

Private and social enterprise roles in WASH for the poor: A systematic review

Journal of Water, Sanitation and Hygiene for Development

Authors:

Anna Gero

Naomi Carrard

Janina Murta

Juliet Willetts

Institute for Sustainable Futures,

University of Technology Sydney

PO Box 123

Broadway NSW 2007

Australia

Telephone: +61 (0) 2 9514 4605

Fax: +61 (0) 2 9514 4941

www.isf.uts.edu.au/

Anna Gero (corresponding author) anna.gero@uts.edu.au

Abstract

Micro, small and medium private and social enterprises are emerging as important players in the water, sanitation and hygiene sector. This paper provides a systematic review of literature on this topic. It assesses the current evidence base in three areas: factors affecting success of enterprise engagement; outcomes for the poor as a result of enterprise engagement; and lastly how civil society organisations are engaging to support enterprise development. The review revealed significant variation in the level of rigour of available evidence on this topic, and reflected limited availability of highly rigorous studies. Across the literature, similar success factors were reported across the water and sanitation sub-sectors. These included constraints to business viability due to limitations in demand, lack of business and technical skills and financial challenges (for example access to credit). Policy, governance and institutional frameworks could either support or constrain businesses depending on the context. Whilst some evidence was reported on the positive outcomes for the poor resulting from enterprise engagement, in general businesses preferred servicing non-poor customers. Lastly, evidence on civil society organisation engagement was limited, and where reported, consisted dominantly of capacity building support to enterprises rather than a wider variety of roles which might be envisaged.

Key words:

Civil society organisations, private enterprise, social enterprise, systematic review, water and sanitation services

Introduction

Background

Micro, small and medium private and social enterprises (hereafter referred to as 'enterprise') are emerging as important players in enabling or delivering sustainable water, sanitation and hygiene (WASH) services. This area is highly dynamic, thus pointing to a need for recent consolidated evidence about the effectiveness, sustainability and quality of services provided by such enterprises. A synthesis of literature on small-scale sanitation entrepreneurs was conducted in 2008, and at that time reported that "*quality research was relatively scarce, and...few good case studies were found*" (Valfrey-Visser and Schaub-Jones 2008, p.4). This paper reviews literature over the five years since 2008, once again taking stock and examining the nature and quality of the evidence for private enterprise engagement across both sanitation and water sub-sectors. In particular, we review of the evidence concerning if and how poor households and communities are being supported.

This paper also examines how the aid and development sector, in particular, civil society organisations (CSOs) currently support small-scale private and social enterprise. CSOs are defined here to encompass community based organisations, local non-governmental organisations as well as international non-governmental organisations. Over the past decade, CSOs and others have recognised the poor functionality of rural water services and lack of traction in achieving sanitation behaviour change in coordination with access to appropriate sanitation products and facilities. This has called into question the effectiveness and sustainability of current approaches. As a response in recent years, CSOs have explored new approaches, including working with private and social enterprise to build 'professionalisation' of service delivery, moving beyond voluntary, solely community focused approaches and supporting supply-chain development. To inform such work, there is a need for new thinking on how CSOs can best work at the interface of private, civil society and public sectors to support equitable, sustainable, scalable service delivery for the poor.

This paper forms part of a 3 year research project investigating the role of private and social enterprise in the delivery of WASH services for the poor. In particular, the research aims to support CSOs engaged at the interface of public sector, private and social enterprise, and civil society.

In this paper, we define a private enterprise as a business or industry that is managed by independent companies or private individuals rather than being controlled by the state. Ranging from self-employed individuals to large multi-national businesses, private enterprises are generally motivated by profit (Koestler 2009). We also define a social enterprise (also known as a social business, and closely related to social entrepreneurship) as coupling entrepreneurial behaviour with the desire to drawing upon the market as a tool for meeting social goals, serving the general interest and common good for the benefit of the community (Noya et al. 2013). Emerging as a response to complex social needs and also the reduction in public funding, social enterprises draw on sound business practices and often innovation to the delivery of community services (Peredo and McLean 2006).

Methods

This paper was prepared using a 'systematic review' approach, which is a rigorous approach to undertaking a literature review. Our systematic review approach follows those presented by Overseas Development Institute (ODI) and Department for International Development (DfID - see Hagen-Zanker et al. 2012; Hagen-Zanker and Mallett 2013; DFID 2011; DFID 2013), which draw on the rigour of a traditional systematic review, but allow for the flexibility needed in assessing the dynamics and complexity of the international development sector.

Academic and grey (non-peer reviewed) literature was compiled through a defined search strategy of databases, websites and journals. Inclusion and exclusion criteria included year range (2008 onwards); type of publication (not media); Language (English only) and country setting (i.e. poor / challenging contexts, defined using key words and the lower-middle income list of countries from the World Bank). The focus was on water and sanitation services, which at times touches on hygiene, however a specific additional focus was not given to hygiene. We also collected documents through networks and contacts within the WASH sector. 164 relevant documents (reduced from a total of 4211 from first-round searching) were mapped against a selection of categories and the rigour of the evidence was assessed. A subset of 82 documents deemed highly relevant to the topic were reviewed in more detail, drawing out the following aspects:

- factors affecting success of enterprise engagement
- evidence about outcomes for the poor
- enterprise engagement with CSOs.

This paper is structured to include an initial section on the types of enterprise providing WASH services of some kind with an assessment of the nature of the available evidence. This is followed by qualitative analysis of the evidence against the three areas above, first with a focus on sanitation, then on water, and then on literature that cut across the two sub-sectors. The paper concludes with a short section on implications for the sector.

Results

Types of enterprise providing WASH services

Many different types of enterprise play roles to support WASH services, with some overlapping between different types. Examples drawn from across the literature included producers and sellers

of hardware in the form of importers, retailer and wholesalers. Sometimes these were in the form of specialised businesses such as prefabricated concrete producers or rural sanitation marts. Other variations were franchises and network models, as well as 'One Stop Shops' (also called business aggregators or turn-key solutions). Micro-entrepreneurs, non-governmental organisations (NGOs) and community based organisations (CBOs) as well as user associations were also described in the literature. Service provision was another role taken on by some enterprises, such as formal private operators working under licence or in public-private partnerships (PPPs) across different scales, as well as informal providers. Large companies, including multinational corporations were also described to play roles.

This breadth demonstrates the considerable diversity in size and function of enterprise involvement in the sector.

Characterisation of the literature examining enterprise roles in WASH

The most common document types of literature found were international organisation reports, independent research reports and CSO reports (see Figure 1). Most document types were dominated by documents with "some rigour," except for journal articles, doctoral and masters theses, and donor reports, which as might be expected, had a higher proportion of "highly rigorous" documents. Levels of rigour were defined as follows:

- Highly rigorous – transparent research design and structured analytical process.
- Some rigour – evidence of some structure and analytical basis, but examples not grounded in theory, or without transparent data or analysis process.
- Low rigour –descriptive, no clear evidence of analytical process, and rests on opinion rather than illustrative examples.

Classifying literature using this scale aims to better understand the nature and quality of available evidence, and can help point to where gaps exist in terms of robust research and analysis. Degrees of rigour are raised in relation to specific literature in parts of this paper to illustrate this point.

