

Viability Gap Funding for Private Water Operators in Rural Cambodia

A Learning Brief



September 2018

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ACRONYMS AND ABBREVIATIONS

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DFAT	Department of Foreign Affairs and Trade
3i	Investing in Infrastructure
MIH	Ministry of Industry and Handicraft
PWO	Private Water Operator
REE	Rural Electricity Enterprise
RGC	Royal Government of Cambodia
SDG	Sustainable Development Goals
VGf	Viability Gap Funding

FIGURES AND BOXES

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EXECUTIVE SUMMARY

Infrastructure – roads, telecommunications, water, electricity – is essential for economic growth and poverty reduction. In its absence, individuals and nations suffer economic and social costs. Goods cannot be brought to markets without roads and few businesses can operate without water or electricity. Health improvements and other social development gains will not be fully realized without investing in infrastructure. Developing infrastructure is capital intensive and an array of public and private financing options exist, but investment gaps persist.

While infrastructure development tends to bring to mind mega-projects, in many emerging economies, small private operators have played a role in asset development and providing water and electricity in the absence of public service providers. Cambodia is one such country – private water operators and rural electricity enterprises supply millions of Cambodians in rural areas and small towns with these essential services. Cambodia has experienced high rates of economic growth and poverty reduction but has struggled to translate the benefits of growth and poverty reduction into equitable access to water and electricity throughout the country. Public utilities are estimated to provide 1.2 million Cambodians with water, complemented by an estimated 300 private water operators in Cambodia that supply over 1.4 million Cambodians with piped water in small towns and rural areas. Many of these operators could expand to unserved areas but are constrained by capital for investment and information about payback time.

To address these constraints, Palladium’s *Investing in Infrastructure (3i)* program decided to test a known public subsidy financial tool – viability gap funding (VGF) – in the Cambodian water market. VGF is a subsidy tool that governments use to incentivise private investment in infrastructure projects that are economically and socially viable but are not financially viable in the short term. It has been used by governments in many countries to encourage private investment in infrastructure projects, but most of these examples have been at a very large scale and in lucrative sectors, such as transportation and energy. It has been less applied for smaller infrastructure investments and in less profitable sectors, such as water.

To date, *3i* has successfully demonstrated that by providing business viability information and viability gap funding, private water operators will invest and expand into unserved areas. The program has triggered investment from 53 private water operators. With a total contractual commitment of \$10.5 million USD by *3i* to date, the 53 companies have committed to investing over \$15.6 million USD in expanding water sources, constructing water treatment plants, and extending piped networks. This is equivalent to private investment of \$1.56 USD for every \$1 invested by *3i*. 5,392 households – equivalent to 24,264 people - have connected. Future connections of 155,347 households and companies may reach nearly 700,000 Cambodians. It is estimated that a further 100 or 200 sites could be made commercially viable with similar viability gap funding.

Demonstrating that the concept is not limited to the water sector, *3i* has also applied the concept to the electricity sector. To date, commitment from *3i* of \$2.1 million USD¹ has leveraged a commitment of \$6.5 million USD from 18 electricity companies, enabling 8,555 households to connect. Expected future connections of 33,532 households will enable over 150,000 Cambodians to enjoy and benefit from electricity services that would otherwise have not been provided.

Although the political economy of Cambodia’s water sector has contributed to the success of the viability gap funding to date, many countries share similar characteristics to Cambodia - low levels of coverage, a weak domestic resource allocation, some existence of private operators, and a post-conflict history. Public agencies and donors operating in countries with such characteristics may benefit from considering viability gap funding in their portfolios.

¹ \$1.8 million USD has been disbursed as of July 2018.

The Case for Investing in Infrastructure

Infrastructure – roads, telecommunications, water, electricity – is essential for economic growth and poverty reduction. In its absence, individuals and entire nations suffer economic and social costs. Goods cannot be brought to markets without roads and few businesses can operate without water or electricity. Health improvements and other social development gains will not be fully realized without investing in infrastructure.

Developing infrastructure is capital intensive and an array of public and private financing options exist, but investment gaps persist. For example, globally, emerging economies are estimated to spend one trillion dollars on infrastructure, but still face a financing gap of another trillion dollars to extend services and keep up with population growth.² Public resources are constrained and directed where they are expected to have the most impact, which is most often urban areas. Private investment in infrastructure seeks a financial return, which is likely to be greater in urban areas or from large projects with many users, such as roads or telecommunications. There are thus challenges in attracting more finance to infrastructure investments and spreading that investment into rural areas.

