CABRI Policy Dialogue

Value for money in the water, sanitation and hygiene sector

CASE STUDY
Financing the water sector through small water enterprises in Ghana

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Acronyms and abbreviations

BOOT	build, own, operate and transfer
CWSA	Community Water and Sanitation Agency
GWCL	Ghana Water Company Limited
GWET	Ghana Water Enterprise Trust
INGO	international non-governmental organisation
MMDAs	metropolitan, municipal and district assemblies
MSWR	Ministry of Sanitation and Water Resources
O&M	operations and maintenance
PPP	public-private partnership
SWA	Safe Water for Africa
SWE	small water enterprise
SWN	Safe Water Network
WHG	WaterHealth Ghana
WSSDP	Water Sector Strategic Development Plan (2012–2025)

1. Introduction

In Ghana, as with many emerging middle-income countries in Africa, financing universal access to sustainable water services is a major policy challenge. Historically, many of the achievements of the water sector in Ghana have been underpinned by substantial support from donors in the form of grants to the rural sub-sector and concessional loan financing to the urban water sub-sector. However, the attainment of middle-income status means that these financing sources are set to dry-up. If the government is to make good on its commitment to achieving universal access to adequate, safe, affordable and reliable basic water services by 2025,[1] new and innovative modalities for mobilising sector investments need to be identified and operationalised to plug the existing funding gap.

This case study examines the emergence of privately run small water enterprises (SWEs) or 'micro-utilities' as an alternative to public utility or local government managed services in underserved parts of rural and small-town Ghana. The case study does this through exploring the relative success of past small-scale public-private partnership (PPP) models in attracting new forms of investment and expanding coverage in underserved areas. The discussion section examines the prospects for scaling-up service provision through SWEs to more communities in Ghana, with a particular focus on the potential contribution of blended finance channelled through the newly formed Ghana Water Enterprise Trust (GWET).

1.1 The water sector in Ghana

Since the early 1990s, Ghana's water and sanitation sector has undergone major reforms. The main focus of these reforms was on transforming the role of the public sector away from direct service provision into a facilitator of decentralised service delivery. This involved the introduction of private sector participation in urban water supply, supported by the establishment of dedicated regulatory bodies for water resource management, as well as an emphasis on community ownership and management of local services. Functional responsibilities and all subsector policies have been consolidated into the national water policy, as follows:

- Policy, planning, financing and monitoring are the responsibility of the central ministries. In January 2017 the Ministry of Sanitation and Water Resources (MSWR) was created to provide a special focus on the sector.
- With the opening of the sector to PPPs, the government created a multi-sector (water/electricity) economic regulator, the Public Utilities Regulatory Commission, whose duties (for the urban water sector) include providing guidelines to enable private or public utilities to set tariffs, approving tariffs, enforcing performance standards and supervising quality of service.
- The Ghana Water Company Limited (GWCL) delivers urban water supply. The Community Water and Sanitation Agency (CWSA) oversees the provision of water and sanitation services to rural communities and small towns (in collaboration with the metropolitan, municipal and district assemblies), although the operation and management of systems is typically undertaken by community-based water and sanitation management teams or water and sanitation management boards.
- The national policy and sector strategy provide support for SWEs and private sector participation, but this first requires approval from government agencies, as GWLC and CWSA have exclusive capacity to deliver services in urban and rural areas respectively.

1.2 Sector performance

The national vision for the water, sanitation and hygiene sector in Ghana is to achieve universal access to safe drinking-water and basic sanitation by 2025. Estimates show around nine out of ten Ghanaians have access to an improved drinking-water source, with around 68 per cent having

1 National commitments are laid out in the Water Sector Strategic Development Plan (WSSDP) (2012–2025), which defines the government's vision for the sector as the delivery of 'sustainable water and basic sanitation for all by 2025'. Internationally, the government of Ghana reaffirmed this as a high-level commitment by signing the Sanitation and Water for All (SWA) compact, at the 2014 SWA high-level meeting in Washington DC.

access to only basic water services (JMP 2017).[2] Over the period 1990–2015 access to improved water rose by 32 percentage points (56–88 per cent), meaning coverage in Ghana is higher than the regional average. While the above analysis presents a broadly positive picture of access to potable water, it masks urban/rural disparities, issues related to service reliability, drinking water quality and service sustainability.

