



MOTIVATIONS, BARRIERS AND OPPORTUNITIES FOR WATER AND SANITATION ENTERPRISES IN TIMOR-LESTE

JULY 2015

ENTERPRISE IN WASH

'Enterprise in WASH' is a joint research project led by the Institute for Sustainable Futures (ISF) at the University of Technology Sydney, which investigates the role of private and social enterprises in the delivery of water, sanitation and hygiene (WASH) services for the poor. For other Enterprise in WASH publications, see www.enterpriseinwash.info

ABOUT THE AUTHORS

The Institute for Sustainable Futures (ISF) was established by the University of Technology Sydney to work with industry, government and the community to develop sustainable futures through research and consultancy. Our mission is to create change toward sustainable futures that protect and enhance the environment, human well-being and social equity.

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EXECUTIVE SUMMARY

This study is set in the context of current initiatives by the Government of Timor-Leste (GoTL) and development agencies to improve and extend water and sanitation in Timor-Leste. The purpose of this study is to address a research gap concerning existing actors in the private sector in Timor-Leste and their motivation, interest and capacity to play stronger roles in supporting water and sanitation service delivery.

Aim and methods

The objectives of this research were:

- To explore the motivators and interests of relevant enterprises
- To document the entrepreneurial and pro-social traits exhibited by enterprises
- To understand key enablers and challenges faced by enterprises
- To assess the capacity of enterprises to play additional roles in the future that contribute to improved access to water and sanitation services.

This research drew on theories on entrepreneurship and social entrepreneurship, including key characteristics of entrepreneurs described in the literature. The study also considered literature on traditional ‘barriers to entry’ for enterprises. Our consideration of potential future roles for enterprises was informed by a previous study examining the dynamics of private sector roles in Timor-Leste and other studies outlining gaps in service provision.

This research employed dominantly qualitative data. These data were collected from primary sources, through semi-structured interviews with national and district water contractors, retailers of sanitation-related products in district capitals and a small number of NGOs. Empirical research was undertaken in March 2015 by researchers from University of Technology, Sydney (UTS) and National University of Timor Lorosa’e (UNTL). One limitation of the study was its scope, which was confined to collecting empirical evidence of enterprise perspectives only, rather than including those of government and community, which instead were drawn from secondary data in previous studies.

The sample of 15 construction businesses included eight district based companies and seven national Dili-based companies. The sample of traders, retailers and producers of sanitation products included 12 district based retailers of sanitation products and five local NGOs who were producing toilet pans or were involved in sanitation marketing initiatives.

Findings on water contractors

Profile of enterprise owners: The water contractor business owners were dominantly male (11 of 14 owners) with the most common age bracket being 35-45 years (and other owners older or younger than this). Almost half were university educated (6 owners) across economics, management, electrical engineering, poly-technique and industrial engineering, a few graduated from technical schools (2 owners) and remainder had completed high school (6 owners). They had diverse previous work experience including private sector, self-employed, NGO, bank, agriculture and public sector. Only one owner had no previous work experience. The majority of owners spent 40-70 hours per week, however some owners only worked full-time when they had active projects (3 owners).

Profile of enterprises: The companies interviewed were mostly construction companies (11 of the 14) with varying degrees of specialised expertise in relation to water systems. The three exceptions were a company specialised in well drilling, and two companies that retail water system parts and pumps, and offer installation services for water storage tanks and/or electric pumps. Amongst companies interviewed, eight were district-based companies, and six were national. District-based companies tended to be started more recently (5 companies were under 5 years old) and national-based companies were mostly 12 to 18 years old. In general all the companies were relatively small, with no company employing more than 10 people, and most staff only working on a 'project' basis. The selection of staff was generally on the basis of familiarity and connections, either within families or within close social networks and more formal recruitment processes appeared to be little used.