While infrastructure development tends to bring to mind mega-projects, in many emerging economies, small private operators have played a role in asset development and providing basic services like water and electricity in the absence of public service providers. Cambodia is one such country – private water operators (PWOs) and rural electricity enterprises (REEs) supply millions of Cambodians in rural areas and small towns with these essential services. Cambodia has experienced high rates of economic growth and poverty reduction but has struggled to translate the benefits of growth and reduction into equitable access to water and electricity throughout the country.

In this context of overall economic growth and poverty reduction in Cambodia, Palladium's *Investing in Infrastructure (3i)*³ program sought to understand the opportunities to improve the rural water and electricity market systems, to enable large numbers of Cambodians to benefit from such critical basic services. This document shares the experience to date in the water market system at the halfway point of the five-year program.

Water Market System in Cambodia

The water market system is composed of multiple public and private actors, together supplying 70% of Cambodians with water services⁴. Piped water access, however, is much lower, at only 21% of the country.⁵ Several government agencies play a role in regulating the water sector, and relevant recent reforms include 20-year service licenses, offering a monopoly to the private water operator who secures the license. Opportunities for improvement in the water market system are plentiful, but in order of importance, capital mobilization to enable increased consumer access is one of the most critical.

Actors

Cambodia's water market system is characterized by a blend of public utilities, private water operators, voluntary community-managed systems, and household self-supply. The Phnom Penh Water Supply Agency (PPWSA)⁶ supplies water in the capital city; public water companies supply major provincial towns, private

² <http://www.worldbank.org/en/topic/publicprivatepartnerships/brief/global-infrastructure-facility-gif>

³ *Investing in Infrastructure (3i)* is a 5-year program funded by the Australian Department of Foreign Affairs and Trade. See Annex A for a full description of the program

⁴ Progress on Drinking Water, Sanitation and Hygiene: 2017 Update and SDG Baselines. Geneva: World Health Organization (WHO) and the United Nations Children's Fund (UNICEF), 2017.

⁵ Ibid.

⁶ PPWSA is a private company with the GoC as the majority shareholder

operators supply small towns and rural areas, and dispersed rural areas either source water from communal sources or manage their water needs individually. This pluralistic service delivery model emerged in the post-conflict period and continues to date. Public utilities are estimated to provide 1.2 million Cambodians with water, complemented by an estimated 300 private water operators in Cambodia that supply over 1.4 million Cambodians with piped water in small towns and rural areas⁷. Private operators tend to be family-run, often with a personal or business link to the coverage area that they supply water to, with more details given in Box 1. The market is highly fragmented, with most water operators serving one license area, although there are a few examples of consolidated companies emerging.

Box 1: Who are these Private Operators?

Most are micro, family-owned and operated businesses. It is common to see husbands and wives, or parents and grown children working together in the business. They typically have a personal or business relationship to the service areas, with several of them having experienced the lack of water first-hand. Multiple studies have confirmed a blend of financial and social incentives for entering and expanding in the water market.



Mr. Phun Sokun, pictured above with his wife and an improved treatment plant, is one of the operators who has worked with *3i* to date. He was motivated to begin a piped water business when he visited his in-laws and realized the service was non-existent there. A secondary school teacher by trade, he has invested his own capital bit by bit in developing source an intake structure, storage tank, a rudimentary treatment plant, and distribution networks over the last 3 years to serve 340 households. The viability gap funding from *3i* will allow him to expand his coverage area to 3 more villages, eventually offering connections to close to 1400 households.

The regulatory environment for water includes multiple government agencies. The Ministry of Water Resources and Meteorology oversees the development of water resources. The Ministry of Industry and Handicraft (MIH) is responsible for regulating urban utilities, including all private water operators, irrespective of location. And the Ministry of Rural Development oversees the development of non-commercial water infrastructure in rural areas.

The regulatory environment is emerging from a transition period, with MIH assuming oversight of commercial water companies only in the past couple of years. One of the most important functions MIH fulfills is granting licenses to private water operators. A previous 3-year license has been replaced with a 20-year license to leverage more private investment in meeting Cambodia's 2025 goal of providing piped water to 95% of its population. 3-year licenses did not offer private operators the security they needed to invest in capital expenditures that they most likely would not see a return until many years after their licenses expired.

⁷ Sy, Jemima, and Robert Warner, with Jane Jamieson. 2014. Tapping the Markets: Opportunities for Domestic Investments in Water and Sanitation for the Poor. Directions in Development. Washington, DC: World Bank.

