.

[4] In Durban it is undertaken by a quazi-utility which is directly under the leadership of the municipality

Photos (left to right): examples of low-income, high density areas in Blantyre and Freetown; existing in-use and poor quality public and domestic toilet facility, Blantyre.

Critically, except in Durban and to a degree in Dakar, sector policy towards financing onsite sanitation services assumes that sanitation is predominantly a "private good", i.e. they should be financed by households. As a result, service authorities perceive sanitation as a source of revenue streams (especially in public finance resource constrained environments), particularly from public toilets' franchising and truck operators' licensing. Although service authorities were generally managing FSTPs, and generally committing some funds to this, albeit often inadequate in amounts. By contrast, in Durban, the policy is to subsidize household facilities and related services for the poorest. A Free Basic Sanitation Implementation Strategy was published in 2009, proposing options to channel public subsidies for ensuring that poor households have access to adequate sanitation.

In all cities, service authorities can legally enter into PPP agreements for the delivery of basic services. In practice, none had procured PPP contracts for onsite sanitation at the time of projects design. In some cities, as in Blantyre, the service authority (the City Council) had never engaged in any PPP agreement in any sector, and clarification was needed from central government before proceeding in contracting through PPPs.

Specific standards and legislation pertaining to FSM services was a common gap. In the majority of cities there were existing bylaws and/or national public health or environmental legislation that touched on aspects of urban sanitation. However, few cities had specific standards or legal instruments adequately covering FSM services across the value chain.

2.4 INSTITUTIONAL ARRANGEMENTS

Service authorities

With the exception of Dakar and Durban, and to an extent in Kampala, and aside from management of FSTPs, service authorities had little or no role in service provision for onsite sanitation services, despite their mandate. Annex 1 presents an overview of the role of service authorities in each city and regulatory mechanisms in place. In most cases the role for service authorities was limited to the provision of (limited) emptying services (often only for institutions) and public toilets. Service authorities often managed the FSTPs, with inadequate investments and operational inefficiencies.

In several cities regulatory oversight over private sector provision is either non-existent or limited. Both Accra and ONAS had a licensing system for vacuum truck operators which enabled some form of oversight over their operations (while protecting operators from rent-seeking behaviors). However, at the time of project design no such licensing existed in Blantyre, Kampala and Freetown.

Service providers

Aside from the management of public toilets and FS treatment plants, , onsite sanitation services were predominantly provided by private entities[5] **in most cities at the time of projects design**. In Blantyre, Freetown and Kampala, city councils also owned one or two (often non-functional) vacuum trucks, providing limited emptying services mainly to institutions. The private service providers included individuals or registered companies, mainly delivering emptying and transport services. None of the cities under study, at the time of project design, had delegated the management of FSTP (where they exist) to a private operator. Private entities providing emptying services either offered mechanized services through vacuum trucks, or manual services. In recent years in Blantyre and Kampala, semi-mechanized services adapted for densely populate areas, such as Gulper services, were introduced by NGOs testing alternative and affordable solutions. Common challenges in emptying service delivery included poor road infrastructure, poor assets conditions (requiring recurrent repair) and limited access to finance of operators. In addition, in Blantyre, Kampala and Freetown between 30-40% of the households use unlined pit toilets, which in addition to the issue of solid waste disposal in pits, posed specific challenges for mechanized emptying.

In Dakar and Kampala, associations of sanitation service providers were (and still are) playing an increasingly important role. Such associations are voicing the needs of truck operators and can be a critical focal point for policy makers and service authorities to engage with the private operators.

Photos (left to right): clearing solid waste from a toilet, Freetown; a derelict vacuum truck in Freetown; the 'discharge point' of the vacuum trucks in Freetown's dump site; a non-functional unit of one of Blantyre's wastewater treatment plants.

Arrangements between service authorities and private entities for onsite sanitation services

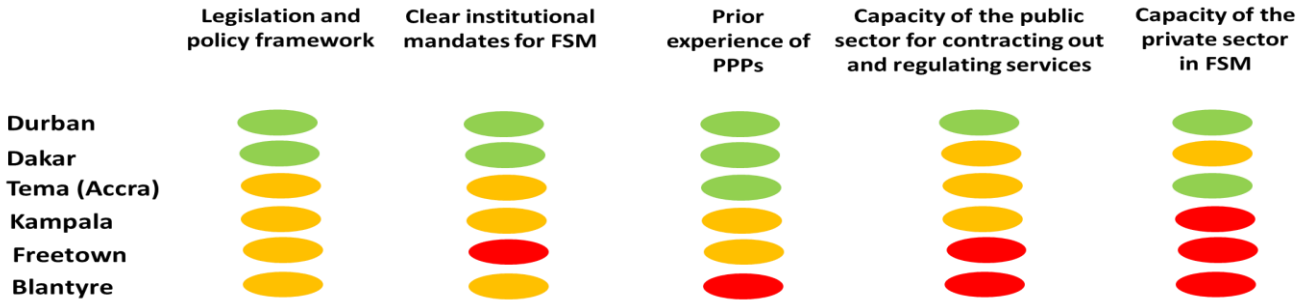
Prior to project design, formal contractual arrangements between service authorities and private operators for the delivery of FSM services were virtually non-existent apart from eThekwini. Existing FSM contracts were limited to management agreements for operating public toilets. These usually contained no performance indicators on service levels (e.g. cleanliness and hygiene standards). Even in Dakar, contracts were usually service contracts for specific maintenance and repair activities for public infrastructural assets. In summary, there were limited experiences of formal PPP contracts for onsite sanitation services. By contrast, some cities had made progress in contracting the private sector for other types of basic services such as water services and solid waste.

2.5 ASSESSMENT OF READINESS FOR PPPS AT THE TIME OF PROJECT DESIGN

Figure 1 provides an overview of the 'readiness' of the context in the cities at the time of project design. Whilst some cities were arguably more 'ready' for formalized contracting of FSM services (in terms of capacity, enabling environments etc.), others needed to work on building the foundations for private sector engagement in FSM, before or in parallel to the actual contracting out of FSM services.

Figure 1: An overview of the 'Readiness' of the FSM sector for PSP at the time of project design

[5] Although Freetown has a city-wide contract on solid waste services, which is unclear on the responsibilities of the private contractor regarding the management of the FSTP which is located on the dumpsite.



Note: the traffic light system (green = high, red = low) is a qualitative scoring based on the author's perspectives, using information from the rapid literature review, and where applicable, field visits.

3. RATIONALE FOR PRIVATE SECTOR PARTICIPATION IN THE DELIVERY OF URBAN SANITATION SERVICES

3.1 OVERVIEW OF PROJECTS DESIGN

As presented in Table 3, while some of the six projects started before 2013, others only took-off in, or after, 2014. This implies that while some projects initiated the implementation of SLAs following the call for Letters of Interest by BMGF/DFID and the guidance developed by Castalia, others embedded the design and implementation of PPP agreements more spontaneously, and as a result of prior activities that provided a rationale for developing contractual arrangements.

The six projects and have been implemented by different types of grantees:

- **Service authorities**: in Dakar, and Kampala, grant recipients are the designated service authorities (ONAS and KCCA). In Durban, the grant was channeled through a quazi-NGO/consulting firm who work closely with the municipal service authority for the project.
- **International NGOs and research institutes**: in Blantyre and Freetown, the grant recipients were the INGOs WASTE (NL) and GOAL, who partnered up with the city councils. The International Water Management Institute (IWMI) was the grant recipient in Accra.

These different types of grantees also brought in a variety of approaches. While IWMI was addressing a challenge within a specific segment of the sanitation value chain (in this case treatment), other grantees developed projects which sought to address several segments. In Blantyre, for example, the project was designed to address the containment up to treatment segments. Aside from Accra, all projects sought to develop emptying services by strengthening private sector participation. The focus of the projects per value chain segment is presented in **Error! Reference source not found.** It should be noted that not all elements of the value chain were necessarily going to be addressed through PPPs in the project.

All projects embedded developing PPPs and/or licensing for urban sanitation services from the design stage. In Blantyre, Durban, Freetown and Kampala projects, designs specifically referred to SLAs[6]. In Accra and Dakar (where projects were initiated prior to any guidance on SLA being formulated), projects only made reference to PPPs more generally. Grantees had formulated the objectives to broker PPP agreements (including for some, SLAs) across the sanitation value chain.

[6] Although some projects had SLAs and PPPs as central objectives, others had them as one of a list of initiatives to strengthen the FSM chain. In Blantyre the establishment of SLAs was the output indicator for each logframe output. Whereas in Freetown the establishment of SLAs was only briefly referred to in the project documents.

Table 3: Key features of projects design

City	Start-end date	Grantee	Implementing partners	Targeted value chain segment	Project objectives	Key components	Anticipated PPP agreement	Project cost (USD million)	BMGF/DFID funding (USD million)
Accra (Tema)	2013-2015	IWMI	TREND, TMA	Treatment and reuse	• Scale-up the production and sale of FS-based fertilizer • Demonstrate viability of fertilizer business	• Construction of FSTP and installation of production units • Contract design and tendering • Marketing development • Explore replicability	FSTP operations	1.1 (and land contribution from TMA)	1.1
Blantyre	2014-2017	WASTE	BCC	Emptying, transport treatment and reuse,	• Improve management of public toilets • Develop emptying services • Develop treatment and reuse services	• Public awareness on fee-paying public toilets • Facilitating access to finance for emptying service providers • Rehabilitation and construction of public toilets • Upgrading of FSTPs • Contracts design	Public toilets operations; FSTP operations	2.6	2.6
Dakar	2012-2017	ONAS	IPA, EDE,WSA	Emptying, transport treatment and reuse	• Transfer FSTP operations to private sector • Reduce mechanized desludging costs • Professionalize private operators	• Research to inform actions to reduce desludging costs • Rehabilitation and construction of FSTPs • Contract design and tendering • BDS to emptying service providers (including access to finance)	FSTP operations	12.3	12.3 (of which 4.9 granted to ONAS and remainder to project partners)
Durban	2015-2018	eThekwini	University of KwaZulu-Natal; Khanyisa Projects	Emptying, transport treatment and reuse	• Provide emptying services for UDT users • Treat and reuse UDT waste	• Market assessments to identify suitable contractual arrangements • Contracts design and tendering • FSTP construction	Emptying UDTs and managing FSTP	5.7	1.6 (eThekwini contributed 4.1)
Freetown	2016-2018	GOAL	FCC, WSUP Advisory	Emptying and transport	• Improve regulatory framework • Improve emptying service providers' capacity	• Creation of a FSM unit in FCC and establishment of licensing mechanisms • BDS to private operators • Public awareness on adequate use of latrines and emptying services	SLAs for public toilet management and transfer stations*	2	2
Kampala	2015-2017	KCCA	n/a	Emptying and transport	• Improve knowledge of sanitation markets • Increase demand for FSM services • Regulate private sector emptying provision	• GIS mapping of toilet facilities • Definition of service level standards and enforcement through SLA contracts • Behavior change campaigns • Capacity building of KCC staff • FSM MIS and call center	SLA for emptying services	2.4	1.9 (Government of Uganda contributed 0.45)

3.2 EXPECTED BENEFITS FROM PPPS AT TIME OF PROJECT DESIGN

In several projects, the rationale for private sector engagement through PPPs was two-fold: on the one hand, supporting PSP had the potential to scale-up urban onsite sanitation services; and on the other hand, formal PPP engagements through signed agreements would secure the performance of both parties involved.

PSP has the potential to scale-up urban onsite sanitation services, whether through increasing first time access (e.g. to safely-managed emptying services) or stepping-up service levels (e.g. increasing the volume of sludge being treated at city-level). The main rationale for private sector contracting was as follows:

- Market knowledge and technical expertise*:* In most contexts, the private sector was already involved in the delivery of onsite sanitation services, albeit in an uncoordinated and ill-regulated manner;
- Operational efficiency: Because the private sector operates to generate profits, delegating the management of public assets to a private operator could generate operational efficiencies. Such efficiencies could be obtained through, for example, a reduction in operating costs;
- Commercial orientation: private operators are likely to adopt a demand-responsive approach and seek to increase their customer base; and
- Capital investments: Carefully designed contracts could lever private sector investments.

4. BUILDING THE FOUNDATIONS OF CONDUSIVE PRIVATE SECTOR PARTICIPATION

Private sector contracting was, for most of the projects under review, one element of wider project components seeking to develop PSP in urban onsite sanitation services. Whilst each project in the six cities was unique in terms of objectives and activities, common activities were undertaken by grantees to address the enabling environment and lay the foundations of conducive PSP and private sector contracting. Broadly these included: building the knowledge base and market intelligence of FSM in the cities; building the capacity of public and private actors to take on their roles adequately in PSP; and strengthening the customer base through public awareness campaigns.

4.1 ADDRESSING THE ENABLING ENVIRONMENT

Building public sector's capacity to plan onsite sanitation services

Several grantees undertook studies to build the evidence-base on which to plan for and outsource FSM services. At the time of project design, many of the cities lacked data that could be used for planning and budgeting. Projects undertook baseline studies and market assessments of specific value chain components. Whilst not all of these applied in each city, examples of the studies included: household surveys; GIS mapping; engineering assessments, feasibility studies and due diligence assessments; business and financial modelling; and studies on the PPP legal framework.

These studies have been a catalyst not only for evidence-based planning and decision making, but also in raising FSM issues onto the sector agenda. Stakeholder exchange visits also helped raise the understanding and engagement of city stakeholders. As one stakeholder in Freetown said "*People now understand FSM is a problem - that is invaluable*". The increased body of data has also helped in raising the interest of the private sector who may not before have been

engaged in FSM. In addition, learning exchange visits to Dakar (by three of the cities), and visits to other cities and conferences helped to raise the understanding, appetite and aspirations of city authorities in improving FSM services generally, and specifically in the potential role of PPPs.

Building the dialogue between public and private stakeholders

Efforts have been made in some cities to increase the dialogue between public and private stakeholders to improve collaboration and regulation of FSM services. In many of the cities, emptying and transport services were often relatively 'underground' businesses, who deliberately avoided dialogue with city authorities. Some cities have made efforts to convene stakeholders, either in the form of periodic conferences or in monthly coordination meetings. In Blantyre for example, a series of workshops were held to discuss challenges, the findings of studies, and to draft service level standards. Such workshops were facilitated and 'brokered' by the NGO WASTE, helping to mitigate against the risk of power imbalances between the public and private sector.

Only one project included specific actions to build the capacity of the city authorities in FSM. In Freetown this included the support to the city council to establish and train a dedicated FSM Unit, who would be the focal point for contracting, managing and regulating FSM services. Despite the project aspirations to help service authorities engage more with private sector led services in the six cities, there has been limited efforts to build the capacity of the service authorities in areas such as contract management, regulation or enforcement.

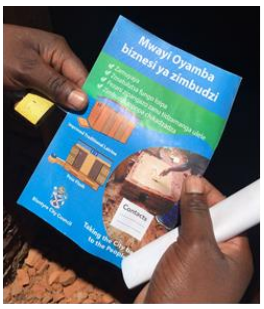
Building private sector capacity

Various efforts have been made to help the private sector grow, including through trainings, technology transfer, business development support (BDS) and facilitating access to credit. Capacity building activities focused predominantly on vacuum truck services. In Kampala, trainings were provided at the monthly meetings of the city council and emptiers, with an aim to get the service providers up to a standard that they could meet the requirements of public procurement. In Freetown, training on health and safety was provided to manual pit emptiers, in addition to the distribution of locally manufactured emptying equipment such as scoopers and gulpers.

Access to credit has been identified as a common issue preventing emptying services from repairing, expanding and modernizing their vehicle fleet. In Freetown, BDS was provided to three of the better performing vacuum truck companies, including in business modelling, mentoring and the production of business plans. However, despite this intensive support, none of the emptying businesses were regarded as 'creditworthy' by local financing institutions. In Dakar the service authority (ONAS) established a Guarantee Fund – with funding from BMGF, whereby the partner bank provides low-interest rate loans (with a 25% counter guarantee from ONAS) with a 60-month payback period for trucks, and a 24-month payback period for spare parts. Since 2013, the Guarantee Fund has benefited 29 companies and disbursed around USD 1.1 million in loans.