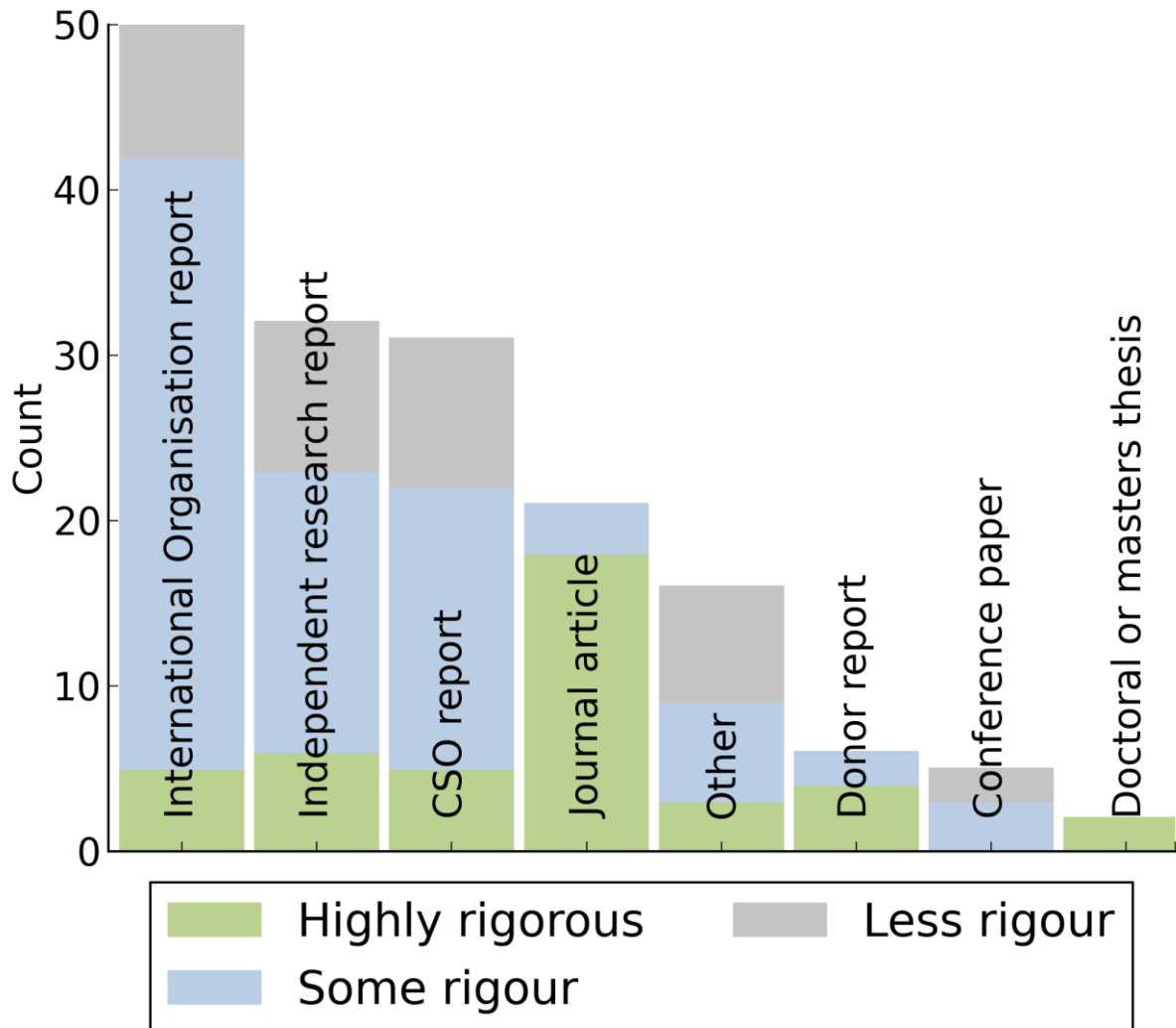


Figure 1: Document type and research rigour

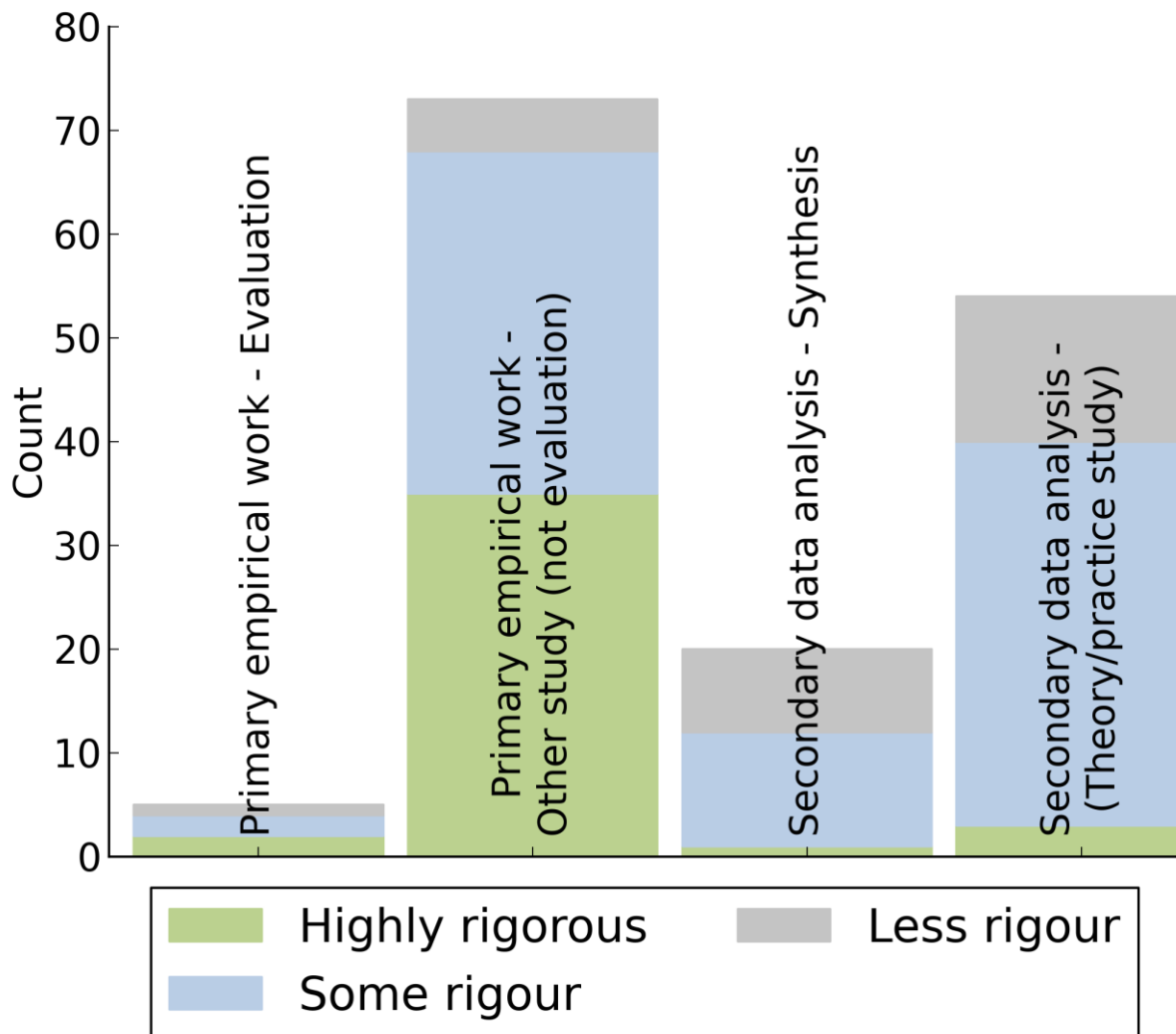


Figure 2: Type of study and research rigour

The dominant type of study was found to be ‘primary empirical work’ with many such studies demonstrating strong rigour (see Figure 2).

The largest proportion of academic literature was focused on Africa (see Figure 3). This may be in part because in Francophone African countries, over a quarter of rural piped water schemes are privately operated. Whereas “[p]rivately-managed piped schemes appear less common in India and Latin America, though private operators are present in several countries including Peru, Paraguay, Colombia, Vietnam, Cambodia and Bangladesh” (Foster, 2012, p. 2).