The starting investment for district-based companies was USD 2,500 to 20,000 and for national companies mostly from USD 5,000 to USD 110,000, all dominantly sourced from personal savings. The overall growth rate of company revenue and profit appeared slow, and matches the small sizes noted above in terms of employees and the variable levels of success in winning tenders. Revenue was primarily from government contracts or aid-related contracts, with a much smaller proportion of work for private companies or individuals. The large majority of companies (93%) had a very optimistic outlook on their future, with only one company expressing any uncertainty.

Entrepreneurial traits: Company owners demonstrated traits of proactiveness, need for achievement and innovativeness but a much lower propensity for risk-taking. Owners were proactive in applying for tenders, and 71% felt that it was easy or very easy to make a profit in their business if they took initiative. Need for achievement was demonstrated in various ways, through owner's confidence and commitment at start-up and in the future concerning achieving business success. Risk taking was believed to be important in theory, but in practice many owners demonstrated fear of taking risks rather than an aptitude to do so.

Prosocial traits: Owners demonstrated diverse range of motivations and drivers and a prevalence of pro-social motivations. The most common driver was to contribute constructively to development of Timor-Leste. Other motivations included to offer employment (particularly in the districts), to build the professional capacity of their staff, to assist rural communities and to provide a quality service. A sense of social responsibility was strong, and only respondents mentioned profit or personal gain as part of their objectives. Prosocial motivations were evidenced in that companies were willing to undertake support services to communities for free when requested. One respondent focused on sincerity rather than profit: and another mentioned reciprocity associated with doing good for others.

Key enablers: Interviewees identified a range of factors they saw as enabling business success. This ranged from effective business management in terms of managing staff and making good judgements, to professionalism and quality of their work to earn trust and respect, to commitment and responsibility in relation to both clients and communities. An external enabler through support from BESIK was also identified by several respondents.

Key challenges: Key challenges experienced by companies included their interactions with government, strong competition in tenders processes and inability to maintain staff on permanent contracts due to related financial challenges. Government-related challenges included unpredictable customs processes for importing water system components, poor contract management including common and excessive delays in payments, and the need for monetary gifts for local village authorities to facilitate smooth relations. More than half of the companies noted that competition in tender processes was one of their biggest challenges. This was due to two reasons; insufficient skills to win tenders and lack of transparency in selection processes, which respondents linked to political interference in the tender processes. Lastly, human resource

challenges included being limited to employing staff during 'projects' due to insufficient throughput of work as well as severely delayed payments for government contracts and related financial stress.

Opportunities and barriers for enterprises to play expanded service delivery roles: A precursor to enterprises taking on expanded roles to support service delivery, including supporting operations and maintenance (O&M), is an understanding of the strengths and shortcomings of the current model for service provision in Timor-Leste, namely through GMFs, district and subdistrict government. Of the eight district-based companies, four had limited understanding of the current model, and four had a more sophisticated understanding. National companies shared relatively informed perspectives on service delivery. They pointed out several challenges: lack of asset management records and processes; need for consistent support to GMFs to successfully manage a system; unrealistic reliance on volunteerism to provide service delivery; inadequate government support to GMFs or maintenance; and variable quality of hardware used.

Three possible roles were envisaged for the purposes of this research, however there are other models, or variations of these models, that could also be explored. In general, companies demonstrated interest, enthusiasm and willingness to consider opportunities across these scenarios. The key opportunity and the related barriers for each role are documented below.

Providing support to GMFs through a fee-for-service arrangement: This role would see a company offering services to GMFs suited to their needs (which may vary from GMF to GMF). Services could include on-call technical maintenance support, regular monitoring (including preventive maintenance), provision of spare parts, financial management and fee collection, or other such services. Companies reported already playing such roles for communities on a pro bono basis. Challenges identified by respondents included a reticence by communities to request assistance from an outsider and a current perception that 'free' support is available from government and a related unwillingness to pay for support.

Maintenance contracts with government: A contract to support maintenance of water systems for 3-4 years was considered attractive by six of eight district companies and by all national companies. It was seen to follow on from the existing 'warranty defect period' which requires companies to fix any issues arising in a water system for a prescribed period of time after commissioning. This model was also seen to present challenges in devising arrangements that would appropriately share risks across government, community and enterprise. In particular, uncertainty of maintenance requirements and related cost predictions requires a stronger evidence base to work from, and the quality of government contract selection, preparation and management would be require improvements.