Developing service standards

Service standards were developed for various elements of the sanitation value chain in Blantyre, Kampala, Freetown and Dakar, some of which have been incorporated into local bylaws and licensing requirements. In Blantyre and Kampala standards have been incorporated into the city by-laws, and in Dakar they were incorporated into the licensing requirements for vacuum truck operators in the city. The Freetown City Council (FCC) has drafted Standard Operating Procedures for emptying services. Whilst standards and legislation have been put in place, there seems to have been limited focus to date on mechanisms for enforcement.


Photos (left to right): Staff of the FSM Unit established within Freetown City Council; an example of a public awareness leaflet in Blantyre; a capacity building session for truck operators in Kampala; a rehabilitated public toilet in Blantyre

4.2 ACTIVITIES THROUGH THE VALUE CHAIN

4.2.1. CONTAINMENT

Public toilets

In Freetown and Blantyre, efforts were made to attract private sector players to public toilet management, to demonstrate their commercial viability and establish minimal service quality standards. However only Blantyre has made considerable progress[7]. Studies were undertaken to aid financial modelling of the facilities and identify whether 'bundling' between high and low revenue toilets may be required. Public toilets service standards were defined for both cities. In Blantyre the initial 'batch' of toilets to be outsourced were rehabilitated or constructed using grant funding, and it was anticipated that once the model of public toilets is 'proven' as a profit-making activity in the city, that future 'batches' of toilets would be constructed with considerable investments from the private sector. Experiences from Blantyre indicate that people are only willing to pay for 'modern' toilets providing a higher quality of service, and that consultation and sensitization has been essential for the political and public acceptance of pay for use, privately managed toilets.

Domestic facilities

Poor quality domestic toilets hinder the viability of emptying services; however the extent to which this issue has been engaged on in the projects varies. Efforts to address domestic toilets quality were undertaken in Dakar (to identify suitable technologies in flood-prone areas). In Kampala and Freetown media campaigns were carried out to raise households' awareness on the need to construct emptiable (e.g. lined) toilets, and stop placing rubbish in the pits. In Blantyre, the project trained local masons to construct improved, emptiable facilities, who are marketing their products to landlords and home owners. However there has been relatively limited engagement in the projects on strengthening sanitary inspection and building control inspections to enforce toilet standards.

4.2.2. EMPTYING AND TRANSPORT

Common challenges in the emptying and transport sub-sector at the time of projects design included: relatively weak regulation, and poor practices of the private sector (illegal disposal of sludge, unhygienic emptying methods); limited customer awareness on emptying service providers and usage/tolerance of low quality services such as manual emptying; a weak private sector with issues in accessing credit, and inadequate or ageing emptying equipment; high costs of emptying through vacuum trucks, and poorer households lacking safe, affordable alternatives to manual emptying. Five

[7] The activity stream around public toilets in Freetown has recently been suspended due to the incoming activities of another NGO focusing on public toilets in the city.

of the six projects included a focus on private sector-led emptying and transportation services, including a number of actions to build customer demand, service provider capacity, and regulation.

Assessments were carried out to better understand the markets for emptying services, although with limited focus on services to the poor. In Freetown this involved household surveys, in Durban and Kampala it involved undertaking GIS mappings of on-site facilities to identify demand for services, and in Freetown, Blantyre and Kampala this included reviewing the business models and capacity of private operators. With the exception of Freetown, efforts to collect data on manual pit emptying services were limited – despite these services often being the default service for the poor.

Service standards for FS emptying and transport were developed in four of the cities, with the approach to adoption and enforcement varying. Whilst in Dakar these standards were incorporated into requirements for licensing, in Freetown and Kampala it was felt that enforcing standards too early would have the effect of pushing the private sector 'further underground'. In these cities the standards initially are based on voluntary adoption, with the city council in Kampala signing a (non-legally binding) Memorandum of Understanding with associations of emptying services. The projects have encouraged the private sector to engage with the service authorities and adopt the standards through putting incentives to do so, for example through making them pre-requisites to access loan guarantee funds, Business Development Support, or to register with the call centers. In Kampala and Blantyre it is hoped that the associations would help to adopt and internally enforce the standards within their member organizations. For further monitoring of the emptying services, Kampala has introduced GPS tracking of vacuum trucks, and whilst this is not yet widely popular with the truck owners there, there is interest in Blantyre and Freetown to replicate the approach.

Photos (left to right): a toilet being emptied using a Gulper pump, Blantyre; the Mobile Desludging Unit (MDU) in Blantyre; one of the vacuum truck operators in Freetown; a queue of vacuum trucks waiting outside the treatment plant in Kampala.

Various efforts are being made to help the private sector grow, although most efforts have focused on vacuum truck services, with less emphasis on service options already focusing on low-income areas. As mentioned, efforts have been made in some of the cities (Freetown, Dakar, Blantyre, Kampala) to develop the capacity of private emptying services. These have included working on access to credit (through loan guarantees and support to develop business plans), training and mentoring to the private sector in Kampala and Freetown, and the leasing out of innovative pit emptying technologies to a private operator in Blantyre[8]. Freetown was the only project that has directly engaged with manual pit emptiers, and also worked on semi-mechanized emptying services that are appropriate for unlined pit settings[9]. In Kampala and Blantyre other NGOs (Water for People in both cities) are working on technology transfer and business support for Gulper[10] services, but the

[8] The project involved importing a Mobile Desludging Unit and donation to the City Council, who then leases the unit out to the private sector.

[9] In Freetown, Blantyre and Kampala 30-40% of the population use unlined pits.

[10] Gulper is the technology name of a manually operated sludge pumping device

projects have had limited interaction with this category of services to date, despite Blantyre intending to do so in future.

There have been limited, and unsuccessful attempts to develop public infrastructure for emptying services (transfer stations). The manual pit emptying, MDU and gulper services in the cities struggle to generate sufficient volumes of waste per job to make it cost-effective to transport the collected sludge to the treatment plants. This issue was acknowledged in Freetown and efforts were made in the project to construct two demonstration transfer stations, and develop business and financial models for their operation. However, this was the only project of the six to engage in transfer stations, and in Freetown the project component had to be suspended due to strong public and political resistance to the tanks being sited in their neighborhoods.

Efforts have been made to increase customer demand and stimulate competition through call centers and awareness campaigns. Public awareness campaigns related to emptying services were undertaken in four of the cities through mass media, community events and leaflet distribution. The concept of call centers for emptying and transport services managed by the service authority was initiated in Dakar, and subsequently replicated in Freetown and Kampala. The common objectives of these call centers were to provide customers with contacts of a number of service providers, to increase market competition and reduce costs to users. At the same time, the service authority would be able to obtain information on emptying activities which can be followed up by phone or site visits to check adherence to quality standards, and customers would have the ability to inform the service authority of FSM mal-practice. To date, the results of these call centers in terms of improving service level standards (e.g. by reducing tariffs) have been mixed (Box 1).

Box 1: Call centers models and results to date

In Dakar, the call center, operated by ONAS, matches households requesting desludging services with services providers offering the best price. When households are ready for desludging, they can call the center, which will notify service providers. Vacuum truck operators then bid on their job using text messages. This bidding process induces operators to lower their prices. A similar call center has been set-up in Kampala and is due to be launched in Freetown, although these two cities will not include the internal bidding function, to avoid risks of collusion between call center operatives and vacuum truck businesses.

Although the model has enabled a reduction in emptying costs for households through aggregating demand and increasing competition (a reduction of 15-20% on the initial average costs in Dakar and Kampala), overall results are varied. In Dakar, emptiers were reluctant to use the center, and only an estimated 10% of emptying jobs were passing through the call center. Many households have not heard of the service, and most emptiers preferred to provide services without going through the call center, to keep their prices as high as possible.

In all three cases, the call centers focus predominantly on vacuum truck services, not including manual emptying, although the Kampala call center does refer jobs to Gulper groups if the customer's premises are not accessible for vacuum trucks.

In Durban, where the emptying services are financed by the service authority rather than the households, there were less needs to undertake many of the actions around building the customer base and developing the private sector. The case of Durban is a relatively unique case, and is described in the text box below.

Box 2: Publicly financed emptying services - the case study of eThekwini (Durban)

In South Africa there is legislation stating that citizens have the right to free, basic water and sanitation services. Cross subsidy between richer residents (using sewerage services) and the typically poorer users of onsite sanitation mean the latter customers receive emptying services for free, paid for by the municipality.

In eThekwini municipality, there are a total of 85,000 Urine Diversion Toilets (UDTs), which were constructed in 2000 following a cholera outbreak in the city. There is a reluctance of many of the toilet users to empty the toilets themselves, and public health concerns where they are emptying the toilets.

The project has mapped all the UDT facilities in the municipality, and has developed a service contract to outsource the emptying of the toilets. A service contract was awarded covering an initial period of two years, requiring the service provider to empty 50,000 UDTs, with the payments of the contract coming from the eThekwini municipality, with a fixed cost per toilet emptied

In this the Durban example is relatively unique, as there was no need to undertake much of the wider actions of building the capacity of the private sector or building market demand for services, which has been necessary in the other cities. This is because in this context, the customer base was already guaranteed, and revenue security was guaranteed through public financing.

4.2.3. TREATMENT AND RE-USE

Common issues of FS treatment and re-use at the time of project design included: a lack of infrastructure that was specifically designed to treat FS, and often dilapidated treatment facilities; limited proven options and business models for FS valorization; issues in financial sustainability and operational efficiencies in the (public-sector-led) management of treatment plants; illegal dumping of FS by emptiers, and various disincentives to discharge at designated treatment facilities.

While five of the six projects included components to develop treatment and/or reuse services, the most significant activities in this area were carried out in Accra, Dakar and Durban. In Accra, IWMI (grantee and research institute) led the construction of a FSTP with the capacity to produce 500 tons of FS-based compost. IWMI supported the service authority in reaching a Joint Venture Agreement with a local company, and has supported the design and roll-out of a marketing strategy for the FS-based product. As part of this process efforts were made to get the product tested and certified by national authorities, helping to 'unlock the door' to markets such as the government's subsidized fertilizer program. In Dakar, the project included rehabilitating three FS treatment plants under a concession agreement with a private operator, as well as the introduction of an innovative treatment and valorization technology (the Omni Processor). Finally, in Durban, eThekwini aimed to use the Black Soldier Fly (BSF) technology to transform waste into useful end-products. eThekwini funded the construction of the FSTP, with management and operations delegated to a private operator.

As of October 2017, the FS treatment initiative in Dakar was in full operation, whilst the waste conversion process in Accra and Durban was just getting started, due respectively to challenges in initial production processes, and needing to make repeat modifications to the facility design.

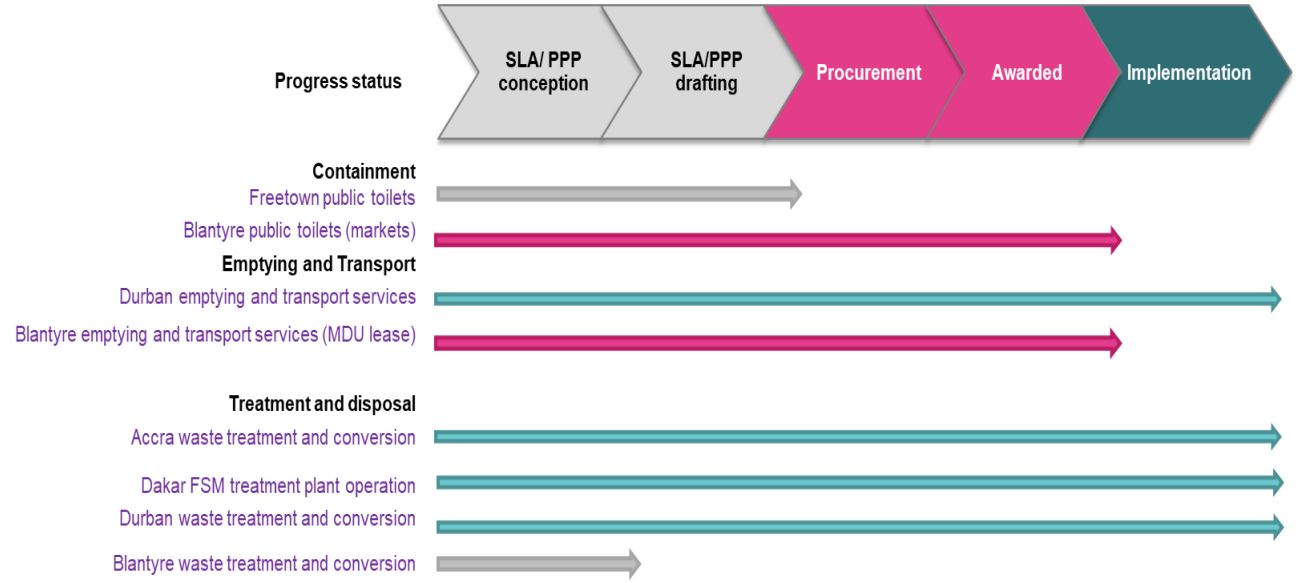
Photos (left to right): first screening, and larvae beds in Blantyre; an aerial view of the Fortifier FS treatment plant in Accra; a photo of the Fortifier product (source IWMI).

5. PROGRESS IN CONTRACTING THE PRIVATE SECTOR

Whilst the previous sections have defined the objectives of the projects, and general activities to help build the foundations for PSP and PPPs/SLAs, this section focusses on the examples where contracting has actually occurred between the public and private sector for FSM services.

To date, seven contracts for onsite sanitation services have been developed, and by November 2017, four contracts were under implementation. While contracts were designed and awarded in Accra, Blantyre, Dakar and Durban, in Freetown and Kampala, grantees have yet to materialize their ambitions to contract the private sector for improved service delivery[11]. This section presents the contracting process implemented in the four cities and discusses challenges encountered, including where such contracts were not implemented.

Figure 2: Progress on contracting the Private Sector



5.1 CONTRACT PREPARATION ACTIVITIES

Due diligence studies on contractual arrangements were conducted in Accra, Dakar, Blantyre and Freetown. The objectives of such studies were to identify:

- Issues affecting the legal ability to contract out infrastructure management and services, for example looking at land ownership and existing contracts and ownership arrangements[12];
- The PPP options which were legally possible in the country; and
- The most suitable contract considering policies, contexts and potential revenue streams.

[11] In Freetown it was envisaged that an SLA could be implemented for the transfer stations, however this was suspended due to the public and political resistance to the construction of such facilities. Freetown has since worked on an SLA for the management of public toilets. This SLA has been drafted, but progress in its finalization and possible implementation has been paused due to another NGO aiming to undertake a city-wide study on toilet management models.

[12] For example, checking the existing contracts with the small number of facilities that already had private operators, to check their expiry date, current arrangements and termination clauses.

Such studies were particularly critical in contexts where service authorities had no prior experience with PPP contracting for onsite sanitation services. In Blantyre, the city council (as for all local authorities in Malawi) had never contracted out services through PPPs. The project helped clarify ambiguities with regards to local authority's ability to engage in PPPs directly. It also clarified institutional mandates between the city council and the Water Board on sewerage and on-site sanitation issues. In Dakar, ONAS had some experience with service contracts, but not with delegating public assets. In Accra, TMA had some experience (as it had entered in a management contract for sewerage services), but had no experience with treatment and reuse services.

In Blantyre and Dakar, national procurement authorities were engaged in drafting contracts. In Blantyre the city council collaborated with the national Public-Private Partnership Commission (PPPC), to draft contracts for public toilets management and for the outsourcing of the Mobile Desludging Unit. In Senegal, ONAS involved the national procurement authority to identify the suitable contractual modality for the three FSTPs. Where cities had to engage with national authorities, contract design was a lengthy process, involving back and forth between parties.

In Durban, eThekwini already had some experience with PPPs for municipal services, however the SLA format had not been tested before. Pre-procurement activities were therefore focused on ensuring that such a contractual arrangement was compatible with the municipality's legal requirements. With regards to the contract for UDTs emptying services, eThekwini could follow its existing procedures as this was essentially a conventional service contract.

5.2 CONTRACTS FEATURES

Table 4 provides an overview of the seven contracts which have been drafted to date.