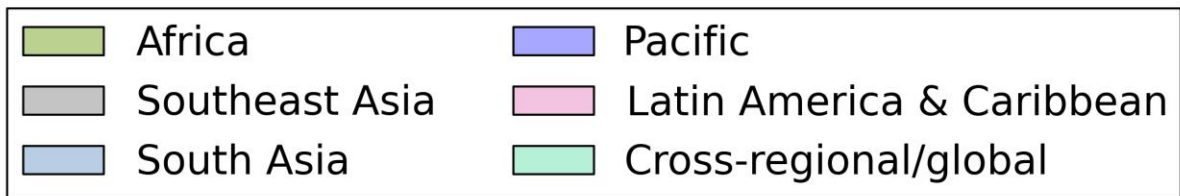
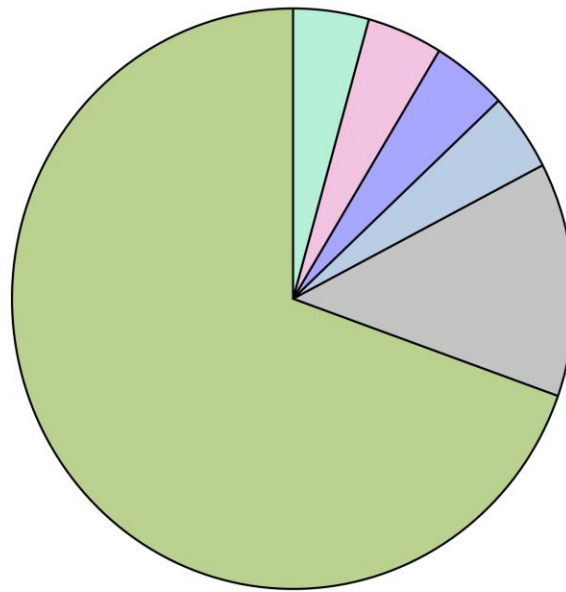


Figure 3: Academic papers by region

Studies focused on rural areas were most common (see Figure 4). A lower proportion of papers had an urban focus, likely because we excluded literature focused on larger private sector companies to keep a core focus on small-scale providers.

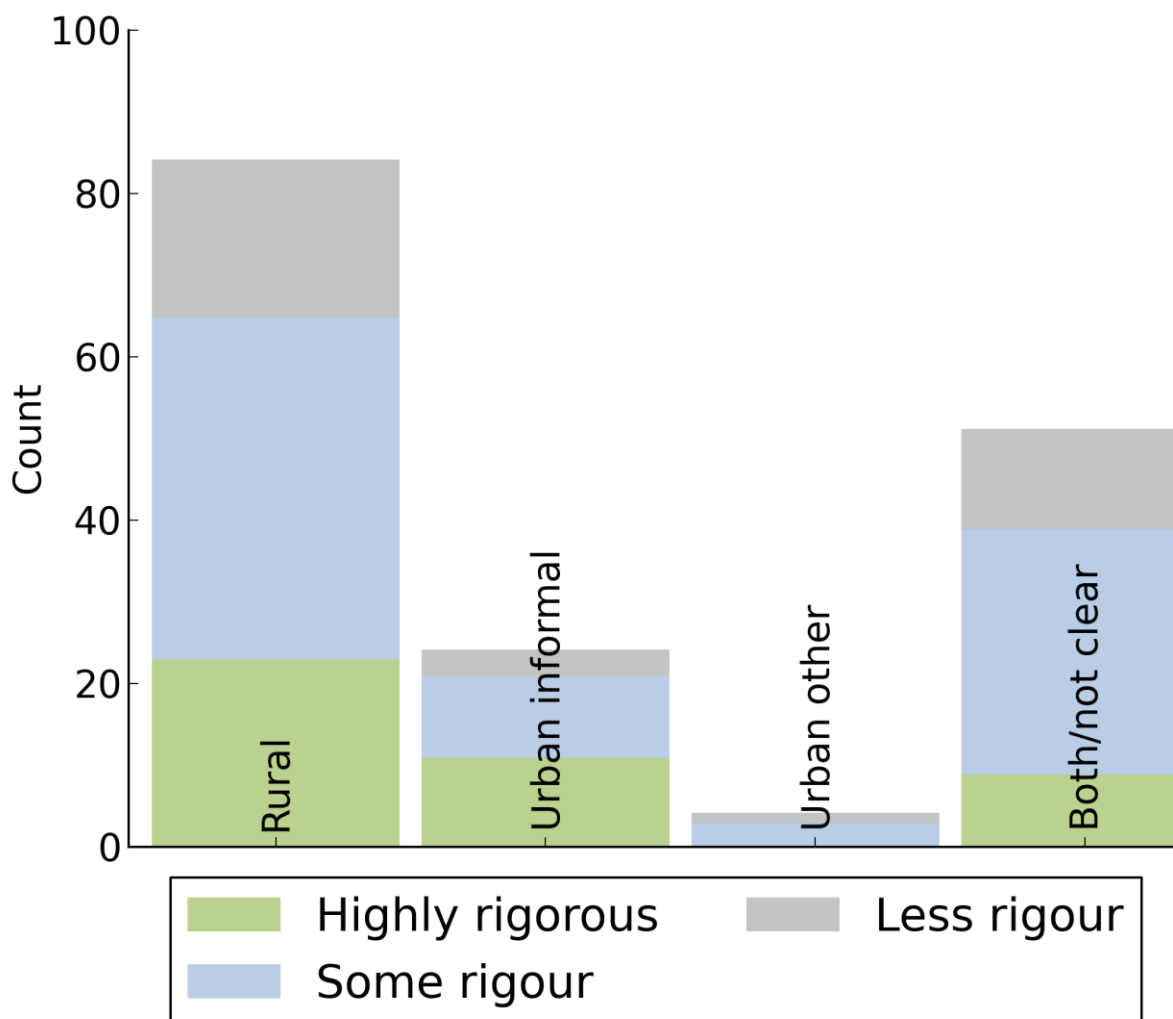


Figure 4: Urban versus rural and research rigour

The spread of literature from the last five years on enterprise roles demonstrates an increasing focus on sanitation products, marketing and latrine construction, in line with recent trends in the sector to adopt 'sanitation marketing' approaches (see Figure 5). Many papers covered policy and governance issues pertaining to enterprise development in addition to a focus on a particular aspect of WASH services.



Figure 5: WASH services covered in the literature

Enterprise contributions to sanitation services

What are the factors affecting success of enterprise engagement?

Most of the sanitation documents had a sanitation marketing focus (46 out of 50), in line with its increasing trend within the sector. Findings are presented below, with bolded statements summarising key findings.

Irregular or low demand for sanitation products and services compromises business viability:

Unsurprisingly, there was strong evidence that the existence of a market to create the demand for sanitation products and services is critical for business viability. Some papers mentioned over-supply as a result of low demand, for example, in the pit-emptying business in Phnom Penh (Chowdhry and Kone 2012) and low demand noted by masons and micro and small enterprises (Desalegn et al. 2012). A report by World Bank and IFC (2013a) notes that concern over the regularity of demand and weak demand as a result of limited availability of options for poor households were constraints to business success. The latter point was also raised by others including Salter (2008). There was significant evidence highlighting that businesses were responding to limited demand for sanitation products and services by diversifying their endeavours. World Bank and IFC (2013a) noted that higher profit margins have been achieved in Indonesia and Peru by “value-adding”; using sludge tank trucks for other purposes has been undertaken in Indonesia (Giltner et al. 2012) while Ikeda (2012) notes that sanitation entrepreneurs only spend 37% of their time on specific sanitation business and additional commitments constrained their ability to expand their sanitation businesses. Further evidence from Bangladesh highlights that diversified businesses were more sustainable (Pedi and Rios 2011), a finding repeated in Papua New Guinea (PNG) (Wicken 2012).

Financial support to businesses and customers was found to be both an enabler and constraint to the viability of sanitation enterprises: Strong evidence highlighted the financial challenge of sourcing, running and maintaining trucks used in the pit emptying business, with economies of scale (i.e. a large fleet) correlated with successful businesses (Chowdhry and Kone 2012). Access to finance, often needed in setting up businesses, was a constraint to small businesses with few options and limited support systems, noted by several authors (Chowdhry and Kone 2012; Mai 2010; USAID 2009; Pedi et al. 2011). From a Sanitation Marketing perspective, suppliers with limited access to finance can lead to unsatisfied household demand (Cole 2013). Occasional non-payments by low-income clients was noted by USAID (2009). Literature also presented polarised views on whether subsidies constrain or enable business viability, mostly based on medium rigour.