The vast majority of Ghanaians without access to a basic service live in rural areas and small towns. Moreover, coverage in rural areas has stagnated in recent years, driven by the failure of community management models to maintain service infrastructure. In short, around one-third of the installed facilities in rural areas are either completely or partially broken down (Adank et al. 2014).

1.3 Sector funding and financing

The National Water Sector Strategic Development Plan (WSSDP) estimates that the sector will require an annual capital investment of US$327 million in order to achieve universal access to basic water services by 2025. The annual capital requirement to achieve universal access to the higher tier of safely managed[3] water services is much more – an estimated at US$946 million per year.[4] At US$114 million annually, current capital investment stands significantly below the required level.

A 2016 analysis of sector expenditure found that almost all capital investment was financed by either donor grants or concessional loans to the government (i.e. repayable finance). User expenditure on water was found to be very high – yet the vast majority of this expenditure was on bottled or sachet water accessed as a convenient refreshment rather than as a water service. Indeed, overall household expenditure on bottled and sachet water was more than four times the amount spent on water tariffs from GWCL, the main utility, and other small-scale service providers and SWEs (Essiku 2016).

Local government contributions to water services are minimal and reflect the limited success the erstwhile Ministry of Water Resources, Works and Housing had in securing commitments from the Ministry of Finance (Duti et al. 2014). Budget allocations to the sector represent only a fraction of the per capita allocations to health and education (CONIWAS 2014).[5] Investment from other sources (the private sector, NGOs and INGOs) is minimal and contributes less than 1 per cent of annual sector expenditure (CONIWAS 2014).

2 A basic water service is defined as access to drinking water from an improved source (i.e. piped water into dwelling, yard or plot, public taps or standpipes, boreholes or tube wells, protected dug wells, protected springs and rainwater), provided collection time is not more than 30 minutes for a round trip, including queuing.

3 A safely managed service is defined as access to drinking water from an improved water source which is located on the premises, available when needed and free from faecal and priority chemical contamination.

4 Calculated on the basis of capital cost estimates by Hutton and Varughese (2016).

5 The Coalition of NGOs in Water and Sanitation (CONIWAS) estimated that in 2012/3 US$7.9 was spent per capita on water, sanitation and hygiene combined, compared to US$51.4 per capita for health and US$108.9 per capita for education. The creation of the dedicated MSWR in January 2017 aimed to increase the prominence and inter-government communication in respect of both water and sanitation to address these issues.

2. Private sector engagement in the water sector

2.1 Recent experiences with PPPs

Various forms of water sector PPP have been implemented since the late 1990s, but these have all encountered problems. Between 1998 and 2010, five PPP projects were initiated covering both urban and small-town areas:[6] one was implemented on a five-year (2006–11) urban water management contract, only to be abandoned due to poor performance and public protests; the remaining four (one lease contract with private investment and three small-town management contracts) were abandoned following fierce resistance by civil society groups, allegations of corruption in the awarding of contracts and lack of external financing. The particular barriers faced by water PPPs in Ghana, as analysed by Chan and Ameyaw (2013), and are summarised in Table 1.