With rising incomes and aspirations, the demand for piped water in rural Cambodia is high, as it offers a convenient solution to a household or business’s water needs. Box 2 describes the diverse characteristics of potential customers.

Box 2: Who are the potential customers?

Private water operators are granted licenses for communes, a local government administrative unit in Cambodia. Predominantly rural areas, the numbers of households vary, but 3i supports areas with populations from just above 1,000 to under 10,000. As the utility is given a license to serve all people residing in its jurisdiction, socio-economic characteristics vary widely, from low-income consumers receiving government subsidies to those much better off. Livelihoods range from farmers, to fishermen, to business owners and professionals. In socio-economic surveys conducted by the program for each feasibility study, consumers express a range of reasons for wanting to connect, although convenience and cost appear to be important motivating factors.

Access

Cambodia has experienced high levels of economic growth for two decades, but many of the benefits of that growth have been limited to urban areas. As both a contribution to that growth, and result from that growth, urban areas in Cambodia enjoy reliable water services, facilitating economic opportunities and improved quality of life. However, investments in rural water infrastructure have lagged behind urban investments. Rural areas, where 80% of Cambodians live, are much more likely to have to solve their own water problems. 70% of Cambodians do not have access to piped water, most of them residing in rural areas.

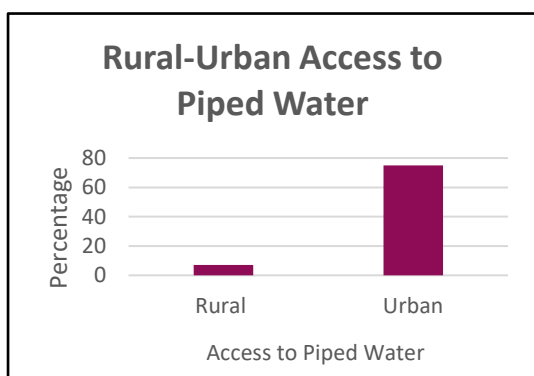


Figure 1: Rural-Urban Access to Piped Water⁸

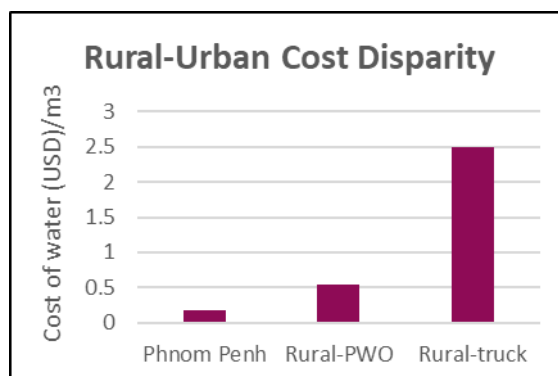


Figure 2: Rural-Urban Cost Disparity⁹

Figure 1 illustrates that urban Cambodians are ten times more likely to have piped water in their home than Cambodians in rural areas. Dispersed populations limit the commercial viability of water services, so other models will most likely be required to improve access for all Cambodians. Disparities are not just limited to water access. The cost of water also varies greatly. Figure 2 shows that the cost of water for urban residents in Phnom Penh is one-third of what rural Cambodians connected to a private water operator pay, and one fifteenth of the cost that Cambodians relying on trucked water service pay. Economies of scale allow for price reductions in the larger urban areas, but the smaller scale, fragmented private suppliers do not operate at the same scale and therefore charge higher rates.

⁸ Ibid

⁹ Elaborated by consultants with data provided by 3i team

Opportunities for Improvement

There are many opportunities for improvement in the rural water market system, including extending first-time access, improving the reliability and quality of existing services, reforming the enabling environment, strengthening the technical capacity of service providers, and many more. The licensing process has created a fundamental change in the market system, but 20-year licenses alone are unlikely to resolve all the constraints. A key bottleneck is financing for capital expenditure. Behind the financing question is an information gap – under what conditions and when could an operator recoup their investment? Cambodia’s continued economic growth and 2016 achievement of lower middle-income country status means the nature of external finance will most likely change, putting increased pressure on public funds, domestic private capital, and user fees and contributions.