Table 4: Contract design key features

Service authority (and contract)	Contract type	Duration	Asset ownership	Operator's remuneration	Charges paid by the contractor to service authority	Services to be provided
TMA (Accra)	Joint Venture	n/a	Public and private	Tariffs (tipping fees) ; Sales of FS-based fertilizer	50% profits after recovery of initial working capital	Operations of the FSTP
BCC	Lease	5-year	Public	Tariffs	Fixed lease fees	Public toilets
BCC	Lease*	5-year	Public	Tariffs	Fixed lease fees	Mobile Desludging Unit (MDU)operations
FCC	Lease*	Not specified	Public	Tariffs	Fixed lease fees	Public toilets management
eThekwini	Service contract	2-year	Private	Payment by eThekwini based on number of UDTs emptied	n/a	Emptying 50,000 UDTs
eThekwini	SLA	5-year	Public	Payment by eThekwini of a fixed gate fee (per ton of FS delivered); Sale of fertilizer	None	Operations of FSTP for UDT waste
ONAS	Concession	7-year	Public	Tariffs (tipping fees); Sales of fertilizer	Lease and license fees	Operations of three FSTP

** whilst the contracts in Blantyre are titled 'concessions', the contracts appear to be closer to lease-type arrangements.*

Proposed contracts present different levels of risk allocation between the private and public sectors. Service contracts and management contracts in Durban transfer the lowest risk to the private operator: their remuneration is based on payment by the contracting authority in the context of a guaranteed market, since there is demand for UDTs emptying, and waste treatment and services are

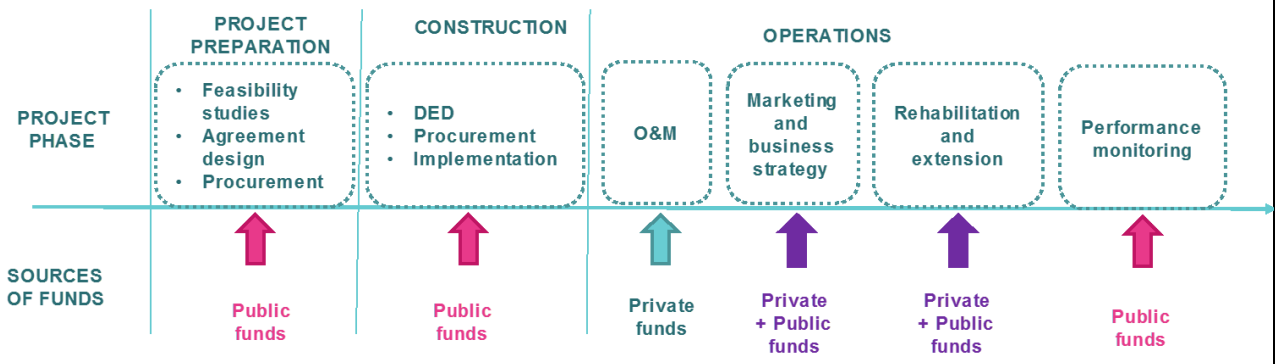
free for households. In the concession and lease contracts however, operators are only remunerated through tariffs. Whereas the market seems secured for sludge disposal in Dakar (since ONAS has been working on regulating vacuum trucks emptying services), public toilets management present higher risk since willingness-to-pay for such services was not well engrained in public markets in Blantyre. The operation of the MDU in Blantyre has the risk in terms of revenues solely coming from customer tariffs, although the operator is confident that the level of demand will be more than adequate to meet the conditions of the contract to finance the monthly lease fee. In the Joint Venture (JV) agreement in Accra, the private sector is taking high operational risk since remuneration is solely based on tariffs and sales of FS-based fertilizer - in the context of a weak regulatory environment for emptying services and an untested market for FS-fertilizer (Table 4). Finally, where tariffs for services was mentioned in the contract as set by the service authority (as in the concession contract in Dakar, the Blantyre MDU lease contract, or draft SLA for Freetown toilets), the contract did not include tariffs review mechanism.

Box 3: Rationale and specificities of the Joint Venture agreement for the FSTP in Accra

The main reasons ruling in favor of the Joint Venture (JV) as the PPP model in the context of the project in Accra were that:

- Full responsibility for operational and maintenance costs and future investments were expected from the private sector;
- The private operator would also incur important business risk as the commercial viability of the FS-based fertilizer plant operation, and market demand for the product, had not been previously tested; and
- Options in which the public side would be the sole owner of the assets, as in a lease model, could be subject to political decisions: lease or concession contracts can be interrupted without causing significant financial losses to the public side.

The JV agreement seemed suitable because of the innovative nature of the project and the business model proposed. It was also as deemed appropriate to design the specificities of the JV in close consultation with the private operator. This procedure can be referred to as a negotiated procurement procedure (see section 5.3). As presented in the figure below, under the proposed JV agreement, the operator is not contributing to the initial capital investment (funded by the BMGF/DFID grant). The operator is expected to cover all operating costs and contribute to future maintenance capital. As a JV, decisions on future capital investments are jointly taken (and bore) by both the public and private parties.
The figure below outlines the sources of funds per cost component of ongoing service delivery.



Source: Authors.

Four grantees specifically referred to SLA to describe contracts that were designed; however, only eThekwini's contracts appear to have followed the SLA guidance provided by Castalia regarding remuneration arrangements. Indeed, in the other three SLAs (two in Blantyre and one in Freetown), operators would be remunerated solely through tariffs. In Castalia's guidance, SLAs are defined by operators being primarily remunerated through payment by the contracting party, some of which being tied to performance. SLAs developed for Blantyre and Freetown include service level standards; however, remuneration is not specifically tied to the achievement of specified outputs. Instead, the contracts are lease contracts with annexed operating service standards which the

operator is obliged to follow (or risk termination of contract). Finally, all three SLAs (in Blantyre and Freetown) embed a lease fee to be paid by the operator to the contracting authority. In this case, rather than the service authority paying the contractor for it services (as per Castalia's guidance), it is the contractor who pays the service authority for using the assets.

The extent to which the SLAs focus on 'output oriented' service levels is variable, and generally limited. The Castalia guidance proposed that SLAs should be output rather than process based, thereby allowing the operator to innovate and find the most efficient means to achieve the outputs. The SLAs for public toilets included a mixture of process-oriented requirements and output standards, whilst the operating standards for the MDU in Blantyre was strongly process-oriented, akin to an operational manual. Where the contractual service standards were more focused on detailed processes than a small number of verifiable 'output' standards, it was less clear how the service standards would be enforced, or indeed tied to contractual incentives, or penalty clauses.

The role of the service authority for emptying and transport services varies between the contractual models. In Durban, the municipality is the client and regulator, as services are paid for directly by the municipality. However in Kampala, Dakar, Freetown and Blantyre, where emptying services are paid by the customer directly to the service provider, the service authority's role focusses on service quality regulation, in addition to facilitating the private sector-led services.

5.3 PROCUREMENT PROCESSES

Service authorities (and their partners) deployed two main procurement procedures: the open tender procedure and what can be termed a 'negotiated procurement procedure'. Dakar, Durban (emptying service) and Blantyre followed an open tender procedure, which tendered contracts that already contain the bulk of technical terms (for example targets in terms of service delivery, and the technical specifications of the assets to be operated). Bidders would then compete based on the technical capacity to deliver the services, and on their financial offers.

Box 4: Procurement process for public toilets management in Blantyre

In Blantyre, the project team for the 19 market public toilets originally envisaged that the toilets would be procured in bundled groups or 'lots', allowing the potential for mixing higher and lower revenue generation potential toilet facilities, and therefore to cross subsidize between them. However, it was decided that this bundling of multiple facilities may 'stretch' the private sector beyond their capacity, and may preclude some of the existing smaller operators from being able to qualify for the management of facilities. There were also concerns of the city council that having large contracts covering many areas of the city was a potential city-wide political risk, whereas with smaller contracts, political issues were likely to be more localized and therefore more manageable. Each toilet was therefore procured individually (i.e. one contract for one toilet), to ensure smaller companies could compete, and in an effort to reduce risk to the public sector.

In contrast, open negotiation procedures involve the contracting party to negotiate with potential contractors on both the technical and financial terms, more in the spirit of partnership than purely 'contractor' or 'operator'. In Accra and Durban, where service authorities were looking to introduce innovative technologies for FS valorization and to develop a service previously untested, the negotiated procedures appeared the adequate way to engage with prospective private partners. In Durban the partner was selected on the basis that they were the only organization with the relevant skills to develop and operate a Black Soldier Fly plant.

Box 5: Identifying a suitable partner for a FSTP Joint Venture

The team launched a call for Expression of Interest in local newspapers for a partnership with TMA for the operation and management of a FSTP in August 2013. Four private operators responded to the call; interviews were carried out to explain the project and gather details on the interest, profile and capacity of the four applicants. Private operators were assessed against a set of selection criteria. These included: social vision agenda, registration in Ghana; experience of a working relationship with municipalities; experience in waste management; marketing experience; and the ability to contribute to the Plant's working capital.

A detailed scoring of private operators' capacity against these criteria was developed and applied. BMGF was also involved in the selection of the private operator and took active part in the interview process. Following this process, Jekora Ventures Limited (JVL), a local Small-Medium sized Enterprise (SME), was selected as a partner in the project. JVL had a good reputation in the solid waste sector and had experience of PPP in Accra and working with TMA on solid waste management services. It also had prior (but limited) experience with compost production. JVL's Chief Executive Officer showed strong enthusiasm for the project. As a SME in a very competitive waste management market (mostly for solid waste) where large companies are dominant, the project represented an opportunity to position JVL in a niche market ahead of its competitors, since the project presented innovative approaches and processes.

5.4 CONTRACTS AWARD

To date, six of the seven contracts drafted have been awarded and four are being implemented. Grantees and service authorities have successfully awarded contracts in Accra, Blantyre, Dakar and Durban. In Durban, the SLA for the FSTP has been awarded but will only be fully operational once the construction period is finalized (which was ongoing at the time of writing this report).

The appetite from the private sector to bid for the FSM contracts varied, with some examples of only receiving one bid. Of the four contracts put to open tender, two had only one bidder each (Dakar FSTP and Blantyre MDU). The demand was higher for public toilets (Blantyre) with over 20 bids received, and for the emptying services in Durban. Whilst the exact reasons for the limited demand in Blantyre and Dakar are not fully understood, both contracts required considerable up-front investments[13], which may have put off many prospective firms.

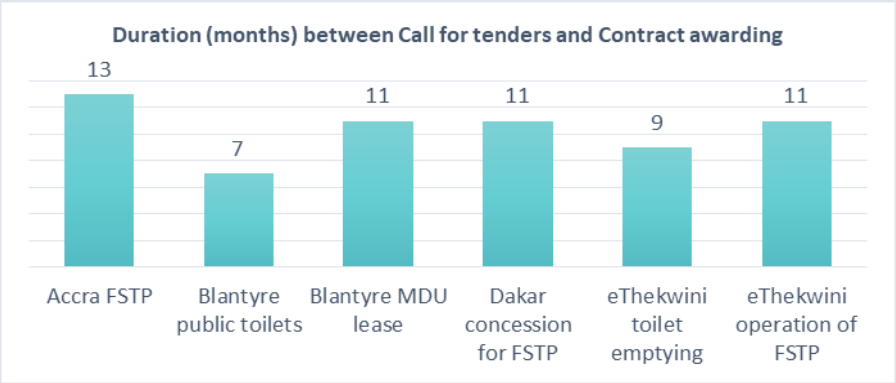
Service providers that have been awarded contracts include SMEs with previous experience with onsite sanitation services as well as others that come from different sub-sectors. In Dakar, the concession contract for the three FSTP has been awarded to the joint venture DELTA-VICAS, made of two companies with experience in sanitation services (emptying and drainage services) as well as construction works. Both also had been previously awarded contracts by ONAS for various services such as drainage clearance. In Accra, as previously mentioned (see Box 5) the JV was signed with a local SME (of about 200 employees) delivering solid waste services under PPP in other municipalities in Accra. In Durban, the contract for UDTs emptying was awarded to Gabhisa Services, a local company that was not previously in FSM services but had been contracted by eThekwini for solid waste services. Finally, several contractors of various profiles (mostly SMEs) were selected for public toilets management and the MDU operation in Blantyre.

The timeframe from procurement to contract award was particularly lengthy in Blantyre, Accra and Dakar, denoting contracts novelty for the service authority. In Blantyre the duration from advert to contract award for the MDU and toilet leases were 330 days and 220 days respectively, in comparison to the city council average of 100 days for procurements. These delays were due in part to the fact that lease contracts were relatively new to the council, and institutions such as the Public Private Partnerships Commission needed to be involved. The extended timeframes for procurement

[13] Funds were required to rehabilitate the FSTPs in Dakar, and as part of the condition for the MDU lease the private operator had to procure a truck to mount the MDU onto.

in the cities is indicative of the 'teething' issues and learning process that many of the city councils had to go through, as few had experiences with SLAs and PPPs.

Figure 3: Timeframe between call for Tenders/ Partner Engagement and Contract Signature



5.5 IMPLEMENTATION TO DATE

Initial results from these contracts indicate the potential of PSP to improve service levels, although only a few contracts had fully started operations at the time of this review. As of November 2017, six contracts had been awarded, of which two were in Blantyre and were only signed in October and November, and had not yet commenced implementation. The Dakar concession contract had been running for three years, the Accra plant had been running for a year but suffered considerable initial delays in production. The UDT emptying service contract in Durban had been running for a year, whilst the Durban treatment plant was still undergoing protracted modification works, although production had started at a small scale.

In Dakar, DELVIC (the renamed Joint Venture) was able to increase overall net profits by 236% by 2016. DELVIC is meeting its contractual obligations with regards to investments, operations and maintenance activities as well as reporting. Regular maintenance works and monitoring substantially improved operational and financial performance. Interventions on other aspects of the sanitation value chain have also contributed to increasing the use of the FSTP. In 2012, about 90 trucks were using the FSTP. In 2017, some 188 trucks emptied their sludge at the FSTPs.

I**n Durban, the service contract for UDTs emptying is on track to achieve its objectives**. About 12,000 UDTs (out of 50,000) were emptied by the end of October 2017. The management contract for the FSTP has partially started at the time of this report, as the project is still in construction phase.

In Accra, the FSTP was functioning at near full capacity and was receiving FS from all neighboring Assemblies. Both TMA and the private contractor (JVL) have been fulfilling their obligations as planned. TMA is playing a key role to incentivize truck operators to use the facility by exerting greater control over their movements. The sale of the FS-based fertilizer was yet to pick up at scale but all parties involved (TMA, IWMI and the operator) were confident that sales would increase. IWMI is supporting the private operator to design and implement marketing strategies.

5.6 CHALLENGES IN CONTRACTING THE PRIVATE SECTOR

Across the six cities, challenges were encountered in the contracting process, which either led to processes being put on hold, or to delays in contract implementation. Where contracting has not yet taken off, challenges related to lack of buy-in for infrastructure (transfer stations in Freetown) or the need to first develop the private sector to meet public procurement requirements (Kampala).

In other cities, delays that occurred were mainly related to the contract design and procurement processes (due to lengthy due diligence, contract drafting and negotiations). However, delays were also related to the innovative nature of the business model underlying some PPP agreements. In Accra, as the project aimed to scale-up the sale of FS-based fertilizer, IWMI supported TMA and the private operator to obtain a license to operate the FSTP and produce the fertilizer. A certification was required from the line ministry for agriculture that the product was a suitable fertilizer, as FS-based compost had never been marketed before. These processes, in addition to contract drafting and negotiations, caused the project to extend beyond its original timeline by over two years. However, the project paved the way for future licensing of similar products. In Durban, delays were incurred in designing the SLA for the Black Soldier Fly (BSF) FSTP because the contract model had not been previously tested by eThekwini, and due diligence was necessary to ensure that the model fitted within the municipalities legal framework. There were also delays as the BSF plant was relatively innovative, and there was a need to undertake numerous successive adaptations of the design of the structure.

6. OVERALL ASSESMENT

This section provides an overall assessment of whether the projects, through PSP and where applicable PPPs/SLAs, have attained or are likely to attain envisaged outcomes on pro-poor service delivery, sustainability, scalability and leverage of investments. It also reflects on the various models of project delivery to attain these objectives.

6.1 IMPROVING SERVICE LEVELS

As several contracts only started implementation a few months prior to this review, data on service level improvements is limited to date. However, preliminary results from Accra, Dakar and Durban indicate that PPPs (and SLAs) have contributed to increase service levels.

The main area of improvement to date from the contracts has been with regards to treatment services. In Dakar there has been considerable increases in volumes of FS being delivered to the treatment facilities, suggesting a decrease in illegal disposal. In Accra, where the FSTP started operations a few months prior to this review, 100% of sludge delivered is effectively treated – with five drying beds, the FSTP has the potential to treat 12,000 m^3 of sludge annually.