Table 1: Barriers confronting water PPPs in Ghana

Identified barriers	Description
Political/ regulatory barriers	These include: (i) lack of commitment by successive governments; (ii) political and regulatory interference in respect of tariffs; and (iii) weak regulation and an outdated monitoring regime.
Operational barriers	Private operators failed to meet agreed service targets. This resulted in increased customer dissatisfaction and reduced bill payments. In turn, this led to the failure by some operators to meet financial obligations to local government and led to the affected PPPs being abandoned.
Market/ revenue barriers	The key market risks encountered were: (i) non-payment of bills by public institutions;[7] (ii) availability and use of cheaper water sources in the rainy season; and (iii) limited utilisation -or effective demand) for the services being provided, especially in rural and small-town areas.
Acceptability risks	All PPPs suffered from civil society and public resistance stemming from fear of tariff hikes, staff layoffs, and/or general disenchantment with the private provision of public services.

6 (i) Urban water supply lease (1999–2002) – never implemented; (ii) Urban water management contract (2006–2011) –Implemented but not renewed; (iii) Atebubu managment contract; (iv) Wassa Akropong management contract – terminated after a year; and (v) Tuma water supply contract – terminated after a year.

Since 2010, the enabling environment for PPPs in public services has improved. At the national level, the government of Ghana has developed a framework of incentives and institutional support for PPPs across all sectors, and these have been encoded in the national water policy of 2011. This policy has been effective in attracting new funding into urban water infrastructure, but the appetite for, and viability of, scaling up different PPP modalities in rural and small-town areas remains uncertain.

2.2 Examples of SWEs to date

A renewed focus on potential routes for private sector engagement in water supply has led to considerable donor focus on SWEs. SWEs are off-grid community water systems, stations or kiosks (some with household connections), which are typically operated as privately financed micro-utilities. These SWEs tend to consist of a centralised main station with water treatment and water access points, and often include piped access points to neighbouring villages and households. Each of these units is operated as a small business for which tariffs are set to cover operator salaries, contractor fees, operations and maintenance (O&M) and, in some cases, to repay initial capital expenses. The tariff structure is determined in consultation with local government agencies – metropolitan, municipal and district assemblies (MMDA's) – and is tailored according to the local socio-economic conditions of the consumer base and the business plan of the implementer. Since 2011, two main organisations have been working to expand the penetration of SWEs: (i) the Safe Water Network (SWN), a non-profit NGO; and (ii) WaterHealth Ghana (WHG), a for-profit social enterprise (see Table 2). Both organisations aim to serve communities that are not covered by traditional utility or local government service providers and claim to be able to deliver sustainable, high-quality and affordable water to whole communities. Due to their

7 In the case of the Wassa Akropong management contact, over 30 per cent of the water consumption was by government institutions whose bills were paid unreliably and often late, leaving insufficient money in the hands of the operator for operaations and maintenance. By the second half of 2004, the operator could no longer honour its financial obligation to the Water and Sanitation Development Board and the district assembly, and when a pump subsequently broke down the operator was not financially able to repair it, causing Wassa Akropong to be without water for one month. By the end of 2004, the Water and Sanitation Development Board resolved to take over the system and the management contract was terminated.

business orientation, these micro-utilities are promoted as financially viable models for attracting additional investment in the water sector by a diverse group of funders.[8]

Table 2: Characteristics of the two main SWE implementers in Ghana

Organisation	Safe Water Network	WaterHealth Ghana
Description	SWN is a non-profit organisation that provides safe drinking water to low-income communities in rural and peri-urban areas	Operating primarily in peri-urban areas and small towns, WHG is a for-profit social enterprise that provides safe drinking water in communities that have limited access to such water
Model	Externally financed systems run by community enterprises with support from SWN	Build, own, operate, transfer (BOOT) run by WHG
Technology/ mechanisation	Limited mechanisation and slow sand filtration	Reverse osmosis and ultra-violet filtration
Distribution	Standpipes/kiosks/ household connections	

SWEs managed by WHG tend to be operated as PPPs. WHG seeks to raise funds to procure and install the micro-utility or water kiosk based on a 'build, own, operate and transfer' (BOOT) agreement entered into with the MMDA, often with a concession term lasting between 10 and 20 years. WHG then trains community-based operators to run the facility as salaried staff, and charge an additional management fee to cover oversight and technical support. In the case of SWN, these systems tend to be transferred into community ownership, yet SWN also runs a number of SWEs as a PPPs with an assigned private sector operator.