Business and technical skills are critical and often insufficient amongst sanitation enterprises, creating a barrier to ongoing viability: The importance of business and technical skills, which are often not sufficient amongst sanitation enterprises, was found in several studies of high and medium rigour to create a barrier to ongoing viability. There was a strong evidence base concerning limited technical expertise and business skills, shortage of marketing and little effort made to improve coordination or reduction of supply chain costs (see Chowdhry and Kone 2012; Mai 2010; USAID 2009; World Bank and IFC 2013a). Past business experience, having the “right” personality, the “right” level and focus of training and appropriate business case assessment skills were raised as components of successful sanitation businesses (Ikeda 2012; Kome 2011; Salter 2008; Perez et al. 2012).

Increasing regulation can restrict illegal activity or alternatively have positive outcomes on businesses through enhanced consumer confidence: There was some evidence that showed how

increasing regulation can prevent informal sanitation enterprises to undertake illegal activities. In several instances business viability was linked to unlawful activity, for example Giltner et al. (2012) notes that below minimum wage, ignoring legislation and tax evasion are practised by sanitation businesses to maintain a profit margin. Bereziat (2009) provides evidence from Dakar where only 35% of businesses operate within the formal rules, and efforts by authorities to more effectively regulate may affect the viability of businesses, forcing fines on illegal dumping. A different business model that aligns with social and environmental standards is needed that can still be viable within such regulations. Conversely, evidence from Pedi and Jenkins (2013a) notes the benefits of 'light touch' regulation of product/service quality, where local authorities accrediting local businesses provided consumer confidence with examples from Vietnam and Indonesia.

Enterprises need to take on risk to create ownership of the business and its operations: Emerging from the sanitation literature was the concept that enterprises need to take on risk to create ownership of the business and its operations. Some studies note the importance to embrace risk as part of the business model (Pedi and Rios 2011; Pedi et al. 2012), while another notes that sensitivity to market changes leads to low risk-taking behaviour amongst faecal sludge emptying businesses (Kome 2011).

Political will, advocacy and appropriate policy can be an enabler to the success of sanitation businesses: The question of policy and the role of government as an enabler or a barrier to the success of sanitation businesses was addressed in literature of high and medium rigour, although discussed much less than in the water literature. World Bank and IFC (2013a) note that government policies have little impact on small sanitation businesses, with large proportions of surveyed enterprises in Bangladesh and Peru (and Tanzania to a lesser extent) unaware of government

policies. Mukherjee et al. (2012) provide evidence of governments providing barriers to sanitation business development through disincentives and discussions around conflict of interests, while other literature notes there is insufficient support to sanitation enterprises from local and district governments (Ikeda 2012; Pedi and Jenkins 2013a). The need for more research on the role of local government was also mentioned, with an example of a case where government directly contracted the private sector, which had consequences of limiting private enterprise development (Rosensweig et al. 2012).

The concept of political will and advocacy in creating enabling environments for sanitation enterprises was raised by several authors, with Cole (2013) providing evidence from Benin, Ethiopia and Indonesia. Sijbesma et al. (2010) provides an example of limited political support for sanitation programs which led to a lack of local government financial commitment while Wicken (2012) notes the importance of political support for sanitation marketing with evidence from PNG. The role of CSOs in advocacy of market based approaches and the roles of small scale enterprise were raised by several authors as being important, particularly with regard to sanitation marketing approaches.

Additional success factors and constraints include the existence of community-led total sanitation (CLTS) in communities prior to sanitation marketing, which is thought to play a role in improving success (Pouv et al. 2012). Village leaders acting as sales agents are able to drive local change in sanitation uptake (Pouv et al. 2012), while gender issues were also raised, noting that poor women who were trained as masons became highly committed and skilled craftswomen (Sijbesma et al. 2010). Corruption and bribery was raised as a constraint to business viability (Bereziat 2009; Kome 2011). The seasonal variability of demand was identified by some as a challenge and constraint (Desalegn et al. 2012; Mai 2010; USAID 2009; Salter 2008; Kome 2011) while others noted the

opportunity to maximise seasonal sales (Pedi 2012). Transport costs and distance were constraints to business viability (Chowdhry and Kone 2012) and challenging for smaller enterprises whose vehicle size limits enterprise expansion (Pedi et al. 2012). Fragmentation of the supply chain is discussed by several authors as a constraint to business viability (World Bank and IFC 2013a; Salter 2008). Pedi et al. (2012) describe a program that aimed to overcome fragmentation through establishing “one-stop-shops” for sanitation products.

What are the outcomes for the poor as a result of enterprise engagement or involvement?

There was limited evidence in the literature on the outcomes for the poor resulting from private sector and social enterprise engagement in the sanitation sector. Most evidence notes that the poor are not prioritised as customers for small-scale private operators.

Entrepreneurs gravitate to customers who can pay and servicing the poor is challenging, and usually not a priority for businesses: The strong push towards sanitation marketing as a way to increase sanitation coverage was evident in the number of papers with this as a focus (46 out of 50). However, there was limited concrete evidence that sanitation marketing is improving access to sanitation for poor households – more time is needed for the outcomes to become evident (as noted by Wicken 2012). Cole (2013) notes that reaching poor households through sanitation marketing is a challenge. Sanitation marketing literature (which was generally of a medium degree of rigour) notes that businesses aim to capture the least poor as customers first, to create a model where poorer households aspire to safer sanitation options (Narracott and Norman 2011). Other literature noted that given the profit driven nature of most businesses, capturing business beyond the “early adopters” (i.e. the first and most financially able to take up sanitation products and services) is more difficult, and instead entrepreneurs prefer to expand to new areas, again capturing those more able

to take up their business offers (Pedi et al. 2012; Baker et al. 2011). Narracott and Norman (2011) believe that over time, social business models with human-centred design will enable scaling up of business leading to lowered unit costs, thus allowing the poorest of the poor access to sanitation. Baker et al. (2011) argues market approaches should not be expected to reach the poor.

Businesses such as truck emptying and masons were found to prefer to serve institutions rather than poor households, given the higher profits and greater chance of being paid when servicing the latter (Bereziat 2009; Desalegn et al. 2012, Tiberghien 2013). Desalegn et al (2012) highlights that masons in Ethiopia serve institutions, with households building their own latrines. This relates to the fact that low income households sometimes have difficulty in making payments (USAID 2009), particularly if they are required as lump sums (Chowdhry and Kone 2012).

There is emerging evidence and examples of poor households being included in private and social enterprise programs, however, discussion focuses on inclusion rather than outcomes: Sijbesma et al. (2010) reports on a sanitation marketing pilot in rural Vietnam, with results showing a high proportion of the pilot population who built toilets were poor. Mai (2010) describes how masons in Vietnam offer reduced daily fees or credit on service provision to the poor. Mukherjee et al. (2012) note that in East Java, a small number of communities involved in a project were able to afford their desired latrine model and were assisted by entrepreneurs with reduced cost options and payment schemes in instalments. Narracott and Norman (2011) describe how low income houses in Ghana were able and willing to pay for sanitation services. Ramani et al. (2012) provide evidence from India on the need to match design and delivery of toilets to the needs of the poor, describing points needed to create and diffuse pro-poor innovations, as opposed to mainstream innovations.

Subsidies are complex and there is no clear evidence of what works: There was some evidence on the issue of subsidies in terms of sanitation products and services reaching the poor. Tremolet and Evans (2010) provide examples from India and Bangladesh where community toilets allow for better access and services to the poor. Mukherjee et al. (2012) describe evidence of the success of community subsidies which enabled poor households access to facilities, while Wicken (2012) and Rosenboom et al. (2011) note that hardware subsidies undermine sanitation marketing businesses and are ineffective at reaching the poor. A growing body of evidence indicated microfinance and credit systems as ‘potential’ options for poor households to benefit from sanitation marketing (see for example, WSP 2011). See Jenkins and Padi (2012) for a review of WASH microfinance consumer lending for sanitation marketing.

Public sector approaches have not been very successful in reaching the poor and there is a need to have realistic expectations about what private sector can achieve: Schaub-Jones (2010, pg. 7) discusses the provision of services by the private sector in comparison to the public sector, and notes that *“In Cambodia a recent study on sanitation financing for the poor found that most public finance for sanitation in Cambodia is not reaching those below the poverty line.”* Output based aid is suggested as a potential mechanism to reach the poor (Schaub-Jones 2010).

What does engagement between enterprise and CSOs consist of?