The World Bank estimates the cost of reaching the Sustainable Development Goal (SDG) for water in Cambodia to be \$92 million USD per year¹⁰. However, domestic and external anticipated resource allocation for water infrastructure is only expected to be \$30 million USD, creating an annual deficit of more than \$60 million USD. An important caveat to these figures is that the Royal Government of Cambodia’s (RGC) own water infrastructure goals are more ambitious than the SDGs, as they aspire to provide piped water to 95% of its citizens by 2025. The World Bank models assume only 8% of rural households access piped water, therefore the capital expenditure estimates to reach the SDGs vastly underestimate what it will cost to extend piped services to 95% of Cambodians.

Identifying ways to increase overall capital investment in the water market, as well as diversifying those sources, is of paramount importance if the government is to meet its goal of universal access by 2025. The regulatory environment has transitioned with responsibilities currently shared among multiple ministries and a lengthier license now offered. Extending the license period – from 3 to 20 years – is an explicit strategy of the RGC to incentivize private investment in the water sector. Several externally-financed programs have previously supported efforts to increase private investment in water. This has ranged from including output-based connection subsidies directly to private water operators¹¹ to concessional loans and guarantee funds with formal financial institutions¹². Complementary programs have attempted to build private water operators’ capacity and creditworthiness to be able to secure commercial finance.

3i’s market assessment confirmed the results from prior studies that private water operators were interested in expanding their services, but felt constrained to do so for several reasons, one of the most critical being affordable capital to expand and an understanding of when investments could be recouped.

3i Strategy: Business Feasibility Information & Viability Gap Funding

The nature of the rural water market system shaped *3i*’s intervention strategy. Key characteristics of the market include (1) existing, profitable private water operators; (2) an emerging formalized monopolistic environment with scant competition¹³; (3) unmet consumer demand in underpenetrated service areas; and (4) public support for leveraging private investment in rural water service delivery. Complementary external programs were focused on technical trainings for private operators and formal financial products, but neither of these were incentivising private operators to expand to less viable areas. Thus, *3i* decided to

¹⁰ Smets, Susana. 2015. Water Supply and Sanitation in Cambodia: Turning Finance into Services for the Future. Washington, DC: World Bank.

¹¹ Hill, David et al. 2011. An Incentive Rebate Approach to Growing Private Water Systems: Lessons from a Cambodian Experiment. Washington, DC: USAID.

¹² World Bank. 2016. Facilitated access to finance for domestic private water operators in Cambodia (English). Case Studies in Blended Finance for Water and Sanitation. Washington, D.C.: World Bank Group.

¹³ Although there will only be one water operator licensed to serve an area, other water sources, like untreated surface water, household wells, rainwater catchment, trucked water, and/or bottled water may compete with piped water.

experiment with a known public subsidy tool – viability gap funding– and couple it with business feasibility information to test whether private operators could be incentivised to invest and expand their services.

Viability gap funding (VGF) is a subsidy tool that governments use to incentivise private investment in infrastructure projects that are economically and socially viable but are not financially viable in the short term¹⁴. It has been used by governments in many countries to encourage private investment in infrastructure projects, but most of these examples have been at a very large scale (billions of dollars) and in lucrative sectors, such as transportation and energy. It has been less applied for smaller infrastructure investments and in less profitable sectors, such as water. But given the nature of the market in Cambodia at this point in time, it was a viable option to experiment with to see if private water operators could be triggered to invest in less financially viable areas if the payback period could be reduced with VGF.

In the Cambodian context, the tactic addresses two different, but related constraints:

Business viability information: Private operators were choosing to invest in the water business based on limited information on financial returns. Many of the private operators are from the areas in which they operate systems and experienced the lack of water themselves, so were motivated by both social and financial incentives. Intuitively, they gravitated towards more densely populated areas where the business opportunities would be greater. Recently, however, there was a sense in the market that the “good sites” - the more profitable ones – were already taken. Maximising financial returns in water supply is usually achieved through (1) increasing water tariffs; (2) expanding customer base; (3) reducing operational costs. Increasing water tariffs is politically and socially challenging in Cambodia. For this reason, MIH regulates the tariffs. Expanding the customer base is more realistic for private operators to influence. Many private operators were not operating at full capacity, due somewhat to competing sources of household water, but also because they did not have information on the payback period for less immediately viable sites.

Finance to expand into less profitable areas: Most private operators self-financed their initial asset development using savings, loans from social networks, or selling their own property. Formal financial products have yet to emerge that are appropriately structured and sized for the nature of the rural Cambodian water market. Most critically, collateral requirements can be over 200 percent of the loan and there are restrictions on what can be used as collateral¹⁵. Although many operators do access commercial financing, the cost of capital constrains their ability and interest to secure enough capital for expansion into less profitable areas.