Specialised maintenance roles: This type of role, for instance concerning pumps, appeared to be the clearest, more appropriate role for private sector in the short term. Amongst both national and district level there were companies with capacity to play this role, and indeed some form of partnership between national and district-based companies would be one possible model for this role.

In conclusion, there is clear potential for expanded roles for enterprises in the future in Timor-Leste, however no solution will be without barriers or complexities. Experimentation in this area is needed to continue to develop a shared understanding in the sector of viable service models, including a strong focus on the respective roles of government, enterprises and community and their inter-relationships.

Findings on retailers of construction materials and local NGOs

Construction materials retailers

Entrepreneurship and entrepreneurial traits: Retailers demonstrated a strong ‘need for achievement’ and 33% demonstrated some degree of proactiveness. However, these relied predominantly on ad-hoc and rudimentary entrepreneurial approaches to business management and marketing. These included provision of polite and friendly services to customers, price manipulation according to competing retailers, and direct selling and word-of-mouth. Retailers were predominantly focused in responding to demand expressed by customers, rather than generating demand or tapping into potential demand for new products. A strong aversion to bank loans was also evident, which suggests the absence of risk-taking propensity amongst respondents. All interviewees had relied on personal or family savings to invest in the business and none had taken loans from a bank.

Pro-social traits: The presence of a specific pro-social business drive to serve the poor was not evident amongst the majority of retailers (92%), although some (33%) expressed a sense of care for their communities and fairness, which indicates a degree of pro-social awareness.

Key business challenges: Respondents reported different categories of challenges including, access to market, human resources, operations and financial related factors. However findings suggest a high level of ease with the current state of the business and its success. The fact that all respondents said that it was easy to maintain a profit from their retail businesses also supports this supposition.

Of the reported challenges, the most commonly reported were access to market challenges, in particular increased competition. Human resource challenges included difficulty in finding staff with the right skills and the time required to monitor staff performance on a daily basis, and operational challenges included water and electricity cuts and challenges associated to the use of manual stocks control systems. Financial challenges in turn included limited access to capital, high interest rates, and difficulties in meeting the loan criteria.

Potential for future roles in sanitation marketing: There are potential opportunities as well as barriers to retailers of construction materials being effective in sanitation marketing beyond the current role of retail of imported sanitation products. Possible roles for retailers in marketing sanitation include manufacturing of toilet products, retail of locally produced toilet products, installation services, and promotion of toilet products and/or services. As current players in the supply chain of sanitation products, retailers can draw on their business resources and pre-existent networks and systems to reduce costs and access customers. The broad range of products sold by these businesses in addition to construction materials suggests a degree of flexibility in responding to expressed demand for new products, which can be a good starting point for developing agencies approaching retailers for experimentation with sanitation products. However, various barriers to retailers playing roles in marketing and installation were also evident. These related to their lack of awareness of the potential market for sanitation products, hesitancy to consider providing ‘services’ in addition to products, weak pro-social traits and limited business skills and proactiveness.

Local NGOs

Entrepreneurship and entrepreneurial traits: Limited business expertise and business risk taking experience was evident amongst the NGOs interviewed, although some entrepreneurial traits such as proactiveness and need for achievement traits were evident amongst two respondents. Risk-taking traits were not evident amongst local NGOs interviewed. Very little or no risk at all had been carried by these in starting sanitation enterprises, as their INGOs partner had largely supported these investments.

Pro-social traits: A pro-social motivation to improve the health of communities and address the needs of the poor was clear amongst the majority of the NGO leaders (80%) and strongly underpinned their engagement in the provision of sanitation products and services. Contrast was found amongst NGOs concerning their pro-social purpose however. Whilst some NGOs were able to clearly articulate their pro-social vision and mission, and the process used to develop and review these, others, were more vague in articulating this and appeared to be more strongly driven by INGO contracting opportunities rather than a clear and well-defined pro-social purpose.