Most evidence describing how CSOs engage with the private sector was of medium to low rigour.

CSOs play a bottom up role supporting small businesses with a focus on capacity building and enterprise establishment: Schaub-Jones (2010) describes examples of NGOs supporting enterprise development in Vietnam, through training masons and businesses; and in South Asia through

assisting in establishing community run public toilets. An African example shows how CSOs seek to fill the gap where government support is limited in relation to sanitation utilities (Schaub-Jones 2012). There is also evidence of NGOs playing a role in establishing community run public toilets, and in doing so entering a space that sits between profit-making and non-profit activities (Schaub-Jones 2010). It remains to be seen what the longer term outcomes of such ventures are in terms of NGOs' roles as active agents in the area of sanitation enterprise.

The emerging trend for CSOs' engagement with businesses and government is through Sanitation

Marketing approaches: Examples in the literature highlighted how CSOs engage with businesses and government through Sanitation Marketing approaches. Pedi and Jenkins (2013b) describe two implementation models for sanitation marketing. Evidence from India reports of the common approach to diffuse toilets throughout the population as a partnership between non-profit organisations (NPOs), government and aid organisations (Ramani et al. 2012 p.676), noting that *"A handful of social entrepreneurs from such NPOs are in particular highly acclaimed for their role in promoting and diffusing toilets among the poor"*. CSOs are therefore closely engaged in the creation and promotion of demand for sanitation products and services. As such, their role could be seen as subsidising marketing costs for the industry to address the barriers mentioned earlier around low demand (Sijbesma et al. 2010).

Related to the emergence of CSOs in sanitation marketing and demand creation is that of monitoring and evaluating (MandE) small scale enterprise providers, and how they respond to changes in demand. Given that sanitation marketing is acknowledged to be a relatively slow process, there was limited literature on MandE sanitation marketing, however there is some emerging evidence and guidance provided in recently published literature (see Pedi and Jenkins 2012).

CSOs play a role across, and as a link between, businesses: Evidence from Uganda noted how NGOs supported the establishment of associations on private operators, as reported by Schaub-Jones (2010). It was recognised that associations have potential benefits, as was the case in Uganda, however their role in the sanitation sector is relatively unknown.

While CSOs engage in various aspects of the sanitation private sector, little attention is paid to the sustainability of their role: The first example on this issue relates to previous points about the importance of enterprises taking on risk if they are to be successful. In this case those that had lower levels of NGO support were less dependent. A case study described by Pedi et al. (2012) is one of few examples that deal explicitly with the issue of NGO-dependence, noting the importance of enterprises taking on leadership of their own business activities. Another paper cited an example from Cambodia which noted the explicit approach to minimise the visibility of the NGO and promote ownership by the government (Pedi and Jenkins 2013a). Less strong evidence, phrased as a recommendation, noted that too much CSO support is bad for business: *“For a business to be truly sustainable they need to self- motivated and independent of NGO support...”* (Baker et al. 2011, p.4).

There was evidence that highlighted that CSOs are often inexperienced in engaging in the private sector. Strength of evidence on this issue was mixed. An example from Ethiopia noted that *“Most NGOs [in the case study area] do not have an experience of working with business operators”* (Desalegn et al. 2012, p.34). Many NGOs were found to be looking to support sanitation businesses despite having limited (or no) experience working with small and medium enterprises (Schaub-Jones 2012). NGOs, and the small community groups they support, lack business experience and are therefore less likely to make investments to expand the business (Schaub-Jones 2012).

Enterprise contributions to water services

What are the factors affecting success of enterprise engagement?

Low demand for spare parts, products and services affects business viability in this supply chain:

The literature provided strong evidence that demand in the spare parts market was critical to profitability and therefore business viability. Larroquette (2012) noted that in Timor-Leste, low demand for spare parts limited profitability, and an element of success was seen in building and developing supply chains based on existing supply chains. This issue was also noted by Harvey (2011), who added that in rural areas, a constraint to sustainable businesses is the delivery of spare parts at affordable prices. Additional evidence was provided by Kleemeier (2010) (citing Oyo 2006) who noted that high population density (and thus demand) led to successful supply chains and conversely in Africa, low population density led to unviable supply chains. The latter point is linked to isolation and distance from main town centres, which was a challenge for business viability and noted in several sources (e.g. Harvey 2011; Larroquette 2012; Mahe and Wild 2010).

The existence of a market to create the demand for water products and services is critical for business viability. As touched upon above by WaterSHED and USAID (2009), limitations in size of the market and demand for products can constrain business viability. An additional point raised by several authors relating to demand is access to the product – in some cases referring to water. In Paraguay, the ongoing feasibility of small-scale water providers (*'aguateros'*) was dependent on the availability and accessibility of groundwater of a certain quality (Keatman 2012). Furthermore, the *aguateros* were found to respond to residual demand for which the public provider lacked capacity to service (Keatman 2012).

Business skills and planning, market viability and financial feasibility are lacking, which constrains ongoing sustainability of businesses: Numerous studies note that individual entrepreneurs lack strategic business planning and knowledge of the financial market in which they are operating (see for example Foster, 2012; Kleemeier, 2010; Gia and Fugelsnes, 2010 and Kleemeier and Narkevic, 2010). Business acumen is important, as noted by Lazarte et al. (2011) as is the capacity to understand contractual agreements (Lockwood and Smits 2011).

Financial challenges can act to constrain business viability: The need for high capital investment affects both businesses and households – an issue confirmed by rigorous evidence. High connection fees can act to “lock in” customers (Ahlers et al. 2013a; Ahlers et al. 2013b) or limit customers’ ability to afford connections (Kleemeier 2010). World Bank and IFC (2013) note that in Bangladesh, few water supply networks are financially viable given the few connections to the networks, high investment costs and imbalanced tariff structure. Poorer customers and small businesses also face challenges accessing credit and micro-finance which affects business success (Larroquette 2012; Mahe and Wild 2010). SNV (2010) noted the range of financing options available to individual entrepreneurs and institutions interested in investing in rural water supply and sanitation in Vietnam. Other authors suggest financing and subsidies are often needed and propose an Output-Based Aid approach to overcome high start-up costs (Kleemeier and Narkevic 2010). There was also extensive evidence across the levels of rigour that grouping of water schemes into profitable clusters could support less commercially viable operations in some countries (Kleemeier 2010; WSP 2012; Foster 2012; Hoang et al. 2010; Hystra 2011). This issue related to population density and economies of scale, with evidence suggesting that it makes economic sense to invest in collective treatment and distribution infrastructure in areas of high population density (Hystra 2011, p.47).

Policy, governance and institutional frameworks can act to support or constrain businesses: Strong evidence showed that policy can provide incentives, investment and legal participation in the formal market (Ahlers et al. 2013; Larroquette 2012; Lockwood and Smits 2011; Sy et al. 2011). Policy support was also found to be favourable for independent operators in Bolivia (Keatman 2012). Literature provided evidence showing that policy can also neglect informal operators, increase expenses (including taxes and licence fees - Ahlers et al. 2013) and provide a hostile business environment (Larroquette 2012). World Bank and IFC (2013) note that incomplete legal frameworks for water supply may constrain some kinds of private investment. An absence of a clear institutional framework also has mixed outcomes, for both the business and the environment (e.g. allowing for over-exploitation of water resources – see Seureca and Hydroconseil 2005, cited in Matsinhe et al. 2008). Literature noted that as formalisation and professionalisation of enterprise increases, so too does the degree of regulation for both the service *provided* and the service *provider*, and it is noted that *“There is no level in the institutional framework where regulatory functions are best placed”* (Lockwood and Smits 2011, p.99).

Decentralisation of responsibility for service delivery to local levels of government can provide an environment in which entrepreneurs can flourish: As authority and responsibility for the delivery of water supply services is decentralised from central to local governments in many developing countries, entrepreneurs and informal providers are filling a gap in providing services local authorities have limited capacity in delivering. Mahe and Wild (2010, p.30) note that the importance of the private sector has grown with the advent of decentralisation including in the provision of water supply. When coupled with increasing formalisation of the market, the decentralisation of responsibility for services, can be seen as providing an environment conducive to private service delivery, as noted by Matsinhe et al. (2008, p.847): *“Legalization of the informal market and*

decentralization of certain regulatory activities to the neighbourhood level are important steps in the efforts to improve service delivery to the urban poor.”