Applying Viability Gap Funding in Practice

What is a simple concept in theory – viability gap funding– is an intensive process in practice. As it had never been tried before in the water sector in Cambodia, a flexible program design allowed the team to explore multiple implementation models and refine its processes and tools along the way.

Private Water Operator Selection

3i supports three types of private operators: existing unlicensed operators, successful bidders for greenfield developments, and a unique holding company that agglomerates rural water licenses in underpenetrated areas.

Unlicensed Operators

At the request of MIH, the program decided to focus most of its investment in unlicensed operators – those who had not yet begun or finalised the legal registration process. The rationale for this was that the program’s offer of information and viability gap funding would further incentivise unlicensed private

¹⁴ Private Infrastructure Development Group. 2013. “What is Viability Gap Funding?” PIDG, London UK.

¹⁵ World Bank, 2016

operators to complete the license application process, an explicit goal of MIH. Licensed operators tend to be larger businesses, and a few had benefited from previous donor-supported direct financial support or access to concessional finance. Unlicensed operators had been excluded from participating due to the legal status (and other challenges), and thus had been slower to expand their operations. Thus, targeting support to unlicensed operators also served a political imperative to help license and regulate more water operators.

Greenfield Development

3i also supports MIH’s competitive tendering process for greenfield development in communes which currently do not have piped water. This began with technical support from 3i to assess the feasibility of over 300 potential sites, which has been submitted to MIH and has informed the prioritisation of sites. Following site selection, 3i supports MIH in developing the technical information required for the bidding process, which includes socioeconomic studies, financial modelling, and technical specifications. This information is critical for potential bidders to assess the commercial viability of the sites and their offers. It is important to mention that although 3i provides technical assistance to MIH in developing the tender documents, a committee of MIH and local government representatives selects the winning bid, primarily based on the tariff proposed by the prospective water operator. Once a bidder has been selected, 3i enters into an output-based agreement with the winning company. Although 3i’s support to MIH is technically-focused, it can be considered to be supporting good governance in the water sector as it is contributing to a transparent selection process.

Khmer Water Supply Holding Company

The Khmer Water Supply Holding Company (KWSH) is a unique actor in the Cambodian water sector. It operates multiple water systems and was seeking to grow its asset base to be able to access more affordable capital. Greater details on this model is provided in the results section below.

Implementation Process

Figure 3 summarises the process of identifying, evaluating, financing, and monitoring private water operators’ expansion into less commercially viable areas¹⁶. Boxes at the top of the figure provide actual numbers of progress to date as of July 2018. For each operator who meets the criteria established in the