Key business challenges: Challenges reported by NGOs who had engaged in selling sanitation products as a business activity were all related to access to market. These included low demand for sanitation products and services, and concerns with foreseen market saturation challenges. Factors perceived as contributing to low demand included a legacy of toilet subsidies, which left an expectation of free toilets from communities, and a lack of affordable products of equivalent quality to imported products.

Potential for future roles in sanitation marketing: Like with the retailers of construction materials, there are potential opportunities as well as barriers to local NGOs being effective in sanitation marketing. On the one hand, their high dependence on external support from INGOs to initiate their sanitation businesses and challenges faced so far raise questions about their future viability in the absence of such support. On the other hand, there is considerable complementarity in the outlook, motivations and experience of local NGOs as opposed to retailers. Their local experience in the WASH sector and pre-existing links with rural communities, as well as strong pro-social drive, provides an opportunity for them to extend their existing roles in the WASH sector. These include supporting roles such as provision of information about the needs and preferences of the market, product development and innovation, technical training on toilet production, facilitation of community bulk purchases and traditional lending mechanisms, linking customers to micro-credit institutions, and facilitating partnerships between retailers, masons, and community leaders.

In conclusion, there are potential opportunities as well as barriers to both retailers of construction materials and local NGOs playing being effective roles in sanitation marketing. In comparing the different characteristics of these organisations, it was found that certain traits that pose challenges to one, contrast as opportunities to the other, which raises the possibility of complementary roles, and shared responsibility arrangements between two actors.

1 INTRODUCTION

This document presents research on the current and possible future roles in Timor-Leste of two private sector actors, contractors that construct water systems (water contractors) and retailers of sanitation-related products as well as local NGOs playing roles in developing sanitation products.

1.1 BACKGROUND AND OBJECTIVES

1.1.1 Background

This study is set in the context of current initiatives by the Government of Timor-Leste (GoTL) and development agencies to improve and extend water and sanitation in Timor-Leste. GoTL has a key role to play in shaping the dynamics of the sector, and configuring the respective roles of the public sector, private sector and community (and the overlaps that exist between these) to increase the level of professionalism in service delivery and support optimal service outcomes.

In the water sector, water contractors play an important role in development of rural water services in Timor-Leste. Government contracts to construct new water systems through the National Directorate of Water Supply are limited to registered companies. In addition, in recent years the Australian aid-funded Rural Water Supply and Sanitation Program ('Bee, Saneamentu no Ijiene iha Komunidade –BESIK') contracts for water system construction have also been limited to registered companies, whereas previously, BESIK tenders were open to both companies and non-governmental organisations (NGOs). As a part of operation and maintenance (O&M) trials led by BESIK aimed at improving the sustainability of rural water supplies, and a small number of NGOs have been contracted to provide post-construction support to water management committees (Grupu Manajementu Fasilidade - GMFs) (Whalen and Belo, 2013; Murta and Willetts 2014). This research compliments BESIK's trials, as we focus on construction companies and contractors. This study assesses their capacity (or motivation and interest to develop capacity) concerning skills of organisational, managerial and community engagement needed for these enterprises to play a role to support on-going operation and maintenance and service delivery.

Concerning the sanitation sector, the majority of toilet building materials available in the market are imported and provided by traders and retailers of construction materials. These are located predominantly in Dili (78%), with a smaller percentage (22%) distributed by the Districts¹ (Maliana, Likisá, Baucau) (Empreza Diak 2014). This research sought to engage with this type of businesses and understand their likely interest to become involved in more actively selling and distributing sanitation products, including locally produced toilets, as well as providing toilet installation services. This research also sought to assess their business and managerial capacity to perform these roles.