With regards to emptying and transport services, results to date have been mixed. There is limited data to confirm *actual* improvements, although there are numerous *potential* improvements. Only Durban and Blantyre have succeeded in actually contracting the private sector for emptying services, with Durban contracting them to deliver specific services which were lacking to a specific market segment (UDTs), and Blantyre contracting for the leasing of emptying assets (MDU) which could be used for emptying. The Durban contract is showing positive results, as to date 12,000 UDTs have been emptied. However, the MDU contract was yet to commence at the time of this review, as the private operator was procuring a truck to fit the MDU onto. Whilst the other cities have not yet implemented specific contracts, there have been other initiatives which have, or are likely to have brought some positive changes in the emptying and transport sub-sector:

- Call centers have helped reduce the costs of emptying for some households, potentially making access to higher level services (vacuum trucks) more accessible to lower-income households; however, the reach of these call centers remains limited in some cities;
- There have been efforts to improve the service standards offered by manual pit emptiers in Freetown (technology transfer of Gulpers etc.), and the introduction of innovative technologies

(the MDU in Blantyre) is envisaged to help in expanding the access of mechanized emptying services in 'hard to reach' areas;

- There have been efforts to raise customer awareness of emptying services, and to grow the fleet of existing vacuum truck operators, with a view to help households to increasingly use more improved services (e.g. vacuum trucks rather than manual emptiers).

Public toilets targeted in the project were not yet fully operational at the time of review. Whilst investments in public toilet infrastructure in Blantyre will expand the coverage of such facilities in the city, implementation has not started, hence it is not yet possible to determine whether the toilets and private management will lead to improved service standards, access or quality.

Service Standards have been developed to cover various elements of the value chain, although their adoption and enforcement is key to ensure service improvements and is not yet guaranteed. For treatment, the contracts specified standards for effluent discharge/product quality, and for emptying services numerous cities developed bylaws and service standards, although the degree these have been adopted to date varies. The public toilets contracts in Freetown and Blantyre also specified minimal service standards related to quality and accessibility. However there has been limited efforts to date to build capacity for the monitoring and enforcement of such standards.

Key enabling factors have contributed to improving service levels. These include:

- Capital investments in infrastructure: in Accra, the new FSTP was constructed, for a total cost of USD 650,000; in Dakar, the three FSTP were rehabilitated and a new FSTP constructed; and
- Operational efficiencies brought in by the private sector: in Dakar, the company was able to increase overall net profits by 236% four years after the contract start**.**
- Clear outputs as laid out in contracts: in Durban, the service contract had clear outputs, based on which the service provider would be remunerated.

6.2 DEVELOPING PRO-POOR SERVICES

Across all cities, except for Durban, there is limited evidence that services developed to date have benefited poor households directly. Findings therefore are mainly focused on *likely* improvements, and on the extent to which projects have focused on pro-poor services.

In our analysis we make the distinction between improving conditions and services to the poor either *by default*, or *by design*. In terms of improvements by default: overall improvements in FSM in the cities, for example by reducing the volumes of sludge untreated in the environment, will benefit all in the cities, including the poor.[14] Improvements targeting on-site sanitation are often by nature pro-poor, as they focus on those who cannot connect to sewerage systems.[15] Using this logic, all of the contracts will benefit the poor by default. However, efforts to ensure service improvements specifically target and benefit the poor (*by design*) are more limited in the six cities, with examples given below:

- **Leasing emptying equipment:** The Blantyre contract which leases out the Mobile Desludging Unit (MDU) to the private operators is the only contract which specifically includes efforts to encourage the operators to service the poor: through placing a price cap on the tariffs they can charge, thus encouraging the operators to not only serve higher income clients. However, the efficacy of this contract condition will depend on the city council's ability to enforce it, which is

[14] Particularly as low-income areas are often in sites that are affected by the inflow of untreated wastes

[15] Although this logic is not applicable in many of the cities (e.g. Blantyre, Kampala, Freetown) where on site sanitation coverage is 80-90%, meaning the majority of the population – rich and poor, use on-site technologies.

somewhat questionable. The introduction of the MDU technology in Blantyre is also an effort to increase services to the poor, as it can reach more inaccessible, higher density areas.

- **Publicly-funded service contracts:** In Durban the services of the private emptying firm are directed at a specific market segment, which are the UDT owners (who are generally poor households). This targeting of the poor is achieved because the municipality is specifically paying the service provider to collect from these households, and fully subsidizing the costs to do so.

Where public assets are not being leased out, or the municipality is not subsidizing the service to a particular market segment, there was less examples of direct incentives or obligations of the private operators to serve the poor for toilet emptying.

The poor in the cities are predominantly using manual emptying services for various reasons; however there have been limited efforts to understand this market segment or find solutions specifically to target low-income areas. Apart from the project in Freetown, there have been limited examples of studying the issues in the poorer household market segment, or liaising with existing businesses that serve such areas. One key challenge of pro-poor service delivery is the fact that poor households live in areas physically inaccessible to vacuum trucks (on steep hill-sides, in densely populated areas, etc.), and have unlined pits which are difficult to empty through this technology**.** With the exception of Blantyre and Freetown, there has been limited efforts to develop appropriate solutions for such areas. Both examples focused on technological approaches to improve service standards and penetrate such areas with mechanized services, using gulpers (and other manual sludge lifting devices) and the MDU. In Dakar and Kampala, the main project focus was on vacuum truck operators. In Kampala and Blantyre, an NGO (Water for People) was training entrepreneurs for semi-mechanized emptying through Gulpers (appropriate for unlined pit toilets), although there has been limited engagement with such initiatives in the DfID/BMGF-funded projects to date.

In Freetown the project has specifically aimed to improve the services to poor areas, through training and technology transfer to existing manual pit emptiers, to help to improve the quality of their services. The project also tried to develop transfer stations, whereby the emptiers could discharge their waste for onward transportation to the treatment sites, however this activity was suspended. Despite efforts in Freetown to improve the lower-level services, it was found challenging to work with and improve these informal emptying groups[16], and the project has since shifted its focus increasingly to the vacuum truck operators, who are deemed more 'viable' for business development support.

The potential of the **public toilets** to ensure inclusive services is as yet unproven. The public toilets in Blantyre are located in areas such as markets and public transport transit points, which by default service lower-income residents. There is no specific obligations in the Blantyre or Freetown contracts regarding the affordability or subsidy for the poor, but there are stipulations regarding disabled access.

6.3 SUSTAINABILITY, LEVERAGING INVESTMENTS AND REPLICABILITY

Projects have enabled leveraged of investments by the public sector, demonstrating increasing buy-in and commitment from services authorities, national governments and other development partners to build on the BMGF/DFID-funded projects and further develop onsite sanitation services. In Accra, the line ministry contributed USD 155,000 towards the capital costs of the FSTP, while other development partners such as GIZ are contributing to funding follow-up

[16] Manual emptying groups are often informal, 'underground' and low-capacity, and members sometimes have issues in substance abuse. They are also highly stigmatized, and in some cities, manual emptying is defined as an illegal practice. These issues pose challenges for sanitation authorities to engage with such groups.

activities (such as marketing development). In Freetown, the project leveraged USD 400,000 in grant funding from the African Development Bank for infrastructure at the FS treatment site.

Private sector investments in the capital costs of public infrastructure has been limited. The most significant contributions are in Dakar (where the private operator has contributed to initial rehabilitation costs) and in Accra, where the operator brought in working capital (mobilizing staff a year prior to the FSTP launch). An estimated USD 90,000 has been mobilized by the private operator in Accra working capital to date. The Blantyre contracts oblige the private sector to invest in the assets which are leased to them, through the requirement to purchase a truck to mount the MDU onto (around $20,000) or installation of water tanks to upgrade the public toilets. However, this investment had not yet been made at the time of review, as the contracts had only just started. Regarding emptying services, the private sector is predominantly expected to invest in the capital costs of their own equipment, and various projects aimed to assist them to access credit to be able to do this. The exception to this is Blantyre where the capital costs for the MDU were met by grant funds, with ongoing operation and maintenance costs to be addressed by the private operator. Where there are examples of private investment in capital and start-up costs, these are (somewhat unsurprisingly) limited to those which are for privately owned assets, and for investments in public assets where there is a relatively long contractual duration (7 years Dakar, 20 years Accra).

There were various barriers to capital investments from the private sector, such as procurement procedures posing challenges for co-financing of infrastructural assets (Blantyre), challenges in the private sector accessing credit, and the lack of 'proven' business models that the private sector (or their financiers) were ready to invest in. Grants or public funds were used to de-risk capital investments in innovative business models. To encourage private sector investment, the former was expected to cover operational costs only. In more traditional treatment solutions such as in Dakar, higher risk was placed on the contractor, requiring them to invest in rehabilitation of facilities.

As presented in Table 5 below, most projects have predominantly relied on public funds (mainly the BMGF/DFID grant) for capital investments, while it was expected that operational costs would be covered by the private sector.

Table 5: Financing sources for various life-cycle stages of the various initiatives

SLA / contract Focus Area	Project preparation / studies	Construction / rehabilitation / procurement of assets (e.g. trucks)	Facility upgrading (post construction)	Operation and minor maintenance	Major maintenance (over duration of contract)	Other operating costs (e.g. marketing)	Monitoring and direct support costs
Containment							
Freetown public toilets	G	*G*	*Pr*	*Pr*	*Pr*	*G, Pu*	G**, *Pu*
Blantyre public toilets (markets)	G	G, *Pu, Pr**	*Pr*	*Pr*	*Pr*	*G, Pr*	*Pu*
Emptying and Transport							
Kampala	G	Pr	N/A	Pr	Pr	G, Pr, Pu	Pu
Freetown	G	Pr	N/A	Pr	Pr	G, Pr, Pu	G**, Pu
Durban	G, Pu	Pr	N/A	Pr	*Pr*	G, Pu	Pu
Blantyre	G	G	*Pr*	*Pr*	*Pr*	*G, Pr, Pu*	*Pu*
Treatment and disposal							
Dakar FS treatment plant operation	G, Pu	Pr, G, Pu	Pu	Pr	Pu, Pr	N/A	Pu
Accra waste treatment and conversion	G	G, Pu	?	Pr	*Pr, Pu*	Pr, Pu, G	Pu
Durban waste treatment and conversion	G, Pu, Pr	G, Pu	*G, Pu, Pr*	*Pr*	*Pu, Pr*	*Pr*	*Pu*
Blantyre waste treatment and conversion	G	TBD	TBD	TBD	TBD	TBD	*Pu*

*Notes: G = Public funds which are provided through the BMGF/Gates Grant, Pr = private funds, Pu = public funds (including other government sourced funds such as World Bank investments), TBD = to be determined; Text in italic font is where it is planned/contractual requirement, but not yet occurred; * Capex investment from the private sector and Blantyre City Council was envisaged but not forthcoming. It is expected that further construction cycles would include more private investment in the form of BOT arrangements; Much of the Freetown City Council's FSM Unit is currently financed by grant funds, however it is anticipated the full costs will be absorbed by the city council in future.*

It is challenging to appraise the *actual* sustainability of the PSP and contracts, given that many of the initiatives are in their infancy and are yet to be fully operational. Findings are therefore more related to prospects for *likely* sustainability.

There are variable findings on the actual and potential financial sustainability of the projects:

- eThekwini municipality is likely to continue to make financial provisions for supporting emptying services for the poor, as per the government policy, boding well for financial sustainability;
- In Accra, despite the risk involved in new business model, financial assessments suggest that the private operator will start breaking even by 2020, progressively recouping its working capital;
- In Dakar, there is a level of uncertainty with regards to FSTP capital maintenance, as there is limited evidence that ONAS is making financial provisions for future investments needs (including for rehabilitation and upgrading); other activities funded by the BMGF/DFID grant are also at risk: it is not clear whether the call center will continue to operate beyond the lifetime of the project due to ONAS' limited resources. This post-project continuity is also a risk in Freetown, where the project currently funds the majority of the costs of the FSM Unit established in the city council.
- Broader risks to financial sustainability across the projects include: the inability of some service authorities to ring-fence revenues for FSM services; and the lack of efforts to calculate and secure the direct support costs needed for the service authority undertake its function, for example in ongoing monitoring and enforcement.

Robust financial modelling is a key ingredient to understand likely financial sustainability from the inception of a PPP. Whilst the initial financial modelling of the potential contracts was not assessed in detail during this review, it is clear that efforts to undertake detailed modelling varied by project. For example, Freetown and Blantyre hired enumerators to survey actual usage of toilets to be leased, to assist in the subsequent financial modelling, and to inform bidding documents. However, efforts to model financing streams in emptying and transport services in both Freetown and Blantyre were considerably hampered by the lack of reliable data, not helped by the fact that some emptying companies were reluctant to share such data. Both in Accra and Dakar, financial modelling was carried out by the private sector to ascertain the financial viability of proposed contracts.

In addition to financial sustainability, the efforts to engage private sector for services, and the wider actions to help strengthen the viability for PSP and PPPs (such as strengthening institutional arrangements, building public and private sector capacity, working on legal frameworks and standards, and expanding the customer base) provide a more favorable basis for sustainability than the pre-project status quo.

Finally, there is some evidence that experiences will be replicated. In Accra**,** the partnership model between the municipality and the private operator is likely to be replicated with Dutch funding in other municipalities in Ghana, and there are interests of replicating the Durban BSF plant if it is proven to be successful. ONAS is also likely to replicate the concession model in other cities in Senegal, and numerous stakeholders from cities in Mozambique and Malawi have visited Blantyre, and are reportedly keen to replicate some of the concepts of the project around general PSP, and on private toilet management.

6.4 PARTNERSHIPS FOR PROJECT DELIVERY

There were various models used to channel the funding from DfID/BMGF to the cities and to deliver the projects. This section provides a brief reflection on these various models.

Table 6: Models for Project Delivery

	Accra	Blantyre	Dakar	Durban	Freetown	Kampala
Direct funding to service authority			X	X*		X
Partnership and funding to NGO	X	X			X	

** Funding to Durban was directed through Khanyisa, a consulting firm that has a long-standing partnership with eThekwini providing project management services. This is therefore categorized as direct implementation by eThekwini.*

As shown in Table 6, three projects involved direct implementation through the service authority, whilst the other projects involved the sanitation authority teaming up with an NGO or research organization who assumed fund and project management functions, in addition to taking varying roles of technical support and delivery of certain project activities.

A key finding is that there is no single model which would be applicable for all city contexts. In Freetown and Blantyre, issues of capacity of the service authority would have made direct partnership with the city councils a challenge, whereas the Kampala City Council Authority (KCCA) has a relatively unique status (in comparison to many city authorities in the region) whereby it is able to hire and retain highly qualified staff, and hence has good technical and project management potential. In Accra the project concept came directly from IWMI, who then looked for a council which they could implement with. The key findings regarding the various models are summarized below:

1. **Fiduciary risk, project management and technical capacity**: Some service authorities lacked the experience on or knowledge about FSM issues, and therefore were unlikely to have developed such FSM projects on their own. This is particularly the case in the more 'innovative' projects such as in Durban and Accra. In some cases the lack of robustness of the public financial management systems mean that direct funding to public entities can bring higher levels of fiduciary risk, requiring an in-country non-governmental entity to assist in financial management and oversight. The various projects were able to in-source considerable technical expertise, either through the staff of the grantees (many of the NGOs were relatively specialized), through contracted consultants, or through partnerships (e.g. the insourcing of WSUP Advisory and Ernst and Young in Freetown).
2. **Benefits in projects being directly implemented by the service authority:** Where projects were delivered directly through service authorities, the leadership and ownership was (unsurprisingly) strong. They were able to develop their capacity through 'learning by doing', and the authorities were able to push forward certain initiatives internally and with counterpart government entities, in a way which some externally driven projects may have struggled to do. Where the process is internally driven, it holds greater potential for institutionalization of initiatives, and hence the prospects of the service authority to sustain and replicate the initiatives. However this capacity strengthening and institutionalization was also achieved in projects that were partnered with the NGOs, particularly where the service authority was placed in a more 'leading' role.
3. **The benefits of having 'external' entities in initiatives working on PSP:** In Blantyre it was found that the bringing together of various stakeholders (e.g. public, private, financiers) primarily through workshops benefitted from having a 'neutral' broker to facilitate dialogue. In Freetown the role of the NGO in engaging private businesses was key, considering that such businesses were

actively avoiding the council at that time. In Freetown and Accra it was felt that engaging with and building the capacity of the private sector was best done through neutral external parties, rather than the service (contracting) authority.