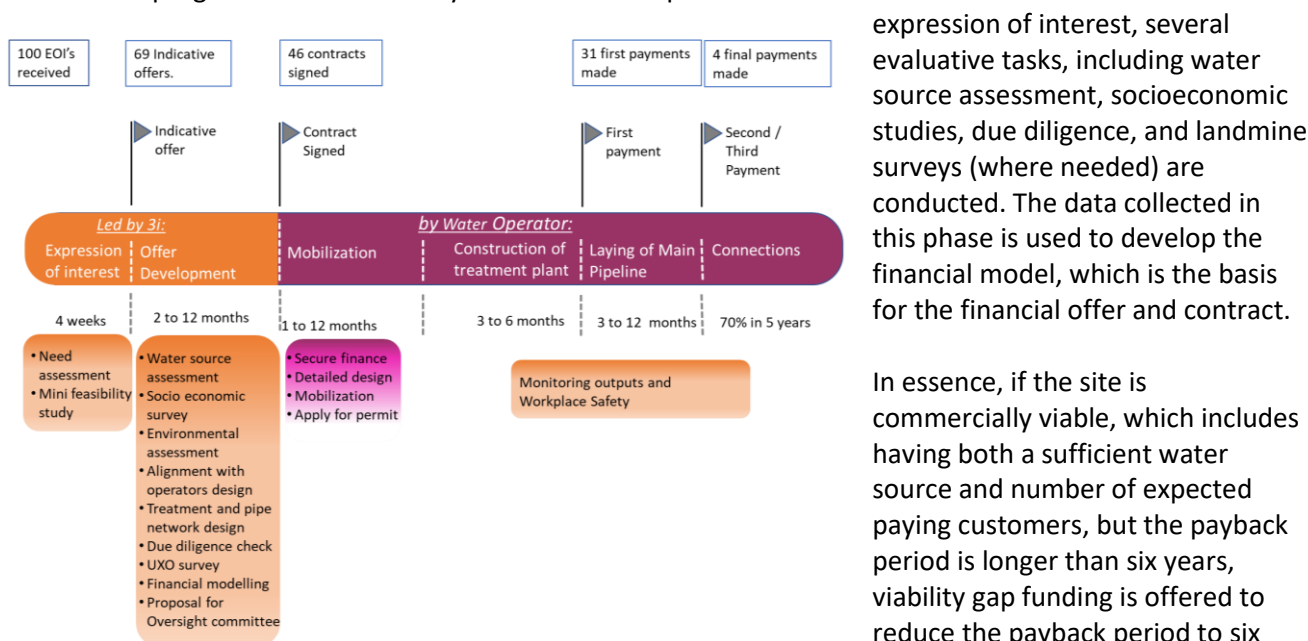


Figure 3. Implementation Process

¹⁶ This process is specific to the unlicensed private operators that 3i supports. The competitive tendering process for new site development follows a different process.

years, which has been proven to be an acceptable payback period to private operators. The financial offer is limited to 60% of the overall cost or a value for money per capita cost, which has varied over the first couple of years of the program but currently is US\$65 per household, or \$14.5 per capita.

The contracts embodying the financial offer from 3i to water operators are output-based, with payments made following the construction of the treatment plant and the extension of the pipeline to the new service areas. 3i staff monitor the construction progress at key points to ensure minimum technical and safety standards are met but are otherwise not involved in the construction or licensing process. Connections are then monitored by the program team, which tend to begin on average two years after contract signing.

The latter half of the implementation process – constructing a new treatment plant, extending piped network, and households connecting to and enjoying the benefits of piped, treated water inside the home is shown in practice in Figure 4.



Figure 4: Implementation in Practice

Results to Date

After nearly three years of operations, what has the program been able to achieve? And what are the prospects for it to last?

Pluralism in Practice

Infrastructure financing tends to be at very large or very small scale. Donor funding for infrastructure often favours public or communal recipients of investment, excluding domestic private sector operators. Developing formal financial products for domestic private utilities is a positive development in the infrastructure financial market system in Cambodia,

53 private water companies have invested into less commercially viable areas

but it does not necessarily solve the problem of how to incentivise private operators to expand into less lucrative geographical areas.

To date, *3i* has triggered investment from 53 private water companies. This figure includes 46 existing private water companies, 6 companies developing greenfield sites, and KWSH. It is estimated that a further 100 or 200 sites could be made commercially viable with a viability gap investment. A variation on the predominant model of service delivery is described in Box 3.

Box 3: Khmer Water Supply Holding – Searching for Economies of Scale in Rural Water:

The rural water market in Cambodia, like many other countries, is fragmented and the transaction costs of investing in many smaller companies has limited investor appetite to date. However, one company sees this as an opportunity rather than a challenge. Set up in 2013 as an investment holding company, the Khmer Water Supply Holding (KWSH) is a rare demonstration of economies of scale in rural water service provision. KWSH sees a unique opportunity to consolidate rural water businesses and access institutional and impact investors that would otherwise not be interested in the market. Majority-owned by INSITOR, an Asian impact investment fund, KWSH acquired its first rural water company in 2013. It has already expanded its operations ten-fold, from providing approximately 1,000 customers to over 10,000. KWSH now sees a business opportunity in acquiring underpenetrated existing license areas to develop them to their full-service potential. *3i* has supported KWSH’s growth with an investment to acquire two further sites as well as attract additional investors. Previous owners are offered equity in their companies but do retain some ownership and are required to invest a proportion of the capital expenditure necessary to extend service areas.

As KWSH acts as a holding company for institutional investors, it seeks opportunities that will allow some profit to be returned to investors. This means the threshold for the sites they invest in (3,000 minimum) are larger than individual private companies. They have already demonstrated a capacity to expand their business, and with increased investment, hope to acquire up to 8 more licenses. A portfolio of this size is estimated to be able to service 45,000 household connections, which KWSH assumes could be large enough to attract more attractive financing options from development banks in the region.

benefit financially the more water a household uses. The economics of the financial model rely on households connecting to the network, and thus private water operators have employed a range of strategies to encourage people to connect. While each service area has its peculiarities, there are generally a wave of “first – movers,” people who need no motivation to connect and are signing up when pipes are being laid. For people who are less motivated or more financially constrained by the connection fee, operators have laid pipes during the dry season when

Leveraging Additional Private Investment

Most private water operators had self-financed their prior investments into water assets in relatively densely populated areas. It is unlikely that

\$15.6 million USD of private capital has been committed to expansion into less viable areas

they would have expanded at the speed or scale without the viability gap funding offered by *3i*. But beyond the speed and scale of investment, there have also been efficiency gains as infrastructure is being built to accommodate future growth as opposed to small investments over time. With a total investment commitment of \$10.5 million USD by *3i* to date, the 53 companies are in the process of investing over \$15.6 million USD in expanding water sources, constructing water treatment plants, and extending piped networks. This is equivalent to private investment of \$1.56 USD for every \$1 invested by *3i*.