Local entrepreneurs have “natural legitimacy” in their local communities which is a success factor

for business viability: A range of sources reported that local entrepreneurs enjoy the trust of their communities and local authorities, and have a greater understanding of their operating environment including usage and capacity (Mahe and Wild 2010; Gia and Fugelsnes 2010). There was some evidence suggesting that entrepreneurs and small-scale providers embodied characteristics of flexibility, innovation and progressive business models. Annis and Razafinjato (2011) describe multiple service options (e.g. private, social or public connections) and pricing structures catering for the needs of the heterogeneous and ‘*economically diverse communities*’, while Hystra (2011) note that base-of-the-pyramid providers develop “*innovative solutions specifically adapted to these communities*”.

Additional evidence relating to the success (or otherwise) of water supply businesses include:

Limited alternate sources of water supply increases business viability (Mahe and Wild 2010) and increases customers’ willingness to pay (Foster 2012); the apparent growing role for informal providers as urbanisation continues and rural centres grow (Lockwood and Smits 2011); unreliable power supplies in some countries limits business viability (World Bank and IFC 2013b); technical capacity of small-scale providers in rural centres is limited (World Bank and IFC 2013b; Lazarte et al. 2011) and where strong political support exists, small-scale water business can flourish (Klemm et al. 2012; Valfrey-Visser et al. 2006; Annis and Razafinjato 2011).

What are the outcomes for the poor as a result of enterprise engagement or involvement?

There was relatively limited evidence in the literature surrounding the outcomes for the poor resulting from private sector engagement in the water supply sector.

Some entrepreneurs and small-scale informal providers have demonstrated flexible pricing

structures allowing for the poor to access services at affordable prices: One study noted that the highest prices were found in areas where people could afford the fees – a concept at odds with the perception that private operators tend to take advantage of poorer urban households (Sima et al. 2013). As noted in the previous section, Annis and Razafinjato (2011) also note diverse pricing and service options to cater for the range of needs in economically diverse communities.

Provision of accessible and affordable water services in poor rural areas is challenging for private and social enterprise; outcomes include poor households turning to unsafe water supplies:

Evidence suggests that water tariffs in rural areas tend to be higher due to lower population density. Public-private partnerships (PPPs) and entrepreneurs are challenged with balancing the need to set tariffs at prices customers can afford, whilst maintaining business viability (Lazarte et al. 2011).

Evidence suggests that outcomes for poor households who cannot afford connections or the water tariffs include drawing on unsafe alternative water supplies (Lazarte et al. 2011). World Bank and IFC (2013b) note that water supply access for the poor is context dependent, with enterprises in some countries (e.g. Cambodia) displaying a pro-poor approach while others (e.g. Bangladesh and Benin) considering the poor to be without equal access to services of businesses.

Effective service provision to poor communities can result from appropriately structured

management models: Results of a WSUP study from Kenya notes that effective service provision to

poor communities can result from appropriately structured management models (Norman and Parker 2011). Delegated management models, where small-scale operators are contracted by municipal water utilities, has shown to provide an approach to allow access to water (and sanitation) services for the urban poor (Norman and Parker 2011).

Additional evidence (of a less robust nature) surrounding outcomes of enterprise engagement for the poor include: Poor households and individual entrepreneurs have limited access to credit and microfinance and are therefore sometimes unable to afford connection fees and business start-up costs (SNV 2010; Larroquette 2012); poor customers effectively being “locked in” as a result of high connection fees leaves poorer households at the mercy of businesses hiking up prices, being unreliable in service provision and maintenance and conducting unethical practice (Ahlers et al. 2013a; Ahlers et al. 2013b).

What does engagement between enterprise and CSOs consist of?

CSOs predominantly work with private and social enterprise in the water sector in providing bottom-up capacity building through technical and financial support: Kleemeier (2010) provides several examples of CSOs supporting enterprise, one of which is East Meets West Foundation (EMWF) in central Vietnam, where private operators are introduced into EMWF’s schemes with the aim to improve financial and technical sustainability, and provided private operators with capital subsidies based on the number of water supply connections made (East Meets West Foundation 2012). Mahe and Wild (2010) describe a PPP approach which was supported by a French NGO, GRET, who provided technical and financial assistance (credit and subsidies) for the water schemes to operate. Singh (2012) described how WaterAid India helped establish “People Panchayat

Partnership” which resulted in installation of hand-pumps, training of mechanics and masons and provision of tools and vehicles.

CSOs have also provided institutional support on contract preparation and supporting politicians and civil servants with engaging with private and social enterprise: There is also evidence of CSOs supporting the supply side, more specifically in contract preparation and enforcement (Mahe and Wild 2010) as well as addressing the issue of political will by engaging closely with politicians and civil servants to ensure their ongoing support and sustainability of the enterprise program. The latter example occurred in the case with the “WASMO” program in India which was supported by Dutch development assistance (Lockwood and Smits 2011).

CSOs sometimes act as agents in the supply chain in the provision of products and services: Several examples from Africa provide strong evidence of CSOs working as actors in the supply chain – for example in remote rural areas of Guinea, a local NGO called Tinkisso produced and distributed chlorine products (Hystra 2011). In Malawi, NGOs are involved in the provision of maintenance and spare parts through networks of local entrepreneurs, while in Kenya, the distribution of chlorine products is organised by NGOs at larger scales using both commercial and non-profit channels of distribution (Hystra 2011). An additional example comes from India where Naandi, a large NGO and also a “social sector organisation,” have partnered with private manufacturers and act as managers of the operations (Kleemeier 2010).

CSOs assist in the ‘formalisation’ of CBOs working in the water supply sector: As CBOs become increasingly formalised in their role of water service provision, there is evidence of NGOs and CSOs assisting in start-up financing and construction, as reported by Sy et al. (2011). Lockwood and Smits

(2011) also raise the issue of CBOs becoming more formalised, noting that with professionalisation comes various other opportunities for private sector involvement.

CSOs work to hold both private sector and governments to account in the delivery of services:

Some literature notes that the role of CSOs includes advocating for the rights of local communities, and this involves holding private operators, as well as governments, to account (Klemm et al. 2012).

Whilst not covered in detail in the literature, CSOs also conduct studies on market size and preferences and feed this back to enterprises, playing a 'market intelligence' function (Pedi, 2013, pers. comm.).

Conclusion

This review of literature has revealed that the evidence on small-scale enterprise in WASH provision spans across a range of document and study types, with the majority of rigorous studies (which comprise a fraction of total studies) being conducted in Africa. The majority of literature were international organisation reports, followed by independent research reports and CSO reports, with formal academic literature comprising a much smaller proportion. The rigour of the studies was variable, and this paper attempts to distinguish between strong and weaker evidence.

The growing interest in sanitation marketing as an approach to sustainably provide sanitation services was evident in the papers in the sanitation subsector. However, literature from the water subsector offered a longer history of analysis when compared to sanitation. The types of businesses offering WASH products and services is highly diverse, with small-scale enterprise maintaining a flexible and dynamic approach to meet the changing needs of customers in ever-evolving contexts.

Evidence from the literature revealed similar factors affecting the success of enterprise across the water and sanitation sub-sectors. The first issue spanning across both water and sanitation that constrained business viability was limitations in demand (be it of spare parts, products or services). Evidence revealed that in rural areas, businesses suffered due to low population density. The second issue present across water and sanitation literature was the lack of business and technical skills amongst small-scale operators, and their limited ability to understand market viability. Financial challenges (e.g. access to credit, inability of poor households to pay) acted to constrain business viability, with polarised views pertaining to the use of subsidies. Policy, governance and institutional frameworks could either support or constrain businesses depending on the context, and political will and advocacy was found to be an enabler to the success of sanitation businesses in particular. Increasing regulation of informal operations had positive effects on hampering the illegal activities of operators, with evidence provided from the sanitation sector.