4. **Implications for focusing on the poor:** In some contexts, city authorities are somewhat restricted in their ability and/or commitment to engage in informal settlements in the city. Additionally, the private sector, without clear incentives to service the poor, can often tend to focus on higher income customers. In such contexts the role of an external NGO, who may be more specifically driven in its objectives to target the poor, can be key to ensure pro-poor orientation of the project activities. This was the case in Freetown, for example.
5. **Challenges arising from channeling funds through partners:** Where the channeling of funds went to NGOs, the involvement of the service authority varied between the projects. Some cities were actively involved in the project design (Freetown, Blantyre, Durban), whilst in Accra the project was conceived and then the locality was then determined. Despite this initial involvement, there have been issues observed in Blantyre and Freetown in the councils wishing to invest a greater proportion of funds into "tangible" infrastructural assets, whilst this may not have been a focus of the project17. Such examples of misalignments of objectives, together with some limitations on involvement and communication with the councils regarding budget and project management issues, caused some frictions in the project delivery. In contrast however, Freetown and Blantyre city councils praised the strong partnership with the NGOs, and both projects had easy access to both technical and senior political figures in the councils, helping the projects to solve challenges quickly when they arose.

7. LESSONS ON ENGAGING THE PRIVATE SECTOR FOR URBAN SANITATION SERVICES

The six cities' experience bring in important lessons on the potential of PPPs and SLAs for delivering urban onsite sanitation services, as well as broader lessons with regards to inclusive service delivery.

7.1 LESSONS RELATING TO PPPS AND SLAS

The private sector can be successfully attracted to deliver urban onsite sanitation services under PPP arrangements with service authorities. However, whether services that are contracted effectively lead to the widespread leverage of private sector investments, direct benefits for the poor, or ensuring sustainable services at scale, remains to be demonstrated.

Experiences in Accra, Blantyre, Dakar and Durban show that PPP arrangements for urban onsite sanitation services can be brokered under the right conditions. These cities' experiences show that opportunities in onsite sanitation services can attract well-organized SMEs, able to deliver services in a professional and efficient manner. Key ingredients of success include:

- Clear rationale for PPP (i.e. contracting) in the delivery of basic services;
- Early engagement with potential service providers;
- Careful contract preparation to identify the optimum legal arrangement and risk allocation between contracting parties;

[17] In Blantyre for example the city council was keen to use the funds to rehabilitate the existing sewerage treatment plants, which would have required the majority of the project budget, and was not directly aligned to the objectives of the on-site sanitation focused project.

- Flexible procurement arrangements that can be workable with local procurement procedures, which can adapt to the capacity of potential service providers, and can address some innovative aspects of sanitation services to be provided.

Due to the relatively innovative nature of PPPs in the sector as well as some of the services, engaging the private sector in their design is crucial, particularly when it comes to designing a framework of shared risk. In Accra, where the project sought to scale-up the sale of the fertilizer, it was important to carefully explain to prospective candidates the nature of the projects, the roles of each party as well as risk and benefits involved. Not only did such a procedure enable the contractors to better understand the project, but the service authority could also assess the suitability of candidates.

Financial due diligence is particularly critical to assess the risk involved and careful decisions are needed as to how to balance risk between contracting parties. Where potential revenues from tariffs (or sales of FS by-products) can be significant, and where the private contractor has appetite for risk, remuneration can therefore be based on tariffs, and contractors' responsibilities towards assets management can be increased. Where tariffs are likely to be low (or nil), as in the markets for UDTs emptying in Durban partly because of government policy, then alternative remuneration mechanisms have to be identified. In high-risk contracts, risk mitigation measures were introduced, including: sufficient time for the operator to recoup its investments (a seven-year contract in the concession Dakar) and joint ownership of the FSTP in Accra to the private operator, to ensure full buy-in and investments in initial working capital and future capital costs. In contexts where investments were riskier, in terms of business models which had not been proven such as for the treatment plants in Durban and Accra, grant funding was key to de-risk the contracts and encourage private sector engagement. This was also the case for the first set of public toilets to be outsourced in Blantyre. However, in the case of Durban, the PPP model (where the private partner was not required to invest in the capital costs of the FSTP, and is paid a fixed fee to operate), there is arguably an overcompensation of risk from the private to the public sector, theoretically leaving less incentives for the private partner to perform.

As public procurement for onsite sanitation services represented an innovative step for several service authorities, flexible procurement processes were essential to effectively engage with private operators. In Dakar, for example, only one bid was received following the call for tenders; and despite this, the contract was awarded (following negotiations). In Accra, as the project team sought to introduce a Public-Private Joint Venture model, the objective of the procurement phase was to identify the private partner for the Joint Venture. The Joint Venture agreement was awarded before the FSTP construction started; technical specifications and performance indicators were to be annexed to the Joint Venture agreement at a later stage. Similarly, where there are local ambitions to grow the small scale and existing private sector in FSM services, such as in Blantyre for the public toilet management, careful consideration was needed in terms of the scale of operations that are being tendered, and the required capacities of bidders. Whilst the PPP and SLA model was not easily applicable in the procurement processes of some cities (e.g. Durban, Blantyre), projects took a flexible approach to adapt to the local contexts. The duration of procurement was lengthy in most cities, reflective of the need for adaptation of processes, engaging of national institutions (such as the PPP Commission) and/or negotiations with private partners. Such timeframes should be considered in the design of future PPP-oriented projects in similar contexts.

Beyond contract award, ongoing support to the private operator (in marketing FS products, for example) or to improve operational efficiency should also be accounted for. This is particularly the case for "new" products, which have not been brought to the market at scale. This support should be provided in a wider context of improved performance monitoring. In Dakar, the

FSTP concession contract stipulates that a management board for the PPP will be formed and meet regularly. However, to date (three years after contract start), the board has yet to meet. The situation is making communications between DELVIC and ONAS difficult.

As previously stated, there is limited evidence of the direct benefits of PPP contracts (and wider activities to strengthen PSP) on poor urban households. Public and grant funding can potentially be key in incentivizing markets to service the poor, although the cost effectiveness of this is yet to be proven in the six cities. More evidence needs to be gathered and tracked to assess the potential of the PPPs for poor urban households. As such, future projects seeking to improve sanitation services for the poor should endeavor to embed baseline studies on the situation of services for poor households, establish targets specific to poor households, identify adequate contractual mechanisms (e.g. financial incentives, clustering service areas of different income levels) and measure progress in increasing service levels for the poor. From the limited project experiences, it confirms the notion that markets require incentives to reach the poor. The two contracts that included such pro-poor focus achieved this through adding conditions onto the lease agreement of public assets (Blantyre MDU), or through directly paying for services for poor households (Durban). Public (and grant) funds can potentially be key in encouraging services for the poor, for example through some element of subsidy for the service (as the case in Durban), in de-risking the acquisition of assets that can be used to more effectively reach the poor (e.g. the MDU in Blantyre purchased through grant funding), and wider public sector actions to make services more accessible to the poor (e.g. the call centers aiming to reduce the customer cost of vacuum truck emptying, or establishment of transfer stations). However, the cost-effectiveness of using public funds for such actions (and others) should be further reviewed, to ensure that limited public resources are targeted in the most effective manner.

From the project examples, the concept of PPPs and SLAs seem more applicable where these rely on public assets, or public financing for services. In the absence of these conditions (for example in private sector owned, customer financed emptying services), there is less scope for direct private sector contracting, and instead more focus on licensing and regulation of their activities.

7.2 WIDER LESSONS LEARNED ON PSP FOR FSM SERVICES:

In addition to PPP-specific findings, the following lessons relate to PSP in FSM services more broadly.

In cities which have limited experience in PPPs, service authorities may require specific support to help them take on their roles as a client, regulator and enabler. Many of the city councils undertook direct service provision before the projects, and shifting away from this to a role of encouraging and regulating private sector service provision, requires new skills, and a clear strategic direction change by the city authorities (e.g. to move from ‘player to referee’). In Freetown and Blantyre, both with relatively resource-poor councils and limited experience of PPPs, the council’s expectations for PPPs were primarily around the revenue generation potential for the city council, and hoping to ‘offload’ some costs of services to the private sector, with less clarity in the council around what the councils would ‘bring to the table’ to enable PSP and PPPs. In helping such service authorities take on their new roles, there should be support to strengthen the authority’s understanding of such roles and processes, and to build the requisite capacity and systems, for example in contract management, monitoring and enforcement. Whilst external technical assistance can be effective, support can also be levered from PPP Units within the central governments, for example in Blantyre where the PPP Commission provided ongoing mentoring support to the city council.

Projects focusing specifically on FSM helps put the spotlight on this often-neglected sub-sector. However, there are also potential gains to be made by integrating initiatives in solid and liquid waste management. Focusing these projects specifically on FSM raised the awareness

and capacity in the public and private sector on FSM. However, by having such a focused (or 'siloed') project, it may have limited opportunities in some circumstances to take a more integrated approach to urban sanitation services, for example considering both solid and liquid waste[18].

Establishing standards for service levels is an important step, although PSP initiatives should also consider arrangements to ensure standards are monitored and enforced. Such enforcement is key to the viability of private sector viability in FSM and models reliant on top-down enforcement can be augmented by innovative approaches. The viability of (improved) private sector-led services is somewhat dependent on the lower-cost alternative to that service being precluded[19]. Where there are not clear incentives for the private sector to adhere to such service standards, monitoring and enforcement is particularly essential. However, few of the cities engaged directly in strengthening enforcement arrangements. Traditional top-down models of regulation, as used in other sectors, may not by themselves be adequate for PSP in FSM services, particularly in weak governance contexts. Grant investments can be key to develop innovative and cost-effective monitoring and regulatory measures (such as GPS tracking of vacuum trucks in Kampala), and additional modes of monitoring and enforcement can complement the public sector efforts, such as from tenants denouncing landlords who fail to provide services; from associations who denounce non-compliant members or competitors; from the public reporting violations, etc. In Freetown, Kampala and Dakar there were also efforts to provide incentives to adopt such standards (and engage more generally with the service authority), such as laying their adoption as pre-requisites to access loan guarantees, business development support, or to register with the call centers.

Reaching the poor through PSP requires deliberate and concerted efforts, we well as political will to engage (and invest) in pro-poor services. Whilst many of the projects focused on vacuum truck emptying services, there are various financial, physical (and likely political economy) barriers which make such services more difficult to access by the poor. The poorer market segments in the cities seem to be serviced predominantly by lower levels of emptying services, such as manual emptying and gulper services. However, few projects aimed to engage with such lower-level services. There have been various efforts to address these barriers, including through technology transfer (Gulpers and MDUs), through efforts to cost reduce vacuum truck operator services, and through cross subsidies. There has been relatively limited engagement with the businesses that already service low-income areas (apart from in Freetown), and where efforts have been made, such small scale and often informal businesses have proved challenging to provide business development support. The reasons for the relative lack in public sector (government) investment (aside from Durban) towards specific actions to improve the poor, would merit further review.

Getting the private sector to further engage in FSM can be challenging until the market is 'proven', and grant funding and public-sector investments can be key to help this process. The experience in the cities is that in aspects of the FSM chain that are not yet 'proven' business models (such as for innovative treatment approaches, or BOT arrangements for public toilets), it can be challenging to encourage new players into the FSM space, or expect capital investments from the private sector or their financiers (e.g. banks and MFIs). Projects such as those in the six cities which

[18] Examples of linkages between the waste streams include: the capacity for outsourcing and managing liquid and solid waste services would be a similar skill set, meaning the same department could theoretically manage both; businesses in solid waste could grow into liquid waste services, and vice-versa; poor solid waste results in garbage in pit toilets; some re-use activities require the mixing of solid and liquid waste; integrated planning could identify sites which could be appropriate for skips, transfer stations, public toilets, landfills and FSTPs.

[19] For example, the potential viability of pay-for-use public toilets in Blantyre is reliant in part on the enforcement against open defecation/ urination. Emptying businesses in Freetown and Kampala adopting the agreed service standards can be undercut in terms of price by operators who 'cut corners' and do not follow the standards.

utilize grant funds to help gather market intelligence on the sub-sector, help to build the capacity of the private sector, and support the initial capital costs of ‘pilot’ initiatives, can be a key first step in preparing the sector and its local investors to progressively engage and invest in FSM. As governments are starting to engage with non-sewered sanitation services, investments need to be made not only in public infrastructure, but also in incentivizing the private sector in improving service levels and increasing access to the poor.

BIBLIOGRAPHY

Alcock, N.; Wilson, D.; Still, D.; Mercer, S.; Gounden, T. and Buckley, C.: Testing Municipal Regulations Governing Public Private Partnerships in the Water And Sanitation Sector. Khanyisa Projects, eThekwini Municipality Water and Sanitation and University of KwaZulu-Natal. South Africa

BCC (2016): Operating Standards for Public Toilets

BCC (2017): Concession Agreement for the Operation & Maintenance of Pay & Use Public Toilets at Limbe Produce 1

BCC (2017): Draft Operating Standards for Fecal / Septic Sludge Management Services

BCC/WASTE (2015): Diamond Workshop Report – making service level agreements work for the improvements of service delivery in public toilets

BCC/WASTE (2015b): Baseline Mapping of Existing Public Toilets and Proposed New Toilets

BCG (2014): Working Paper – Urban Sanitation: Why a portfolio of solutions is needed

Castalia (2014): Improving Sanitation Outcomes through Service Level Agreements: A Guidance Note. BMGF

Collet, S. (2017): Shit Flow Diagram: Blantyre City, November 7th 2015. NOTE THIS IS STILL A DRAFT IN DISCUSSION

DELVIC. (2016): Rapport Annuel Année 2 : Novembre 2014 - Octobre 2015.

E&Y (2017): SE Lines: Inaugural Business Plan 2017-18

eThekwini Municipality (2014): Project proposal Urine Diversion Toilet Waste Removal, Disposal and Processing in Durban. Additional Authors: Khanyisa Projects, eThekwini Municipality Water and Sanitation and University of KwaZulu-Natal. South Africa

FCC/FSM Unit (2017): Faecal Sludge Management Standard Operating Procedures

Forte, J (2016): Baseline Establishment for Sustained Environmental Health Improvements in Freetown, GOAL Sierra Leone

Freeman, W (2017): Community Awareness Baseline Assessment Report – Faecal Sludge Management Project

Freetown City Council (2015): MoU for Manual Pit Emptiers

GOAL (2014): Phase 1 and Phase 2 Proposal Report: Achieving sustained environmental health improvements in Freetown through faecal sludge management enterprises

GOAL (2015): Project Proposal to BMGF: Achieving sustained environmental health improvements in Freetown through faecal sludge management enterprises

GOAL (2016): GOAL-FSM Results Framework 2016-10-28

GOAL (2017): Faecal Sludge Management, Freetown Sierra Leone: In search of a viable business model for transfer stations summary report, May 2017

GoSL (2014): The Public Private Partnership Act, 2014

Greene Nicola (2015): Human Waste Based Business Opportunities in Blantyre, Malawi

GSS. (2013): 2010 Population and Housing Census

Imani (2016): Business Model Development on Toilet Emptying and Desludging Activities – Final Report

IPA. (2012): Market Structuring of Sludge Management for the Benefit of Vulnerable Households in Dakar Poor sanitation.

IPA. (2012): Market Structuring of Sludge Management for the Benefit of Vulnerable Households in Dakar Poor sanitation.

I-San Associates (2017): Country Profiling: Investment Potential in Waste-to-Resource

IWMI. (2013): Scaling out the Recovery of Nutrients and Organic Matter from Faecal Sludge for Food Production in Ghana: From Waste to Food (WaFo). Proposal to the BMGF.

IWMI. (2017): The Fortifer production plant. Factsheet.

JMP (2017): Access to sanitation services in Africa. Accessed at: washdata.org

KCCA (2010): Kampala Capital City Act, 2010. Kampala

KCCA/ GIZ/ SDC (2015): Framework Conditions for Private Sector Engagement. Kampala

KFSM (): KFSM Household Survey. Kampala

KFSM (2016): KFSM Annual Report 2016. Kampala

KFSM (2016): KFSM Project Operationalisation Document. Kampala

KFSM (2017): KFSM Baseline Report 2017. Kampala

Maessen, S (2015): Workshop Report: Diamond Workshop, January 2015

Mansour, G., & Esseku, H. (2017): Situation Analysis of the Urban Sanitation Sector in Ghana. WSUP.