Moving up the Service Ladder

Having access to – and using – a reliable source of piped water is good for households, businesses, private water operators, and the Cambodian economy. Increased quantity and better quality of water allow for a range of health, economic, and social benefits at the household level. Often the cost of water is also reduced when households and businesses connect to a piped system if their previous source of water was purchased from a water truck.

5,392 households – equivalent to 24,264 people have connected. Future connections of 155,347 may reach nearly 700,000 Cambodians.

Private operators

water shortages are more salient in people's minds, and thus more likely to connect. Several operators offer new customers the opportunity to pay the connection fees in instalments, or discounts for the first people to sign up, to overcome financial constraints. In addition, the program is testing whether a household connection subsidy for poor households has any impact of the speed at which poor households connect, but it is too early to assess the impact of the subsidy.

Will it Last?

There are several sustainability considerations for a program like *3i*. The first is whether the existing private water companies will remain in the piped water business. Early indications are positive that *3i* is supporting profitable enterprises, so they will. Most importantly, all the companies are existing private water operators and it is unlikely that they would have continued in the business if they were not generating returns. The 20-year license is another positive indication that they will continue as they will have a monopoly on the provision of piped water.

The next consideration is linked to the sustainability of the businesses and whether households and businesses will connect and remain connected. Socio-economic surveys demonstrated high levels of willingness to connect and although connection speeds will most likely vary in practice, depending on consumer interest and availability of alternate sources, MIH's assumption that 70% of people will connect over 5 years is reasonable. Insights into actual rates of connection will provide the public authorities and private water operators more accurate data.

The third sustainability consideration relates to provision of the viability gap funding itself. Who else could trigger private investment in economically and socially viable projects that suffer from short term financial viability issues? Three options exist:

Governments: Viability gap funding is essentially a public financing tool. Should the Royal Government of Cambodia decide to prioritize triggering private investment in smaller scale infrastructure programs, they could direct some public finance to viability gap funding.

Donors: Historically, donor funding for water infrastructure investments has been directed at public service providers or to non-governmental organisations to develop communal or self-supply solutions. Depending on funding mandates and interests, development partners could replicate the concept for remaining private water operators.

Private investors: While private investors most likely will not offer grant funding, the KWSH experience suggests that impact investors may be willing to invest in water and accept financial and social returns if transaction costs can be reduced through agglomeration.

Not Just a Water Solution

Viability gap funding has also been offered to rural electricity businesses. However, the electricity market in Cambodia is further developed than the water market and this is evident in the level of organization of the firms (they are all licensed, for example); and the financial markets supporting electricity expansion. Interest-free loans are available from national government institutions and the sector is in a process of consolidation, with larger rural electricity enterprises purchasing smaller ones. *3i* has supported electricity companies directly to extend their network and with household connection subsidies. To date, a commitment from *3i* of \$2.1 million USD has triggered investment of \$6.5 million USD from 18 electricity companies, enabling 8,555 households to connect. Expected future connections of 33,532 will enable over 150,000 Cambodians to enjoy and benefit from electricity services.

Key Lessons and Conclusions

The experience to date of applying business feasibility information and viability gap funding in the rural water market system in Cambodia suggests that private operators can be triggered to invest in extending their business into less viable areas. *3i*'s work to date with over 50 companies serves as an example to be considered for replication with potentially another 100-200 companies operating in commercially viable sites. And the KWSH example is one to watch – can agglomeration of rural water companies lead to increased efficiencies, access to new sources of capital, and ultimately, more Cambodians connected to piped water services? The application of the financial tool to the rural electricity market confirms that the financial tactic is not limited to the piped water sector but may be applicable to any infrastructure that includes private operators.