Some evidence was found on the outcomes for the poor resulting from enterprise engagement, however across both the water and sanitation literature, serving the poor was not highlighted as a specific priority for businesses. In the sanitation literature especially, it was found that businesses tended to prefer servicing non-poor customers to ensure sustainable collection of payments and viable earning of profits. There was emerging evidence of small-scale providers in the water sector offering flexible pricing structures to enable poor households' entry into the market; however this remains a challenge in most contexts. A notable mention from the sanitation literature provided examples of how to best approach the "bottom of the pyramid" customers by targeted design of sanitation products, and continued investment beyond the construction phase.

Evidence describing engagement between enterprise and CSOs in both the water and sanitation literature was limited. Most engagement was found to consist of CSOs offering bottom-up and capacity building support to businesses or informal operators (e.g. formalisation of CBOs), however

there were some examples in the literature of institutional support to government on contract preparation in the water sector. Sanitation Marketing provided an entry point for many CSOs, however it was noted they sometimes lack the experience and business skills themselves to offer value to enterprises. There was also evidence of CSOs playing an active role in the supply chain in the provision of water related products and services.

This paper therefore clarifies several areas for ongoing research and practice change. First, that matching and bringing together demand and supply is much more complex than might meet the eye, and requires greater attention from practitioners and analysts alike. Second, that the skill-set required needs further development within main WASH sector actors, and hence drawing on the skills and expertise of other sectors, businesses and academic expertise is likely to be important going forward. In addition, developing an enabling environment for businesses to grow may require more proactive support than has been provided to date, in particular, ensuring socially inclusive approaches from which the poor might feasibly benefit. Lastly, a recognition that the role of CSOs in supporting enterprise development is a new and emerging one likely to evolve over the coming years to become more strategic and targeted to make best use of their skills and leverage as civil society actors.

Acknowledgements

This research has been funded by the Department of Foreign Affairs and Trade through the Australian Development Awards Scheme under an award titled “Civil society support for water and sanitation services for the poor (Indonesia, Timor Leste and Vietnam)”. The authors thanks Dr Kim Spurway and Professor Anthony Zwi from the University of New South Wales for their generous support in the early phase of this systematic review. Authors also thank the numerous individuals who also offered support in providing the research team with relevant literature on the topic. Danielle Pedi is also thanks for her useful comments and feedback on a draft of the paper.

References

- Ahlers, R., Perez Güida, V., et al., 2013. Unleashing Entrepreneurs or Controlling Unruly Providers ? The Formalisation of Small-scale Water Providers in Greater Maputo Mozambique. *Journal of Development Studies*, 49(4), pp.470–482.
- Ahlers, R., Schwartz, K. and Perez Guida, V., 2013. The myth of “healthy” competition in the water sector: The case of small scale water providers. *Habitat International*, 38, pp.175–182. Available at: <http://linkinghub.elsevier.com/retrieve/pii/S0197397512000392> [Accessed August 1, 2013].
- Annis, J. and Razafinjato, G., 2011. Public-Private Partnerships in Madagascar: a promising approach to increase sustainability of piped water supply systems in rural towns. In *Rural Water Supply in the 21st Century: Myths of the Past, Visions for the Future*. Uganda: 6th Rural Water Supply Network Forum, Uganda, pp. 1–13.
- Baker, T. et al., 2011. *Sanitation Marketing Pilot Project : End of Project Report*, iDE, WSP and USAID.
- Bereziat, E., 2009. *The market for mechanical pit-emptying in Dakar and the realities of engaging entrepreneurs*, London, UK.
- Chowdhry, S. and Kone, D., 2012. *Business Analysis of Fecal Sludge Management: Emptying and Transportation Services in Africa and Asia*, The Bill and Melinda Gates Foundation.
- Cole, B., 2013. Market-based approaches - Sanitation marketing. , pp.1–9.
- Desalegn, P. et al., 2012. *Sanitation Supply Chain / Value Chain Assessment for Amhara Region, Ethiopia*, SNV Ethiopia Team, prepared for WSP-WB.
- DFID, 2011. Feature: Systematic Reviews in International Development: An Initiative to Strengthen Evidence- Informed Policy Making’. Available at: <http://www.dfid.gov.uk/r4d/SystematicReviewFeature.asp> [Accessed July 12, 2013].
- DFID, 2013. *Systematic reviews in international development*, London, UK. Available at: <https://www.gov.uk/government/publications/systematic-reviews-in-international-development/systematic-reviews-in-international-development>.
- East Meets West Foundation, 2012. *GPOBA Clean Water in Vietnam : Completion Report (2007-12)*, East Meets West Foundation.
- Foster, T., 2012. *Private Sector Provision of Rural Water Services: A Desk Study for Water For People*, Water for People (WFP).
- Gia, L., Fugelsnes, T. and Hawkins, P., 2010. *Sustainable Management of Small Water Supply Systems in Africa : Practitioners’ Workshop Report*, Water and Sanitation Program (WSP).
- Gia, L.H. and Fugelsnes, T., 2010. *Public-Private Partnerships For Small Piped Water Schemes : A review of progress in seven African countries*, Water and Sanitation Program (WSP) / The World Bank, Nairobi, Kenya.

- Giltner, S. et al., 2012. *Development of urban septage management models in Indonesia*, Water and Sanitation Program World Bank.
- Hagen-Zanker, J. et al., 2012. *Making systematic reviews work for international development*, Overseas Development Institute (ODI), London, UK.
- Hagen-Zanker, J. and Mallett, R., 2013. *How to do a rigorous, evidence- focused literature review in international development: A Guidance Note*, Overseas Development Institute (ODI), London, UK.
- Harvey, P., 2011. *Sustainable Supply Chains for Rural Water Services : Linking local procurement of handpumps and spare parts supply*, Rural Water Supply Network (RWSN), St. Gallen, Switzerland.
- Hystra, 2011. *Access to safe water for the base of the pyramid: Lessons learned from 15 case studies*, Hystra - Hybrid Strategies Consulting.
- Ikedo, J., 2012. *APPSANI Member Survey and Focus Groups: Identifying Challenges to Growth and Defining Future APPSANI Services*, Harvard Kennedy School of Government.
- Jenkins, M. and Pedi, D., 2013. *Equity in Sanitation Marketing: How can we support the market to reach the poorest? Guidance Note 8*, UNICEF.
- Keatman, T., 2012. *The silent partner: The role of the environment in mulit-stakeholder partnerships for urban and peri-urban water and sanitation supply*, BPD Water and Sanitation.
- Kleemeier, E. and Narkevic, J., 2010. *Private Operator Models for Community Water Supply: A global review of private operator experiences in rural areas*, Water and Sanitation Program (WSP).
- Kleemeier, E.L., 2010. *Private Operators and Rural Water Supplies: A Desk review of Experience*, Water Partnership Program, World Bank.
- Klemm, E. et al., 2012. *Respect , Protect and Fulfil- The Right to Water and its impact on water service delivery arrangements*, BPD, London, UK.
- Koestler, L., 2009. Private sector involvement in rural water supply: Case studies from Uganda. In *Water, sanitation and hygiene - Sustainable development and multi-sectoral approaches*. Addis Ababa, Ethiopia,: 34th WEDC International Conference, Addis Ababa, Ethiopia, 2009, pp. 1–4.
- Kome, A., 2011. *Regional Synthesis Report Asia: Landscape Analysis and Business Model Assessment in Fecal Sludge Management*, Bill and Melinda gates foundation / SNV.
- Larroquette, L., 2012. *Sparepart’s management and marketing for gravity fed water systems in the district of Liquica, Timor Leste for WaterAid Timor Leste. WATR7500 Final Project , Master of Integrated Water Management*. The University of Queensland, School of chemical Engineering.
- Lazarte, E., Boulenger, P. and Jain, N., 2011. Promoting Public-Private Partnerships (PPPs) in Rwanda’s Rural Water Supply: Lessons Learned. In *Rural Water Supply in the 21st Century: Myths of the Past, Visions for the Future*. 6th Rural Water Supply Network Forum, Uganda: 6th Rural Water Supply Network Forum, Uganda, pp. 1–4.