Typically, SWEs are built in areas that have a population of at least 2 000 people, a reliable electricity supply, and an adequate perennial surface water supply. Ideally, the SWE will be constructed in a central location on land donated by the community. Permission to operate in the community must first be obtained from the local government and local leaders, in consultation with GWCL or the CWSA.

As of 2017, the construction cost of an SWE is approximated at US$62 000 plus additional start-up costs of US$30 000; however, different treatment and supply technologies mean that these costs can vary (SWN 2017a). The provision of household connections, for example, is a significant cost driver. The private or community-based operator collects and manages sales revenues, which are used to pay for local operator salaries, contractor fees and O&M, and, in some cases, to repay initial capital expenses[9].

8 Including donors, central government, multinational companies (through corporate social responsibility), social impact investors and private sector entrepreneurs.

9 The business case for each SWE varies by implementer. WHG-managed systems tend to have a higher tariff and aim to recoup both O&M and capital expenses, whereas SWN-managed systems tend to have lower tariffs and only seek to cover O&M.

Over the past six years, WHG and SWN have been relatively successful in mobilising a blend of traditional and non-traditional financing. As of 2017, the number of SWEs operating in Ghana stands at 114, serving approximately 1.1 million customers. WHG operates 47 of these systems and SWN provides support to, or directly operates, 67 systems (see Table 3). Despite this growth, current provision is still some way short of the potential market for SWE systems, which is estimated to be at least a further 3.2 million people (846 communities) in rural and small-town areas, with the potential to expand further into peri-urban areas (SWN 2017a).

Table 3: Key water service providers in Ghana, 2017[10]

Organisation	Provision model	Number of systems	People served
Urban areas			
GWCL	Urban utility	82	10.6 million
Rural areas, including peri-urban and small-town areas			
MMDA-owned local services	Local government 350 piped systems and over 35 000 wells		Unknown
SWEs	Micro-utility/ water kiosk	114	1.1 million
Saha Global[11]	Water businesses	>100	52 000

It is telling, however, that almost all of the expansion in service coverage has been supported by external finance – including both donor grants and social investors (mainly as expressions of corporate social responsibility) – which is motivated primarily by health and social impact rather than commercial return. Investment by private and commercial investors, as well as counterpart funding by the government, has been very limited.

Many SWEs contend with a variety of factors reducing their commercial viability and attractiveness to investment finance. For example, since 2011, WHG has benefitted from substantial funding through the Safe Water for Africa (SWA) programme, a partnership that channels capacity funding from various multinational firms with operations in Ghana – such as Coca-Cola and Diageo PLC – to help WHG expand its network of SWEs. The funding partners view such investments as charitably minded injections of funds to construct the systems, and have little expectation of a return on their investments. However, even with little pressure on

10 The table does not include individual entrepreneurs on-selling water from privately owned sources.

11 Saha Global's water businesses use local labour to transport water from a 'dug out' for treatment by hand and sale to consumers. There is no use of electricity, pumping or piping.


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capital recovery, WHG found it difficult to achieve sustainable cost recovery due to the following factors:

- *Entitlement:* The participatory role that communities had in setting up the SWE (e.g. donating land at the centre of the community) reinforced a feeling that this was primarily a social rather than a commercial enterprise, and translated it into an expectation that community members were entitled to water services that were free or heavily subsidised (McMullen & Bergman 2017).
- *Investor pressure:* Community dissatisfaction with the tariff contributed to a negative perception of the corporate investors, which, in turn, pressured the private operator (WHG) to reduce tariffs. WHG was resistant to lower prices for fear that doing so would not increase demand, but merely delay break-even, and exert downward price pressure on their non-SWA-sponsored sites, which did not enjoy the same degree of subsidy.
- *Comparisons with public service provider:* Eventually tariffs were lowered to a rate substantially lower than the cost of purchasing bottled and/or sachet water, and marginally higher than the public utility. This enabled WHG to continue to cover most of its existing staff and operating costs, but removed any prospect of capital recovery.