Mikhael, G (2011): Sanitation Market Assessment, Freetown Sierra Leone: Volume II: Assessment of Fecal Sludge Emptying Services

ONAS. (2011): Proposal. Program for the structuring of the fecal sludge management market for the benefit of poor households in Dakar.

ONAS. (2014): The call center for fecal sludger: An innovative tool to reduce the cost of desludging services.

ONAS. (2016): Rapport Annuel 2016. Programme de structuration du marché des boues de vidange (PSMBV) en faveur des populations demunies de Pikine et Guediawaye .

ONAS. (2017): Evaluation à mis-parcours. Programme de structuration du marché des boues de vidange dans la zone de Pikine et Guédiawaye (PSMBV).

Phekiso (2017): Provision of Consultancy Services to Assess Five Treatment Sites in Blantyre. Final Report

SFD (2016): eThekwini. South Africa

Trémolet, S., Kolsky, P., & Perez, E. (2010): Financing on-site sanitation for the poor. WSP.

TREND. (2013): Options for public-private partnership (PPP): a review of literature with special focus on choosing an appropriate PPP option for the Fortifer production facility in Ghana.

Uganda (2014): Census

UN. (2017): The World's Cities in 2016. Data Booklet.

UNDP (2017): Development Reports accessed at http://hdr.undp.org/

UNHabitat (2006): Situation Analysis of Informal Settlements in Kampala. Cities without Slums. UNHabitat

WASTE (2013): Proposal Narrative – Sanitation Service Level Agreements Blantyre City (SSLABC)

WASTE (2015): Baseline mapping of existing public toilets and proposed new toilets

WASTE (2015b): Progress Report: Sanitation Service Level Agreements in Blantyre City

WASTE (2016): Progress Report: Sanitation Service Level Agreements in Blantyre City

WASTE (2017b): Progress Report: SSLA Blantyre – PPT Presentation, July 2017

World Bank (2015): PPP resources accessed at https://pppknowledgelab.org

World Bank (2017): Ease of Doing Business in Sierra Leone

World Bank (2017): Open Source Global Development Data accessed at https://data.worldbank.org/

WSUP (2016): Strengthening of the Private Sector in Collection and Transport of Fecal Sludge

WSUP (2016b): Strengthening the Regulatory Environment and Improved Public Infrastructure for Fecal Sludge Management in Freetown

WSUP (2016c): Strengthening FSM in Freetown. Desk Study. Consultancy Report CA01839/PVSY/GOA-01

WSUP (2017a): Final Narrative Report: Shit Flow Diagram and Assumptions – September 2017

WSUP (2017b): First Draft on the Financial Sustainability of the FCC FSM Unit in Freetown, Sierra Leone

WSUP (2017c): Service Level Agreement for Public Toilets, Freetown City Council, Sierra Leone – Draft. June 2017

WSUP (2017d): Briefing Note: Kingtom Situational Analysis and Investment Plan- October 2017

ANNEX 1: SERVICE AUTHORITIES' ROLE IN ONSITE SANITATION SERVICES PRIOR TO PROJECT DESIGN

	Service authority	Services provided in practice*	City-level regulatory mechanisms in place, if applicable
Tema (Accra)	Tema Municipal Assembly (TMA)	Sewerage services (managed by a private operator); public toilets (managed through franchise agreements)	• Licensing vacuum truck operators • Monitoring usage of FS dumping site
Blantyre	Blantyre City Council (BCC)	Provision and management of public toilets; management of sewerage network and treatment plants, operation of a vacuum truck service	• Limited monitoring of emptying services (no licensing in place) • Limited and inadequate monitoring of the quality of public toilets
Dakar	ONAS	Provision of household facilities**; management of three FSTP; emptying services for institutional offices	• Licensing vacuum truck operators • Monitoring usage of FS dumping site
Durban	eThekwini Metropolitan Municipality (eThekwini)	Provision of household facilities and treatment plants	
Freetown	Freetown City Council (FCC)	Management of a vacuum truck emptying service, management of public toilets (operated by caretakers)	• Limited monitoring of FS emptying services (no licensing in place); • Limited and inadequate monitoring of the quality of public toilets
Kampala	Kampala City Council Authority (KCCA)	Management of the treatment facilities and provision of emptying services for institutions	• Licensing vacuum truck operators

**Before or at time of project design*
***ONAS implemented a large World Bank-funded onsite sanitation program so-called PAQPUD that subsidized the construction of 40,671 household facilities between 2002 and 2011.*
****EThekwini had subsidized the installation of Urine Diversion Toilets (UDTs) in over 80,000 households*

ANNEX 2: CONCEPTS AND DEFITIONS USED IN THIS REPORT

Throughout this report, a number of key terms are used to refer to sanitation services and PSP modalities. Underlying definitions of these key terms are proposed below.

The Sanitation Value Chain

Sanitation services refer to the provision of facilities and services for the safe disposal of human urine and faeces. In order for urine and faeces to be adequately disposed-off, a number of services may be required, including:

- **Containment**: collection and storage of excreta, usually in the form of self-provision by households investing in own systems:
- **Emptying and transport** of fecal sludge where septic tanks and latrine are full;
- **Treatment** which either takes place on-site as with some septic tanks or off-site, when sludge is transported to a Fecal Sludge Treatment Plant (FSTP);

- **Disposal** in the environment, which can be safe or unsafe, depending on the level of treatment that occurs previously; and
- **Reuse:** services that enable waste streams being converted into valuable resources, such as fertilizer, charcoal or biogas.

Each of these services can be referred to as a segment of the **sanitation value chain**.

PSP modalities

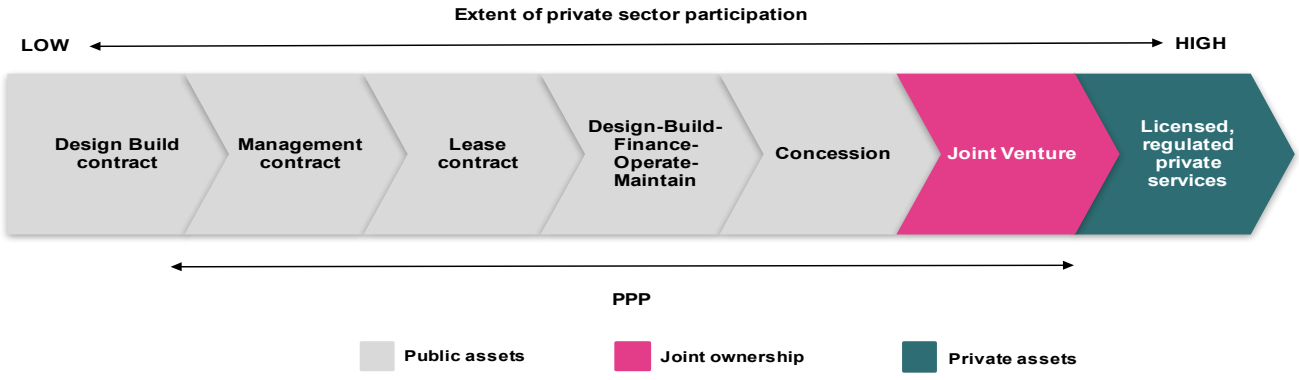
PSP refers to the participation of private sector actors (individuals or enterprises, both formal and informal) in service delivery. PSP can "naturally occur or be brokered through Public-Private Partnership (PPP) agreements. These broad occurrences of PSP are presented below:

"Naturally occurring" PSP refers to situations where private service providers naturally operate in the markets; for example, i.e. prior to and without any formal agreement with the public authority; this is the case of the many emptying and transport service providers operating across SSA that have filled the vacuum of municipal services for urban sanitation; these service providers usually operate their own assets (small equipment and trucks). Some cities have banned certain types of emptying services (as in Accra for manual emptying) and have introduced a licensing system to regulate the provision of services. These processes that are in place (or absent) at city level to organize sanitation markets are referred to in this report as "formalization processes".

PSP can also be brokered through **PPP agreements**. In this report, PPP is used as per the World Bank definition: PPP is "a long-term contract between a private party and a government entity, for providing a public asset or service, in which the private party bears significant risk and management responsibility and remuneration is linked to performance".[20] This definition supposes that a PPP can be brokered for the management of existing public assets or for new assets.

PPP contract modalities are numerous, with a continuum of operating risk transferred from the public party to the private entity, depending on the extent of PSP in managing the infrastructure and the source of financial remuneration (**Error! Reference source not found.**). The higher the exposure to market uncertainty (particularly with regards to demand), the higher the operating risk.

Figure 4: PPP Continuum



Source: Adapted from PPP knowledge Lab (https://pppknowledgelab.org)

It is worth noting that PPPs can be brokered with private operators already operating in the markets (but previously under no legally binding agreement with the public authority), for example to increase

[20] *https://pppknowledgelab.org.*

service levels provided or with contractors which were not previously involved in the specific market segment.

Service Level Agreements

Service Level Agreements (SLAs) refer to contractual arrangements between the public authority and private sector organizations. A consultancy company called Castalia was engaged by BMGF/DfID to develop guidance notes on SLAs for onsite sanitation services, which were aimed to provide support to the grantees. In the 2014 guidance note, Castalia define SLAs as contractual arrangements that tie the disbursement of public funds to the private contractor and to the achievement of specified outputs or service levels.

The SLA guidance document recognizes that improvements in urban sanitation services requires some public investments, especially in emptying, transport and treatment services, as capital costs can be high. SLAs provide an approach for contracting the private sector to deliver the infrastructure and provide services, on behalf of the public sector. The guidance document further specifies that in order to guarantee that public funds are used in the most efficient manner, at least parts of public funds are disbursed following verification of the private contractor's performance on specified outputs.

Licensing

Licensing is an authorization granted by the public authority to a private (or public) operator for performing a specific economic activity under specified conditions. For example, for urban onsite sanitation services, such conditions can include the requirement for emptying service providers to use designated disposal sites. In many cities in SSA, however, urban onsite sanitation service providers operate informally and without any license specifically binding them to service standards. Licensing is not a contractual arrangement, as the private operator remains free to withdraw from the provision of services.

Service authorities

This study refers to the public entity legally responsible for sanitation services in the city as the "service authority". In most countries, the service authority is the local government (e.g. City Council), who has devolved responsibilities to ensure basic services, including sanitation. However, in some contexts, as in Senegal, the service authority is a state owned national autonomous entity, which is responsible for sanitation across all cities.

ANNEX 3: CITY BRIEFS

<table>
<tr><th colspan="2">ACCRA (TEMA)</th></tr>
<tr><td>Project name</td><td>Scaling out the Recovery of Nutrients and Organic Matter from Fecal Sludge for Food Production in Ghana: From Waste to Food (WaFo)</td></tr>
<tr><td>Grantee</td><td>International Water Management Institute</td></tr>
<tr><th colspan="2">CITY CONTEXT</th></tr>
<tr><td>City population</td><td>2,316,000</td></tr>
<tr><td>Country HDI</td><td>0.579 (139)</td></tr>
<tr><td>Access to sanitation services</td><td>50% access to improved onsite sanitation services</td></tr>
<tr><td>Key issues in FSM at time of project design</td><td>• Weak regulatory environment for FSM
• The percentage of treated sludge was quasi nil before WaFo project</td></tr>
<tr><td>Institutional arrangements</td><td>• Key national Institution: Ministry of Sanitation and Water Resources (MSWR)
• Service Authority: Tema Municipal Assembly (TMA)
• Service Provider(s): Private operators under contract or license with TMA</td></tr>
<tr><th colspan="2">PROJECT DESIGN</th></tr>
<tr><td>Implementing partners</td><td>TREND, TMA</td></tr>
<tr><td>Project cost (USD Million)</td><td>1.1 (and land contribution from TMA)</td></tr>
<tr><td>Start date-end date</td><td>2013-2015</td></tr>
<tr><td>Project components</td><td>• Construction of FSTP and installation of production units (five drying beds, can treat over 12,000 m^3 of FS a year and is designed to produce 500 tons of Fecal Sludge-based compost (so-called Fortifer) every year
• Contract design and tendering
• Marketing development
• Explore replicability</td></tr>
<tr><td>PPP objective</td><td>• Scale-up the production and sale of FS-based fertilizer
• Demonstrate viability of fertilizer business</td></tr>
<tr><td>Other engagement with private sector</td><td>• n/a</td></tr>
<tr><th colspan="2">PROJECT IMPLEMENTATION</th></tr>
<tr><td>Key activities implemented</td><td>• Development and implementation of a PPP model for producing and marketing the Fortifer:
  ○ PPP study to identify suitable PPP contract
  ○ Certification obtained for the sale of Fortifer
• Securing off-take contracts
  ○ Development of marketing activities to develop the customer base for Fortifer through media communication, workshops and other public events
• Demonstrating the benefits of the Fortifer
  ○ Disseminate the findings and garner interest in replicating approach
• Establishment of a replicable service delivery model
  ○ Sharing lessons with policy makers and engaging with other municipalities to replicate the model (while taking lessons from the experience in Tema)</td></tr>
<tr><td>Progress in PPP/SLA design and procurement to date</td><td>PPP in implementation: Joint Venture (JV) agreement between TMA and private operator Jekora Venture Limited (JVL) signed in September 2014 and construction activities started soon after</td></tr>
<tr><td>Contract design</td><td>
<table>
<tr><th>Feature</th><th>Contract specifics</th></tr>
<tr><td>Services</td><td>Production and marketing of at least 500 tons of Fortifer (FS by-product) per year</td></tr>
<tr><td>Nature of contract</td><td>Joint Venture</td></tr>
<tr><td>Duration</td><td>Undetermined</td></tr>
</table>
</td></tr>
</table>

ACCRA (TEMA)		
	Remuneration mechanism	• Tipping fee from truck operators delivering FS to the Fortifer plant • Payments from the sale of Fortifer
	Responsibilities towards assets maintenance and rehabilitation	• Equally shared between JVL and TMA
	Profits sharing	• 80% to private sector and 20% to public partner in the cost recovery phase • 50% to both parties in the surplus phase
Procurement modality (if applicable), processes and outcome	A negotiated procurement procedure was carried out. Private operators were assessed against a set of selection criteria. These included: • Readiness to commitment to WaFo's objectives; • Having a social vision agenda; • Being an entity registered in Ghana; • Experience of a working relationship with municipalities in Ghana; • Experience in waste management; • Marketing experience; and • Ability to contribute to the Plant's working capital.	
Implementation, monitoring and results to date	As of November 2017, the FSTP was functioning at near full capacity and was receiving FS from all neighbouring Assemblies. Moreover, both TMA and JVL have been fulfilling their obligations as planned. Since the start of operations, JVL has invested over USD 90,000 in operating costs, including staff and electricity.	
ASSESSMENT		
Sustainability	• The WaFo project, through its approach to PSP, was designed to ensure the sustainability of treatment and re-use services. • The project generated strong buy-in among TMA, national decision-makers and other development partners. • The choice of the private partner, JVL, is likely to contribute to the sustainability of the *Fortifer* business.	
Equity	Outcomes on equity and pro-poor outcomes of the JV agreement are difficult to assess in the absence of hard data in this area.	
Overall lessons on PSP for onsite sanitation services in the city	• WaFo project provides insights on how to engage with the private sector in contexts where the private sector may be present and dynamic in other municipal services. • The main challenge to attract the private sector was to identify the adequate contractual arrangement. • In a context where the PPP is rolling-out an innovative product or service such as the *Fortifer*, expectations on the nature of private sector's financial participation should be realistic. • The timeframe for designing and securing the PPP extended, by far, the team's original expectations, although WaFo was implemented in a highly decentralized context, where local governments' responsibilities were clear. • The financial viability of the underlying business model still needs to be proven, however the JV in Accra demonstrates that experienced and well-organized private entities can be attracted to the sanitation sector to bring management efficiencies and commercial orientation.	