The real test of success is households and businesses connecting to water (and electricity) and consequently experiencing economic and social benefits. However, it is impossible for benefits to accrue at a consumer level without first expanding the reach of private water providers, so supporting businesses to overcome their financing hurdles is a crucial first step to achieving development impact. To date, the program has successfully demonstrated that applying viability gap funding to private water providers can trigger private investment, which has enabled water businesses to expand. As piped water businesses are a proven concept in Cambodia, offering a convenient and affordable product that people are willing to pay for, it is very likely that as private water provision continues to expand, households and businesses will connect and enjoy the benefits.

Several reasons underpin the success to date and point the way forward:

- A right-sized solution that is fit for purpose: The reality of the Cambodian water sector – one in which private, relatively small and currently unlicensed operators supply millions of Cambodians with water – shaped the intervention strategy and is a fundamental reason for its success to date. Business feasibility information and viability gap funding respond to current constraints and opportunities in the Cambodian rural water market and complement other efforts at developing formal financial products for licensed operators.
- License to operate: The regulatory reforms which began several years back are beginning to pay dividends. Extending the tenure from 3 years to 20 years appears to be giving private operators more confidence to invest in extending their networks. The license itself is providing a similar function to property titles in other market systems – it generates investor and, in this case, operator – confidence in investments that will take at least 5 years to generate a return.
- Power to the people: People willing to try something new are found in all the organizations involved in this program, also contributing to its success. From early champions at DFAT who wanted to try something new in the infrastructure sector, to the visionary Secretary at the MIH who is pushing reforms, to the *3i* program staff and entrepreneurial water operators, all have played a role in extending essential services to rural Cambodians.
- Flexibility: The program design document offered the program the option to explore multiple sectors, intervene in various ways, reflect on early experience, and then adapt and refine the approach; that flexibility by design has been fundamental to the program's success.

Although the political economy of Cambodia's water sector has contributed to the success of the viability gap funding to date, many countries share similar characteristics to Cambodia - low levels of coverage, weak domestic resource allocation, some existence of private operators, and a post-conflict history¹⁷. The electricity example confirms that this is not solely a water financing tactic, but one that may be applied

¹⁷ Sy, 2014.

across other infrastructure sectors to unlock private investment. Recommendations for governments and donors operating in countries with such characteristics are the following:

- Governments: Viability gap funding is a public investment tool and has been used in a range of countries and sectors. But it has not been applied for smaller infrastructure investments and even less so in the rural water sector. And the environment into which it is applied shapes the chances of it leading to more inclusive infrastructure. Governments should consider including viability gap funding in their infrastructure development budgets to extend services and incentivise private investment.
- Impact investors and donors: The question is not whether to invest in infrastructure, but how. Look for the opportunities where traditional financing sources of infrastructure are not investing and use development finance to catalyse local private investment to increase services for all.

ANNEX A: INVESTING IN INFRASTRUCTURE PROGRAM DESCRIPTION

Investing in Infrastructure (3i) is a bilateral aid program offered by the Australian Government to the Royal Government of Cambodia. Australia's Department of Foreign Affairs and Trade (DFAT) is responsible for funding and for supervising the program, which is implemented by Palladium. Representatives from DFAT are actively guiding and supporting the program. DFAT is a chair of 3i's Program Board that has a strategic oversight function. Approving annual workplans and monitoring progress are two main tasks of the Program Board.

The Council for the Development of Cambodia (CDC) functions as the co-chair of the Program Board and supports the program in strategic and operations issues.

The Ministry of Industry and Handicraft (MIH) is a member of the Program Board and gives daily guidance to the project on issues related to private water companies.

The Ministry of Mines and Energy (MME) is a member of the Program Board and gives guidance to the project on issues related to private electricity companies.

The Ministry of Economy and Finance (MEF) is the fifth permanent Program Board member.

The Palladium Group implements the 3i program.

THE PROGRAM

Investing in Infrastructure started its 5-year contract in August 2015 with a budget of around 45 million AUD. It is likely that the program will be extended.

The program undertakes the following activities:

Piped and treated water

- Technical and financial support to starting and existing private piped water companies.
- Technical and financial support to MIH in tendering new 20 years licenses to green fields.
- Support to water related organizations like the Cambodian Water Association.
- Support to MIH for training existing private water companies.

Electricity distribution

- Financial support to expanding Rural Electricity Enterprises.
- Support to MME on renewable energy policy.

Financial markets

- Support to financial service providers for utility infrastructure.

The program explored opportunities in solid waste recycling, solar energy and water transportation. Excellent opportunities in the existing sectors however made the Program Board decide to focus on private water and electricity companies as well as on policy.

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