In other areas of Ghana, both WHG and SWN have had to adapt their service delivery models to better meet the demands of the market. Service utilisation was a major challenge for many newly established SWEs, with demand around one-quarter of what was expected (SWN 2013). Subsequent market mapping found that SWE consumers have a high willingness to pay for safe water, but this willingness is strongly influenced by convenience. Therefore, uptake and use of SWEs was found to be very high in the immediate vicinity of the station (within 100 metres), but that usage fell significantly beyond this distance. As a consequence, SWN and WHG have had to retrofit many of their systems with remote kiosks connected by a limited piped network to ensure more convenient distribution to households.

Another challenge to further growth is related to future relationships with the established public service providers. To date, WHG and SWN have enjoyed a positive and collaborative relationship with GWLC in urban areas, and local government and the CWSA in rural areas. SWEs have been accepted as valued, complementary service providers to existing public services, as they fill service gaps in those areas where the consumer and civil society demand for improved water services has outpaced the ability of the public utility or local government agencies to provide such services (McMullen & Bergman 2017). However, looking forward, the fact that public service providers can (theoretically) benefit from greater economies of scale; and are subject to price regulation, while SWEs are not, there is a clear risk that the public will not accept SWEs as a long-term substitute for provision. These acceptability risks might be alleviated by further price and performance regulation of SWEs, but this will have its own implications on commercial viability.

Despite these challenges, the level of service delivered through SWEs has been found to be comparatively good, delivering water that is more reliable and of higher quality than that of public and informal water providers (Opryszko et al. 2013). Long-term financial sustainability, however, remains unproven.

The recent expansion of SWEs in Ghana has been underpinned largely by donor investment. However, the expected decline in this funding source over the coming years means that funding for SWEs needs to be further diversified if they are to make a significant contribution to the sector goal of universal and sustainable access to water. The SWN is leading the initiative to expand the reach of SWEs in Ghana, and their proposed response to the future financing challenge is to enable the blended finance of SWE expansion through a newly established body – the Ghana Water Enterprise Trust (GWET).

2.3 Ghana Water Enterprise Trust (GWET) – a solution for additional finance?

The GWET is conceived as a Ghana-based, independent entity that will serve as a vehicle for financial stewardship of SWEs, and as a mechanism for securing additional capital from a blend of different sources, including loans for expansions, improvements and household connections.[12]

The GWET consists of a dedicated board and trust managers who are responsible for raising capital, awarding funds and exercising oversight of assets, and managing contracts with community or private sector service providers who will build, operate and manage the stations. The board exists to provide financial oversight, transparency and accountability so that investors have full visibility of the long-term performance and sustainability of their investments. It is expected that investment and sustainability risks will be reduced by the pooling of SWE assets within the trust to allow cross-subsidisation of working capital where appropriate.

The trust proposes using a PPP model that largely mirrors the arrangements for SWEs discussed above (see Figure 1), but some key differences exist. For example, in terms of the GWET:

- the trust is the asset owner for the duration of the BOOT agreement (approximately 25 years), after which ownership is transferred to the district assembly;
- the district assembly is eligible for a community dividend from the profits generated by the SWE; andthe trust would manage two pooled accounts: a pooled reserve fund for O&M, and a capital reserve fund for residual profits (if any) once all liabilities have been covered.

SWN expects that this structure will reduce operational and financial risks in a way that encourages diversification in the current funding of SWEs, particularly a shift away from donor and philanthropic funding towards increased private, social impact and, most of all, government funding (see Figure 2). The latter is premised on the belief that the government is increasingly interested in co-funding/financing social infrastructure projects.

12 Funds to develop and implement the trust have recently been given the green light by the World Bank's Public-Private Infrastructure Advisory Facility, will the overall design and implementation process being managed by SWN.