BLANTYRE	
Project name	Service Level Agreements for Private Sector Engagement in Urban Sanitation Services
Grantee	**WASTE**
CITY CONTEXT	
City population	Approximately 1.1 million
Country HDI	0.476 (170)

<table>
<tr><th colspan="2">BLANTYRE</th></tr>
<tr><td>Access to sanitation services</td><td>Data on containment and emptying services in Blantyre is a challenge. Available data suggests 10-20% rely on sewerage networks, 26% use septic tanks, 21% use linked pit toilets, 41% use unlined toilets.</td></tr>
<tr><td>Key issues in FSM at time of project design</td><td>• Number of gaps in legislation, particularly relating to standards of service, limited capacity of Blantyre City Council (BCC) on FSM issues and contracting.
• A relatively under-developed vacuum truck operator (VTO) market, widespread usage of Manual Pit Emptiers (MPEs), some households use untreated sludge for fertilizer, no wastewater treatment plants designed to handle FS, poor levels of service in public toilets.</td></tr>
<tr><td>Institutional arrangements</td><td>• National Institutions: Ministry of Agriculture, Irrigation and Water Development, Public Private Partnerships Commission (PPPC)
• Service Authority: Blantyre City Council (BCC)
• Service Provider(s): BCC is responsible for operating the sewerage treatment network and wastewater treatment sites and operated most of the public toilets, private operators provide emptying services.</td></tr>
<tr><td colspan="2">PROJECT DESIGN</td></tr>
<tr><td>Implementing partners</td><td>Blantyre City Council (BCC)</td></tr>
<tr><td>Project cost</td><td>US$2.6 million</td></tr>
<tr><td>Start date-end date</td><td>2014-2018</td></tr>
<tr><td>Project components</td><td>• Public awareness on fee-paying public toilets and emptying services.
• Working on enabling environment including legislation and stakeholder engagement.
• Facilitating access to finance for emptying service providers.
• Rehabilitation and construction of public toilets to outsource to private operators.
• Infrastructure and management models for privately managed FSTPs and the valorisation of facilities.</td></tr>
<tr><td>PPP objective</td><td>• Improve management of public toilets.
• Develop emptying services.
• Develop treatment and reuse services.</td></tr>
<tr><td colspan="2">PROJECT IMPLEMENTATION</td></tr>
<tr><td>Key activities implemented</td><td>• Exchange visits to learn from other countries (Dakar, Hanoi).
• ‘Diamond Workshops’ held to bring stakeholders together, create an enabling environment for progress, and agree on FSM service standards.
• Undertaking of studies in FSM, such as engineering and due diligence assessments on existing public toilets, customer numbers of toilets, waste valorisation scoping study, engineering assessment at the FSTPs, and a study on the emptying services industry.
• General capacity strengthening of BCC and the private sector, engagement of financiers: capacity strengthening done through engagement of BCC in workshops and exchange visits. Efforts were made to engage local banks to loan to the private sector, including investigating the option of loan guarantees.
• Strengthening standards and regulation in FSM: service level standards defined in stakeholder workshops for public toilets. Operating standards for emptying services defined using examples from elsewhere and discussed with BCC. Efforts are ongoing to integrate standards into local bylaws.</td></tr>
<tr><td>Progress in PPP/SLA design and procurement to date</td><td>BCC had been able to design contracts for the outsourcing of the operation of one Mobile Desludging Unit (MDU) and the management of 19 public toilets at market sites. These contracts were signed in October and November 2017 respectively.</td></tr>
<tr><td>Contract design</td><td>
<table>
<tr><th>Feature</th><th>Public Toilets (Markets, Phase 1)</th><th>MDU</th></tr>
<tr><td>Services</td><td>Public toilets (from 1-maximum 3 facilities per contract)</td><td>Mechanical Emptying Equipment</td></tr>
<tr><td>Nature of contract</td><td>“Concession contract” (Understood to be a Lease)</td><td>“Concession contract” (Understood to be a Lease)</td></tr>
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<table>
<tr><th colspan="4">BLANTYRE</th></tr>
<tr><td></td><td>Duration</td><td>5yrs, reviewed annually</td><td>5yrs, reviewed annually</td></tr>
<tr><td></td><td>Remuneration mechanism</td><td>• Operator keeps user tariffs. Operator can set tariffs, to be reviewed/agreed by BCC annually. Base tariff as per negotiated bid offer.</td><td>• Operator keeps user tariffs. Maximum user fee capped at MK 25,000. The basis for the review of the tariff cap is unclear.</td></tr>
<tr><td></td><td>Responsibilities towards assets development, maintenance and rehabilitation</td><td>• Capex and CapManEx financed by grant funding
• Operator required to invest in adding 5m^3 tank within 3 months of contract signature, and is able to choose to upgrade facility at their own costs (agreed with BCC)
• Operator responsible for full O&M costs and works (including major repairs)</td><td>• Asset purchase by grant funding
• Operator required to invest in a truck on which the MDU can be mounted
• Operator required to pay full O&M costs including major repairs</td></tr>
<tr><td></td><td>Special conditions /obligations of note</td><td>• Requires reporting of incomes to BCC
• A security deposit was required to be paid being the equivalent of six-months' worth of rental payments
• Monthly fixed lease free</td><td>• Requires reporting of incomes to BCC
• Termination clause if the unit is out of service for >3 months
• 60% of working time should be spent within BCC boundaries
• Monthly fixed lease free</td></tr>
<tr><td>Procurement modality (if applicable), processes and outcome</td><td colspan="3">An open, unrestricted tender process was used. The project experienced considerable delays in procurement, partly because it was the first time BCC was undertaking PPPs, and various clearances and mandate clarifications were required at the national level.
<u>Public toilets for markets</u>:
The 19 market toilets were initially thought to be outsourced in 'bundled lots' to allow operators to cross-subsidize between busy and quieter facilities in their portfolio. However there was a preference to award a smaller number of facilities per bidder, to spread the risk of failure, spread the opportunities to numerous businesses, and not over-stretch the capacity of the private sector. The main selection criteria was based on the monthly fee to be paid to the BCC.
<u>Procurement for the MDU</u>:
The opportunity to bid for the lease of the MDU was advertised twice, however there was only one company that submitted a bid. The procurement process included the PPPC who was part of the evaluation committee.</td></tr>
<tr><td>Implementation, monitoring and results</td><td colspan="3">Implementation has not started, neither of the contracts were operational at the time of the review.</td></tr>
<tr><td colspan="4">ASSESSMENT</td></tr>
<tr><td>Sustainability</td><td colspan="3">The BCC appears to be ready to establish a dedicated, ring-fenced bank account for the revenues of the public toilets, to then re-invest in capital and capital maintenance activities for other toilets.</td></tr>
<tr><td>Equity</td><td colspan="3">There has been relatively limited analysis of the emptying services used by the poorest segment of society, although the introduction of the MDU is an example of technological initiatives to meet the needs of the poor.</td></tr>
<tr><td>Leveraging of investments</td><td colspan="3">The project design anticipated considerable leveraging of private sector and BCC, to compliment the funds from BMGF, however it has so far been limited.</td></tr>
<tr><td>Overall lessons on PSP for onsite sanitation services in the city</td><td colspan="3">• Introducing pay-for public toilets is complex and requires considerable consultation. The viability of pay-for-use schemes is somewhat reliant on the support of stakeholders other to the private operator, such as enforcement against vandalism and open urination.
• Starting down the road of PPPs takes time when the process is 'trail blazing'. Whilst it can create delays risking reduced project outcomes, the benefit of having 'blazed the PPP trail', and building BCC capacity in doing so, is worth some of the trade-offs in achieving project targets.</td></tr>
</table>

BLANTYRE	
	• Standards can be easy to produce, but the enforcement is the key to success. Enforcement in a resource-stretched public sector can be challenging. • The shift in (council) roles from an implementer to a contracting authority, partner and enabler can take time. Local authorities can sometimes see PPPs as an opportunity for revenue generation, without always considering the need to subsidize a service, or being clear about what they can 'bring to the table'.

DAKAR	
Project name	Structuring the Fecal Sludge Market for the Benefit of Poor Households
Grantee	ONAS
CITY CONTEXT	
City population	3,653,000 (2012)
Country HDI	0.494 (162)
Access to sanitation services	99% (access to improved onsite sanitation services) 48% (access to mechanized emptying services)
Key issues in FSM at time of project design	• Low demand for mechanized (and safe) emptying and transport services • Limited profitability of FSTP; • Limited infrastructure, across the value chain, from emptying to treatment • Lack of regulatory instruments for emptying and treatment services; • ONAS' limited capacity to directly operate • Un-professionalized private operators leading to poor service levels and capacity.
Institutional arrangements	• **Key national institution :** Ministère de l'Urbanisme et de l'Assainissement (MUA) • **Service Authority:** Office National de l'Assainissement du Sénégal (ONAS) • **Service Provider(s):** ONAS is the sole provider of sewerage services in Dakar, the market for emptying and transport services for onsite sanitation was fragmented
PROJECT DESIGN	
Implementing partners	IPA, EDE, WSA
Project cost	US$12.3 million
Start date-end date	2012-2017
Project components	• Research to inform actions to reduce desludging costs • Rehabilitation and construction of FSTPs • Contract design and tendering • BDS to emptying service providers (including access to finance)
PPP objective	• Make hygienic faecal sludge emptying services accessible and affordable to the urban poor • Transfer FSTP operations to private sector • Reduce mechanized desludging costs • Professionalize private operators
PROJECT IMPLEMENTATION	
Key activities implemented	• Research to inform the design of key actions for addressing bottlenecks on profitability and affordability of fecal sludge services, analysis of regulatory and legal environment affecting fecal sludge services; fecal sludge market organization (to increase competitiveness); and more efficient sanitation technologies and information platforms; • Research into adequate household sanitation facilities suitable in high water table areas; • Construction of a new sludge disposal and treatment station in the Tivaouane Peulh area • Construction of fecal sludge transfer systems; • Marketing activities, such as a media campaign;

<table>
<tr><th colspan="2">DAKAR</th></tr>
<tr><td></td><td>• Delegation of three FSTP management to the private sector to optimize their operational and financial performance</td></tr>
<tr><td>Progress in PPP/SLA design and procurement to date</td><td>The design and the procurement of the contract was achieved. The feasibility study identified the concession model as the most suitable contract to operate the three FSTP. ONAS carried out further due diligence on the suitability of the concession model and consulted with the national procurement authority (Direction Nationale des Passations des Marchés),</td></tr>
<tr><td>Contract design</td><td>
<table>
<tr><th>Feature</th><th>Contract specifics</th></tr>
<tr><td>Services</td><td>Operations and maintenance of three FSTP and valorisation of treated fecal sludge</td></tr>
<tr><td>Nature of contract</td><td>Concession</td></tr>
<tr><td>Duration</td><td>7year</td></tr>
<tr><td>Remuneration mechanism</td><td>Based on the tariffs of FCFA 300/m^3 of sludge emptied onsite</td></tr>
<tr><td>Private sector responsibilities towards assets maintenance and rehabilitation</td><td>Financing operations and maintenance costs, in addition to some rehabilitation activities specified in the contract; private sector responsibilities beyond specified investments is not clear</td></tr>
<tr><td>Contracting authority responsibilities towards assets maintenance and rehabilitation</td><td>Not clear</td></tr>
<tr><td>Fees and charges to the contracting authority</td><td>• Lease fee (redevance)
• License fee
• VAT and other taxes
The lease and license fees are subject to variations, depending on profits</td></tr>
</table>
</td></tr>
<tr><td>Procurement modality (if applicable), processes and outcome</td><td>Open tender procedure was carried out. The preparation of the bidding documents was a lengthy process, spreading over six months. The contract was awarded in August 2013, nearly one year after the publication of the call for proposals. The joint venture DELTA-VICAS (thereafter renamed DELVIC) was awarded the contract on the strength of its technical proposal.</td></tr>
<tr><td>Implementation, monitoring and results to date</td><td>As of November 2017, the delegation of FSTPs' management to the private operator was showing positive results, with significant improvements in operational and financial efficiency. Despite this success, challenges remain to ensure the sustainability of FSTP management. As the contract is entering its fifth year of implementation, critical investments in rehabilitation, which were not specified in the contract, already appear necessary. In addition, as onsite sanitation emptying services increasingly develop, the need to extend the capacity of the FSTP has become crucial.</td></tr>
<tr><td colspan="2">ASSESSMENT</td></tr>
<tr><td>Sustainability</td><td>ONAS's leadership in engaging with the private sector is an element of sustainability. With private sector participation showing positive results in terms of operational and financial efficiency, the model is increasing the appetite of the private sector for implementing such contracts.</td></tr>
<tr><td>Equity</td><td>Anecdotal evidence suggests that the development of FSTP services and improved operation at the facilities benefited, at least indirectly, the poor residents of Dakar.</td></tr>
<tr><td>Overall lessons on PSP for onsite sanitation services in the city</td><td>• The PPP has improved the operational and financial efficiency of the FSTPs management.
• The successful tender of the PPP contract for the three FSTP is also the result of multiple interventions across the sanitation value chain.This has contributed to building private operators' confidence in ONAS' commitment to improve services and increased their appetite for taking on the risk to invest in sanitation infrastructure.
• A major enabling factor is the fact that ONAS itself has been in the driving seat of these reforms.</td></tr>
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<table>
<tr><th colspan="2">DURBAN</th></tr>
<tr><td>Project name</td><td>Urine Diversion Toilet Waste Removal, Disposal and Processing in Durban</td></tr>
<tr><td>Grantee</td><td>Khanyisa Projects</td></tr>
<tr><td colspan="2">CITY CONTEXT</td></tr>
<tr><td>City population</td><td>Approximately 3,500,000</td></tr>
<tr><td>Country HDI</td><td>0.666 (119)</td></tr>
<tr><td>Access to sanitation services</td><td>57% networked sanitation systems and 42% on-site sanitation systems</td></tr>
<tr><td>Key issues in FSM at time of project design</td><td>• The absence of a service delivery model for emptying and transporting waste from Urine Diversion Toilets (UDTs)
• No treatment technology/ services for UDT fecal waste</td></tr>
<tr><td>Institutional arrangements</td><td>• Key national Institution: Department of Cooperative Governance and Traditional Affairs has oversight of local governments while the Department of Water and Sanitation supports and regulates local government
• Service Authority: eThekwini Municipality Water and Sanitation (EWS) Unit is the municipal department responsible for water and sanitation</td></tr>
<tr><td colspan="2">PROJECT DESIGN</td></tr>
<tr><td>Implementing partners</td><td>EWS and University of KwaZulu-Natal (UKZN)’s Pollution Research Group</td></tr>
<tr><td>Project cost</td><td>USD 5,727,950, with a contribution of USD 4,400,000 from eThekwini Municipality and USD $1,304,155 from BMGF/DfID</td></tr>
<tr><td>Start date-end date</td><td>2014-2018</td></tr>
<tr><td>Project components</td><td>To engage on business opportunities and partnerships for the removal, disposal and treatment of UDT fecal waste</td></tr>
<tr><td>PPP objective</td><td>Emptying and transport and waste treatment services for UDTs</td></tr>
<tr><td>Other engagement with private sector</td><td>• BioCycle, the private sector operator appointed to operate the treatment plant
• The contractor chosen through a tender to empty and transport of UDT FS</td></tr>
<tr><td colspan="2">PROJECT IMPLEMENTATION</td></tr>
<tr><td>Key activities implemented</td><td>• A contract under conventional procurement procedures for the removal, transport and disposal of UDT fecal waste
• A 5-year Service Level Agreement (SLA) for the processing/ treatment plant operation</td></tr>
<tr><td>Progress in PPP/SLA design and procurement to date</td><td>Contract preparation, design and tender for removal and transport services
• Market assessment asserted
• Development and evaluation of tender document and proposals
• Contract awarded in September 2016
• Emptying of UDTs started in January 2017
SLA preparation, design and tender for the treatment plant operations
• Phase 1, identified that the Black Soldier Fly (BSF) technology was the option that could effectively transform the UDT fecal waste to useful end-product
• BioCycle was the organization selected to operate the Black Soldier Fly plant
• SLA between the eThekwini Municipality and BioCycle was approved by the Municipality’s legal department and signed in April 2015
• The approval of the SLA by the bid adjudication committee in November 2015
• The construction of the BSF processing/ treatment plant started simultaneously but a number of modifications were required</td></tr>
<tr><td>Contract design</td><td>Contract preparation, design and tender for removal and transport services
<table>
<tr><th>Feature</th><th>Description</th></tr>
<tr><td>Aspect of the value chain</td><td>Removal, transport and disposal of fecal waste from 50,000 of the 85,000 UDTs in Durban</td></tr>
<tr><td>Nature of contract</td><td>Service contract</td></tr>
<tr><td>Service area</td><td>50,000 UDTs in eThekwini municipality</td></tr>
<tr><td>Duration</td><td>2 years with potential renewal</td></tr>
<tr><td>Remuneration mechanism</td><td>EWS pays to the contractor per month according to the emptying jobs performed. The fees paid depend on the location of the job and the transport distance. For the households, the service is free</td></tr>
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<table>
<tr><th colspan="2">DURBAN</th></tr>
<tr><td></td><td>
<table>
<tr><td>Expected Outcomes</td><td>Waste from UDTSs emptied and transported to a treatment facility</td></tr>
<tr><td>Key obligations of Service Provider</td><td>Fecal waste removal from UDTs and transporting the waste to a processing plant</td></tr>
<tr><td>Key Obligations of Service Authority</td><td>To monitor the work and pay when performed</td></tr>
</table>
SLA preparation, design and tender for the treatment plant construction and operations
<table>
<tr><th>Feature</th><th>Contract specifics</th></tr>
<tr><td>Nature of contract</td><td>Service Level Agreement</td></tr>
<tr><td>Service area</td><td>Treatment of sludge coming from the 85,000 UDTs</td></tr>
<tr><td>Duration</td><td>5 years</td></tr>
<tr><td>Remuneration mechanism</td><td>EWS pays a gate fee to the operator of the plant (350 ZAR per ton)</td></tr>
<tr><td>Key Obligations of Service Provider</td><td>Treat waste 20 tons/day from UDTs and maintain the BSF treatment plant</td></tr>
<tr><td>Key Obligations of Service Authority</td><td>To monitor the work and fulfil payments</td></tr>
</table>
</td></tr>
<tr><td>Procurement modality (if applicable), processes and outcome</td><td>