- Lockwood, H. and Smits, S., 2011. *Supporting Rural Water Supply : Moving towards a Service Delivery Approach*, Warwickshire, UK: Practical Action Publishing Ltd.
- Mahe, J.P. and Wild, F., 2010. *Building water utilities with local private entrepreneurs: The example of the MIREP program in Cambodia*, Research and Technical Exchanges Group (GRET).
- Mai, H.T., 2010. *Report on Sanitation Hardware Value Chain Analysis in Dien Bien, Lai Chau and Lao Cai*, SNV.
- Matsinhe, N.P. et al., 2008. Regulation of formal and informal water service providers in peri-urban areas of Maputo, Mozambique. *Physics and Chemistry of the Earth*, 33(8-13), pp.841–849. Available at: <http://linkinghub.elsevier.com/retrieve/pii/S1474706508001630> [Accessed August 1, 2013].
- Mukherjee, N. et al., 2012. *Achieving and Sustaining Open Defecation Free Communities : Learning from East Java*, Water and Sanitation Program (WSP) / The World Bank.
- Narracott, A. and Norman, G., 2011. *Clean Team, a human-centred approach to sanitation: initial trails in Ghana*, Water and Sanitation for the Urban Poor (WSUP).
- Norman, G. and Parker, S., 2011. *Business models for delegated management of local water services: experience from Naivasha (Kenya)*, Water and Sanitation for the Urban Poor (WSUP).
- Noya, A. et al., 2013. *Policy Brief on Social Entrepreneurship : Entrepreneurial Activities in Europe*,
- Oyo, A., 2006. *Spare Part Supplies for Handpumps in Africa: Success Factors for Sustainability*, Nairobi: Water and Sanitation Program.
- Pedi, D., 2012. *Sanitation Supply Chain Analysis Pemagetsel Dzongkhag : PHED-SNV Rural Sanitation and Hygiene Programme*, SNV, Thimphu, Bhutan.
- Pedi, D. et al., 2011. The “hands-off” sanitation marketing model: emerging lessons from rural Cambodia. In *The future of water, sanitation and hygiene: Innovation, adaptation and engagement in a changing world*. 35th WEDC International Conference, Loughborough, UK: 35th WEDC International Conference, Loughborough, UK, pp. 1–4.
- Pedi, D. and Jenkins, M., 2013a. *Enabling Environment: What roles and functions are needed in the new sanitation market? UNICEF Guidance Note 6*, UNICEF.
- Pedi, D. and Jenkins, M., 2013b. *Monitoring and Evaluation How do we measure sanitation marketing progress? Guidance Note 9*, UNICEF.
- Pedi, D., Kov, P. and Smets, S., 2012. *Sanitation Marketing Lessons from Cambodia : A Market-Based Approach to Delivering Sanitation*, Water and Sanitation Program (WSP) / The World Bank.
- Pedi, D. and Rios, M., 2011. *Making the Most of Marketing Sanitation: Key Recommendations to Plan Pakistan*, Plan Pakistan.
- Peredo, A.M. and McLean, M., 2006. Social entrepreneurship: A critical review of the concept. *Journal of World Business*, 41, pp.56–65. Available at:

- <http://linkinghub.elsevier.com/retrieve/pii/S1090951605000751> [Accessed September 19, 2013].
- Perez, E. et al., 2012. *Scaling Up Rural Sanitation : What Does It Take to Scale Up Rural Sanitation ?*, Water and Sanitation Program / The World Bank.
- Pouv, S. et al., 2012. Explosive Sanitation Coverage: An Analysis of Contributing Factors. In *WaterSHED / USAID*, pp. 1–1.
- Ramani, S. V., SadreGhazi, S. and Duysters, G., 2012. On the diffusion of toilets as bottom of the pyramid innovation: Lessons from sanitation entrepreneurs. *Technological Forecasting and Social Change*, 79(4), pp.676–687. Available at: <http://linkinghub.elsevier.com/retrieve/pii/S0040162511001314> [Accessed May 30, 2013].
- Rosenboom, J.W. et al., 2011. Sanitation marketing in Cambodia. *Waterlines*, 30(1), pp.21–40. Available at: <http://developmentbookshelf.com/openurl.asp?genre=article&id=doi:10.3362/1756-3488.2011.003> [Accessed May 6, 2013].
- Rosensweig, B.F., Perez, E. and Robinson, A., 2012. *Scaling Up Rural Sanitation : Policy and Sector Reform to Accelerate Access to Improved Rural Sanitation*, Water and Sanitation Program (WSP) / The World Bank.
- Salter, D., 2008. *Identifying Constraints to Increase Sanitation Coverage : Sanitation Demand and Supply in Cambodia*, Water and Sanitation Program, The World Bank.
- Schaub-Jones, D., 2010. Sanitation - just another business? The crucial role of sanitation entrepreneurship and the need for outside engagement. *Enterprise Development and Microfinance*, 21(3), pp.185–204. Available at: <http://developmentbookshelf.com/openurl.asp?genre=article&id=doi:10.3362/1755-1986.2010.017> [Accessed May 24, 2013].
- Schaub-Jones, D., 2012. *Sanitation as a business : Trends shaping the market for urban sanitation - a discussion paper*, BPD / Stockholm Environment Institute (SEI).
- Sijbesma, C., Truong, T.X. and Devine, J., 2010. *Case Study on Sustainability of Rural Sanitation Marketing in Vietnam*, Water and Sanitation Program (WSP) / The World Bank; IRC.
- Sima, L.C. et al., 2013. Water flows, energy demand, and market analysis of the informal water sector in Kisumu, Kenya. *Ecological Economics*, 87, pp.137–144. Available at: <http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=3610569&tool=pmcentrez&rendertype=abstract> [Accessed May 27, 2013].
- Singh, R.K., 2012. *People-Panchayat Partnership (PPP) Model on Water and Sanitation Services : An Assessment of Samundayik Sahbhagita Kendras (SSKs) Mahoba, Uttar Pradesh*, Alliance for Holistic Development of Communities (AHSDC).
- SNV, 2010. *Study of rural water supply service delivery models in Vietnam*, SNV, Vietnam.
- Sy, J. et al., 2011. *Multi-Village Pooling Project in Indonesia: Handbook for Community-Based Water Supply Organizations*, Water and Sanitation Program (WSP) / Ministry of Public Works.

- Sy, J., 2011. *The Hard Way to the High Road: Transition of Community-based Water Groups to Professional Service Providers in Indonesia*, Water and Sanitation Program (WSP) / The World Bank.
- Tremolet, S. and Evans, B., 2010. *Output-Based Aid and Sustainable Sanitation*, Water and Sanitation Program / The World Bank.
- USAID, 2009. *In-depth Supply Assessment Report for the Sanitation Marketing Pilot – Tororo District Uganda*, Available at: [http://share.pdfonline.com/b50441ad794b4b34b62445f8198209f6/SanMark In Depth Supply Assessment Report.htm](http://share.pdfonline.com/b50441ad794b4b34b62445f8198209f6/SanMark%20In%20Depth%20Supply%20Assessment%20Report.htm).
- Valfrey-Visser, B. et al., 2006. *Access through innovation : Expanding water service delivery through independent network providers Considerations for practitioners and policymakers* D. Schraub-Jones and T. Keatman, eds., London, UK: BPD Water and Sanitation.
- Valfrey-Visser, B. and Schaub-Jones, D., 2008. *Engaging Sanitation Entrepreneurs: Supporting private entrepreneurs to deliver public goods*, London, UK.
- Wicken, J., 2012. *Effectiveness of a Sanitation Marketing approach in rural Papua New Guinea: The ATProjects Round Loo programme*. Loughborough University.
- World Bank and IFC, 2013a. *Tapping the market: Opportunities for Domestic Investments in Sanitation for the Poor*, Washington DC, USA.
- World Bank and IFC, 2013b. *Tapping the Market: Opportunities for Domestic Investments in Water for the Poor*, Washington DC, USA.
- WSP, 2011. *Evaluating the Political Economy for Pro-Poor Sanitation Investments*, Water and Sanitation Program (WSP) / The World Bank.
- WSP, 2012. *Water in Africa: PPPs in Rural and Small Towns : Strong Public Sector Leadership Key to Sustainable PPPs*, Water and Sanitation Program (WSP) / The World Bank.