Figure 1: Proposed structure of the GWET

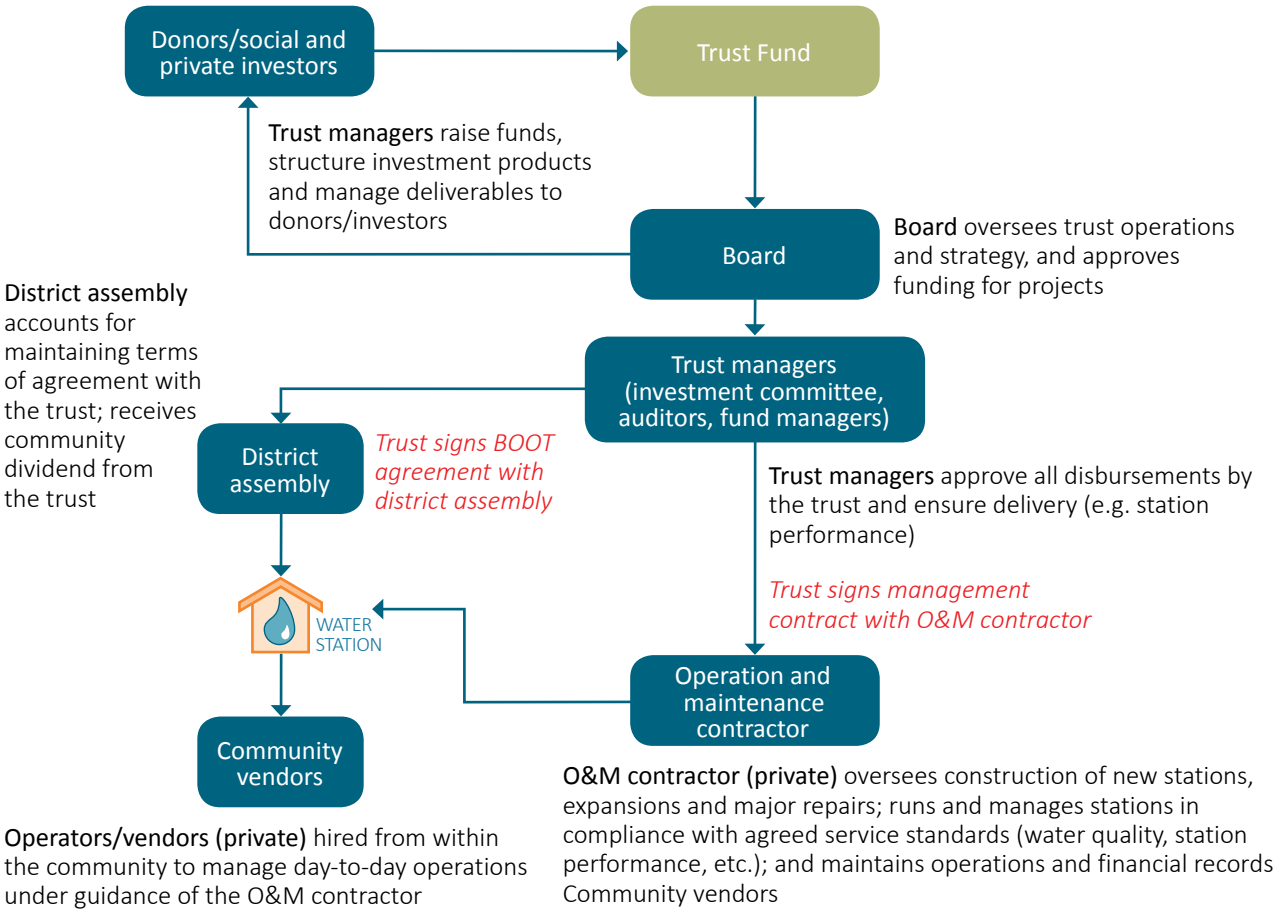
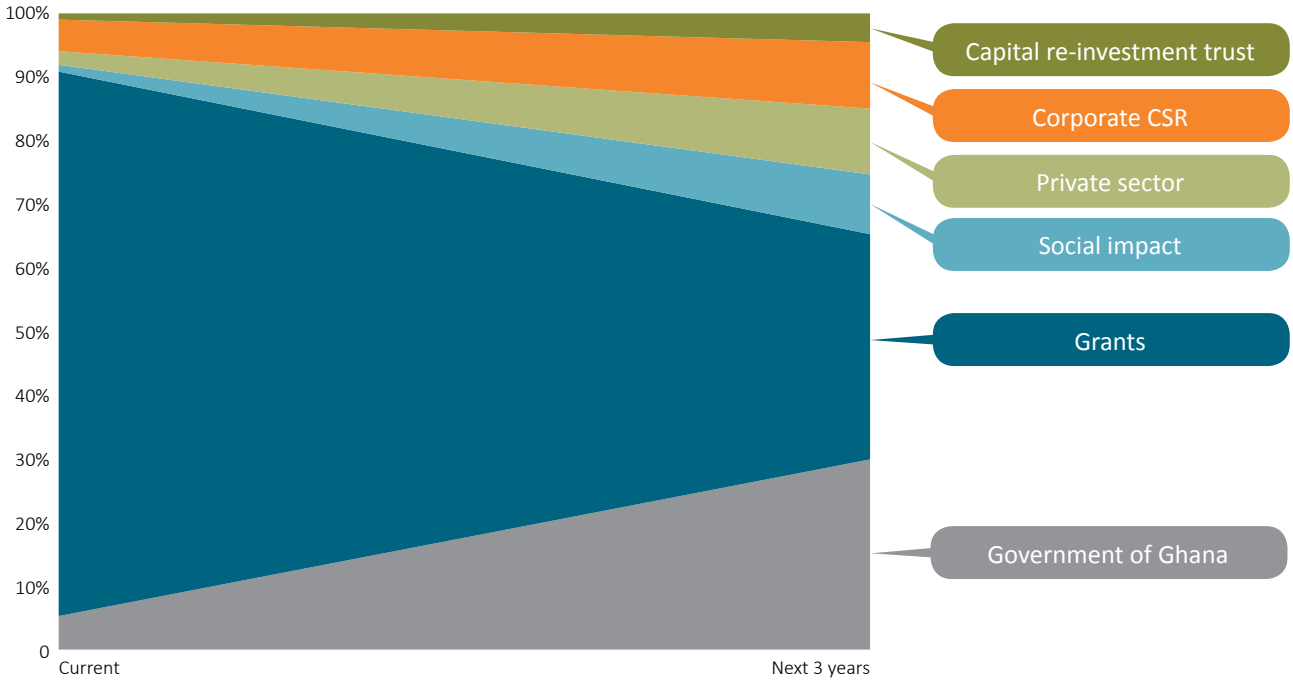


Figure 2: Expected funding trends, next 3 years



Source: SWN (2017b)

3. Discussion questions

Enabling and constraining factors for water PPPs in your country:

- Are you aware of the development of similar funds in your country? Has they been a success/failure? What do you think are the main drivers of this success/failure?
- Do you think PPP models work at scale in rural and small-town areas? What policies and strategies should be put in place to encourage or enable these?

The viability of the Ghana Water Enterprise Trust model:

- What do you see as the key potential obstacles and risks for successful PPP engagement in the GWET? Consider risks associated with asset ownership, competition, regulation, financial viability and local capacity.
- Do you believe that the GWET will be effective in significantly increasing blended finance to the water sector? Consider the opportunities and risks faced by different expected financiers; and consider any other possible approaches that could be explored to mitigate these risks.
- What role do you think the government should play in supporting the GWET?
- What are the key adaptations would you make to the GWET to improve its likelihood of success?

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