A contract under conventional procurement procedures for the removal, transport and disposal aspect of UDT fecal waste
A 5-year SLA for the processing/ treatment plant operation. To issue an SLA without a full tender process, Section 36 of the Municipal Procurement Act had to be applied, since it allows direct contracts when proved that no other operator can supply the requested service or product

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<tr><td>Implementation, monitoring and results to date</td><td>Contract preparation, design and tender for removal and transport services, approximately 12,000 UDTs were emptied by the end of October 2017
SLA preparation, design and tender for the treatment plant construction and operations, it was agreed that the SLA would only become valid when the plant had been fully commissioned and saleable products could be produced. As of October 2017, the plant has not been completed. It is hoped that within the next two to three months, the plant can be modified and can begin to operate fully</td></tr>
<tr><td colspan="2">ASSESSMENT</td></tr>
<tr><td>Relevance</td><td>The project aims to cover the 2 main gaps: the emptying and transport of UDT fecal waste and the treatment of UDT fecal waste</td></tr>
<tr><td>Effectiveness</td><td>The project is ongoing and data on effectiveness is still being collected. In terms of emptying and transport the contract is in place, the contractual obligations are being respected from both sides, and about 12,000 UD were emptied up to October 2017. On the treatment side, the plant is still not fully operational so an assessment on its effectiveness will have to be made during the months to come</td></tr>
<tr><td>Equity</td><td>The project aims to cover a gap within service provision of households with UDTs, who are generally located in the poorer areas of the municipality</td></tr>
<tr><td>Sustainability</td><td>The project aims to establish commercially viable business models. The one for emptying UDTs and transporting the fecal waste to the plant can be replicated as it is. The treatment facility faced technical challenges and a significant number of design and equipment amendments and additions have been required</td></tr>
<tr><td>Overall lessons on PSP for onsite sanitation services in the city</td><td>

The municipality-funded services of emptying and transport of sludge by private sector companies is a long-used strategy that was proved successful
In terms of fecal sludge treatment, the municipality would like to have several different processing technologies and locations. The viability for the BSF Treatment Facility will be assessed in the months to come
In South Africa, there is a very conducive legal framework with aligning stakeholders
The knowledge about the UDTs context and areas to be served, through the GIS mapping, was key to framing the project
Durban has a dynamic and well-organized private sector involved in sanitation services and this was crucial for the successful partnerships
It is important to point out the lengthy process and time required to put in place both contracts
The BSF technology is currently implemented by only one company in South Africa and therefore there was no competition issuing the contract

</td></tr>
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DURBAN	
	• There were many challenges in the building of the treatment plant due to a significant number of design and equipment amendments and additions • In terms of risks it is important to consider that the majority of these, in case of the treatment, are on the side of the municipality through its investment in the capital costs of the treatment facility. In the case of the contractor for the emptying and transport of the fecal waste there is not much risk. The contractor is only paid when fecal waste is delivered • Finally, it should be clear that the SLA is currently not fully in place and that this will only happen once the treatment plant is operational

FREETOWN	
Project name	**Service Level Agreements for Private Sector Engagement in Urban Sanitation Services**
Grantee	GOAL
CITY CONTEXT	
City population	1,029,000
Country HDI	0.420 (179)
Access to sanitation services	1% connected to the sewer network, 44% access to septic tanks or lined pits, 52% with unlined pits, 3% open defecation (GOAL/WSUP 2017)
Key issues in FSM at time of project design	• The sector had considerable gaps in terms of clearly defined standards and operating procedures • An under-developed, informal and relatively low-capacity private sector • A public sector (FCC) with relatively weak governance, limited experience in private sector contracting and partnerships, and a lack of trust between the private sector and FCC • Limited FSM infrastructure, poor urban planning, and poor road network and heavy traffic in the city posing challenges of emptying services • High rates of illegal dumping of collected FS, and widespread public practices and tolerance of self-emptying of toilets and dumping of FS • There are no functional FSTPs in the city, and access to the one single designated discharge point is very challenging
Institutional arrangements	• **National Institutions:** The Ministry of Health and Sanitation (MoHS) • **Service Authority:** Freetown City Council (FCC) • **Service Provider(s):** Private operators, and for vacuum truck emptying also some government departments providing an 'informal' service to customers.
PROJECT DESIGN	
Implementing partners	Freetown City Council (FCC), WSUP Advisory (who sub-contract Ernst & Young)
Project cost	US$2 million
Start date-end date	Phase 1 (project preparation grant) 2014. Implementation phase 2016-2018
Project components	• Strengthening the FSM sector regulation and institutional framework, including the creation of a FSM unit in FCC and establishment of licensing mechanisms • Business Development Support (BDS) to private operators • Public awareness on adequate use of latrines and emptying services
PPP objective	• It was anticipated that private operators could be contracted to manage FS transfer stations, however the activity around transfer stations was abandoned due to public and political acceptance issues. • It was then expected that public toilets could be managed under service-based contracts with the private sector • Whilst there was no objective of a contractual agreement, it was hoped that the emptying and transport sector could be bound to adhering to set service standards.
Other engagement with private sector	• n/a
PROJECT IMPLEMENTATION	

FREETOWN	

Key activities implemented	• *Undertaking of studies in FSM, and exchange visits*
	  ○ To inform subsequent interventions in the project, and to build the body of data available for FSM planning and decision making. A considerable number of studies were undertaken on the capacity of existing emptying services (Manual Pit Emptiers-MPEs, and Vacuum Truck Operators - VTOs), customer practices and willingness to pay studies, business and financial modelling for emptying/toilet/transfer stations, enabling environment, options appraisals for treatment site, and numerous others. Multi-stakeholder learning visits were also done in Dakar and Lusaka
	• *Establishing stakeholder dialogue platforms*
	  ○ Efforts were made to improve coordination between city and national stakeholders, and to engage private operators to build the trust with FCC
	• *Establishing and strengthening a FSM unit in FCC*
	  ○ A dedicated unit for FSM has been established within the FCC, raising its institutional capacity for FSM, with the project assisting in building the capacity of the unit, and helping it to plan and budget. Initial costs of the FSM unit have been fully covered by the project funds.
	• *Establishing a call center*
	  ○ Call center for providing information on VTOs to customers, and also track service quality and receive customer complaints isyet to be launched.
	• *Work on public infrastructure for FSM*
	  ○ Undertaken key studies and some pilots to inform the investment in public FSM infrastructure, particularly at the FSTP and public toilets
	  ○ Studies have been done on public toilets but works not yet undertaken. Two pilot transfer stations were constructed but did not become operational due to local resistance.
	• *Capacity development of MPEs and VTOs*
	  ○ Business development support has focused predominantly on existing rather than new businesses. Some efforts have been made to equip MPEs (with PPE and gulpers) but there have been challenges to engage them due to poor capacity. More focus has since been made on business modeling, mentoring and developing business plans for VTOs, with the aim of helping them to secure loans (not successful as were deemed un-creditworthy).
	• *Public awareness campaign*
	  ○ Yet to be launched, but planned, to increase the demand for emptying services, and increase public awareness of the call center.

Progress in PPP/SLA design and procurement to date	• The initial plans for SLAs for transfer stations were suspended • A draft SLA was developed for public toilets, it remained a draft, as another NGO project is incoming to undertake a city-wide study on management arrangements for public toilets.
Contract design	The SLA for public toilets was drafted. It includes a mixture of output and process-oriented standards, an indicator and scoring matrix (which would be more appropriate external to the SLA) and provides an unlimited timeframe for the lease, with a fixed monthly lease fee paid to FCC, where the operator keeps user tariffs, which are capped at a maximum amount.
Procurement modality	The finalization and procurement for the public toilet SLA has been postponed due to the incoming study of the other NGO.
Implementation, monitoring and results	n/a
ASSESSMENT	
Sustainability	The fact that the FSM unit is predominantly financed at present by the grant funding is a sustainability risk. However strengthening the FCC and private sector capacity aims to strengthen sustainability efforts generally.
Equity	The project has deliberately tried to focus on pro-poor service delivery though looking at the lower end of the service ladder for emptying. There were efforts to improve MPE services and working conditions, which are expected to translate to better services to the poor. However the lack of the transfer stations undermines

FREETOWN	
	efforts with the MPEs. There has been a recent re-focus of the project on capacity strengthening efforts away from MPEs to VTOs.
Overall lessons on PSP for onsite sanitation services in the city	• Where the FSM sector is dominated by informal operators and a lack of trust between the operators and public sector, taking a 'hard-line' approach of standards and enforcement from the outset can risk pushing the operators further 'underground'. This project took a phased approach to engagement. • Taking an incremental approach to building public and private sector capacity through small and progressively increasing private sector contracting, can (in some contexts) be more effective and sustainable from moving straight into large, city-wide PPP contracts. • The Freetown experience suggests that transfer stations can be highly unpopular, and need to be carefully designed and agreed with communities and politicians. • The project has identified that whilst MPEs can provide a widespread service, particularly in poor communities, they can be difficult to engage, and to provide business development support. Efforts are needed to ensure SLAs and business development considers options for building services for low-income areas inaccessible for vacuum trucks. • The Freetown project indicates that the interest and commitment from government partners on such 'software oriented' projects can increase if there are 'tangible' infrastructural assets included in the programme. • Where cities have objectives to reduce illegal dumping of FS, it is important to clearly identify and address all disincentives to legal dumping, and potentially adding incentives to dump.

KAMPALA	
Project name	Improving Fecal Sludge Management for On-Site Sanitation in Kampala City
Grantee	Kampala Capital City Authority (KCCA)
CITY CONTEXT	
City population	Approximately 1,500,000 in 2015
Country HDI	0.493 (163)
Access to sanitation services	62% access to improved onsite sanitation services
Key issues in FSM at time of project design	• Unregulated service provision, resulting in high price variations and unsatisfactory service delivery standards due to a weak legal and institutional framework for Fecal Sludge Collection and Transport (FS C&Ts) • Inadequate planning for the provision of onsite sanitation services • Inadequate sanitation facilities • Insufficient FS treatment capacity • Lack of public awareness on sustainable emptying, transport and disposal and/ or treatment of fecal sludge
Institutional arrangements	• **Key national Institution:** Ministry of Water and Environment (MWE), the National Environmental Management Authority (NEMA), the Ministry of Health (MoH), the Ministry of Education and Sports (MoES) and the National Water and Sewerage Corporation (NWSC) • **Service Authority:** KCCA • **Service Providers:** vacuum truck operators, gulper operators and manual emptiers
PROJECT DESIGN	
Implementing partners	Not applicable
Project cost (USD Million)	USD 2,422,625 over a 36-month period. BMGF/DFID Global Development Grant of USD 1,972,625 and Government of Uganda and KCCA counterpart funding of USD 450,000
Start date-end date	2015-2018

KAMPALA	
Project components	• Citywide sanitation mapping and geo-database development for a more efficient planning of interventions required at city level • Sanitation business development and regulation through Service Level Agreements for pit emptying services to enforce service delivery standards • Develop and implement citywide sanitation marketing and behavior change campaigns to increase demand for FS services • Learning and capacity building to strengthen the institutional capacity of project staff, KCCA staff as well as private sector partners • Development of an Integrated Fecal Sludge Management Information System and Contact Center to organize and regulate the delivery of FS C&T
PPP objective	• Emptying and transport services
PROJECT IMPLEMENTATION	
Key activities implemented	• Drafting of the KCCA Sanitation Ordinance Draft to be formally put in place towards the end of 2017. The ordinance will strengthen the legal framework for public private partnership in sanitation and provide the basis for regulation. • Development of a GIS mapping of sanitation facilities in the city, this will give the project an information database that will be used for investment planning, resource allocation and monitoring of service provision, to enable improvements in the efficiency of service delivery and tracking. • Tracking private operators' operations, where records are kept and to allow KCCA to monitor service provision. • Establishment of a FSM related call center, operationalized in October 2016 to request FS emptying services. • Implementation a comprehensive Behavior Change Communication strategy, to scale up the demand for and improved supply for FSM services • Organization of a comprehensive capacity building plan to strengthen the capacity of the service providers. • Support the investigation of innovation in sanitation. The project is supporting a number of innovations in the sector. For example KFSM is in a partnership with the NGO 'Water for People'
Progress in PPP/SLA design and procurement to date	The engagement with the private sector resulted in a Memorandum of Understanding (MoU) between KCCA and the 2 FS C&T Associations in October 2017. The purpose of the MoU was to establish a formal partnership between KCCA and the private operators under their umbrella associations to implement a more organized, structured and systematic citywide provision of services in FSM, and to streamline the roles and responsibilities of each party in relation to the collection, transportation and safe disposal of fecal sludge. KCCA seeks to move towards a SLA between with FS C&T service providers. A consultant was hired to start drafting the SLA.
Contract design	Still not in place
Procurement modality	Not applicable
Implementation, monitoring and results to date	Not applicable
ASSESSMENT	
Relevance	KCCA's engagement with the private sector has focused on emptying and transport services considering the need to formalize a sector that had been previously operating informally.
Effectiveness	Anecdotal evidence suggests that an increase in effectiveness is visible by the decrease in prices and an increase on FS delivered to the treatment plant.
Equity	As the project focused on onsite sanitation, its outcomes are likely to benefit the poorer residents of Kampala, but hard data is required to fully assess the equity of KCCA's approach.
Sustainability	The process of engaging the private sector up to now was very comprehensive and at a pace where changes could be easily absorbed and understood by all. It can therefore be concluded that the KFSM team is working towards guaranteeing that the results achieved are sustainable and that long-term strategies are put in

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	place. But it isn't clear how exactly KCCA wants to maintain what has been achieved once the project is phased out.
Overall lessons on PSP for onsite sanitation services in the city	**Key enablers** • Conducive legal framework (existing acts and policies regarding FSM in general but also specifically about PPPs). • Aligned stakeholders (roles and responsibilities among stakeholders are generally aligned and clear, thanks to the MoU). • Very motivated and supported KFSM team within the KCCA (good conducive environment for the project with KCCA). • Good knowledge about the FS context and areas to be served (through GIS mapping of the sanitation facilities in the city). • Improving technical capacity by the FS C&Ts service providers (given by the KFSM in the past year in a multitude of subjects). • Better public awareness (KFSM BCC strategy in place). • Minimum standards are about to be put in place (KCCA Draft Sanitation Ordinance about to be signed and approved). • Grounds to have clear agreements and transparency among all stakeholders (through the constant engagement since the beginning of KFSM). • Efficient service request system (through the call center). • A MoU in place between KCCA and C&Ts service providers (first step towards the future signing of a SLA). **Key barriers** • Dominance of informal service providers that do not meet the requirements of public procurement. • Unregulated service provision that might take time to change (there was no regulation up to now). • Lack of financial capacity in the FS C&Ts service providers (lack of financial sustainability and access to credit for example) to scale-up capacity. • Lack of high standards sanitation facilities (high percentage of unlined pits). • Lack of treatment facilities (the existing treatment facilities cannot absorb all the FS generated in the city of Kampala). • Lack of systems in place to offer services to the urban poor (options in discussion but no concrete steps).