Locally made sanitation products are also available, although these represent only a small percentage (less than 5%) of the sanitation products in the country (Empreza Diak 2014). Typically, these products are provided by masons, entrepreneurs and small formally registered enterprises supported by international development agencies to that effect. These businesses have emerged from pre-existing local NGOs that provided services to INGOs or donor water and sanitation programs. Therefore, in addition to retailers of imported sanitation products, this research also sought to engage with NGOs producing and/or retailing local sanitation products.

¹ Officially known as Municipio, a Portuguese term

The aim of engaging with these organisations was to understand the drivers, motivations, opportunities and challenges for them to play an effective role in the supply chain of sanitation products.

1.1.2 Research objectives

The purpose of this study is to address a research gap concerning existing actors in the private sector in Timor-Leste and their motivation, interest and capacity to play stronger roles in supporting water and sanitation service delivery.

The objectives of this research were:

- To explore the motivators and interests of relevant enterprises
- To document the entrepreneurial and pro-social traits exhibited by enterprises
- To understand key enablers and challenges faced by enterprises
- To assess the capacity of enterprises to play additional roles in the future that contribute to improved access to water and sanitation services

1.1.3 Research questions

The research questions were as follows, with the first set of research questions pertaining to water contractors, and the second pertaining to retailers of sanitation-related products:

1. What are the motivators, interests and existing business models of companies involved in construction of water systems? How present are entrepreneurial and pro-social traits among such businesses? What key enablers and barriers affect their success? What skills and capacities do they hold or have interest in developing towards expanded roles to support service delivery?
2. What are the motivators, interests and existing business models of construction material retailers in district locations and of NGOs retailing locally produced sanitation products? How present are entrepreneurial and pro-social traits among such organisations? What opportunities and barriers are likely to affect their engagement in sanitation product and service delivery?

1.1.4 Research framework

This research drew on theories on entrepreneurship and social entrepreneurship, including key characteristics of entrepreneurs described in the literature (Ernst 2012; Freytag and Thurik 2007; Cromie 2000; Light 2011; Nyssens and Defournay 2010; Rauch and Frese 2007; Robson 2010; Terjesen et al 2011).

The study also considered literature on traditional ‘barriers to entry’ for enterprises (e.g. access to credit, market uncertainty, skill requirements and policy environment) to categorise barriers faced by enterprises (Kelley et al 2013; Porter 1998; Porter 2008; Reynolds et al 2000; Robson 2010; Sinha 1996).

Consideration of potential future roles for enterprises was informed by a previous study examining the dynamics of private sector roles in Timor-Leste (Murta and Willetts 2014) and other studies outlining gaps in service provision (Whalen and Belo, 2013; Willetts 2012; Empreza Diak 2014). Opportunities for, and constraints on, women’s participation in enterprise development were touched upon but were not central to the study, as were the effect of cultural elements on business success in the Timorese environment.

1.2 METHODOLOGICAL DESIGN

1.2.1 Data and data collection

This research employed dominantly qualitative data. These data were collected from primary sources, through semi-structured interviews with national and district water contractors and retailers of sanitation-related products in district capitals. Empirical research was undertaken in March 2015 by researchers from University of Technology, Sydney (UTS) and National University of Timor Lorosa'e (UNTL).

1.2.2 Sample and sampling method

The sample of 15 construction businesses drew on companies who had provided services through BESIK to build water systems, and included 8 district based companies and 7 national Dili-based companies. Two national NGOs, one of which also owns a construction company, and one which sells water system products, were also included in the sample due to their concurrent involvement in private sector activity. The district based companies included companies from Baucau, Manatuto and Maliana districts. The companies selected for interviews had all performed relatively well in BESIK contracts and hence were considered the most professional, experienced companies in the area of water system construction.

The sample of traders, retailers and producers of sanitation products included 12 retailers of sanitation products at the district level and five local NGOs who were producing toilet pans and/or had partnered with BESIK or WaterAid in sanitation marketing initiatives. These included retailers from Baucau, Manatuto, Maliana, and Liquica districts, and were selected using the snowball sampling method. One of these retailers was a Dili based wholesaler who used government owned warehouses at the district level as distribution centres based on a contractual arrangement with government. The heads of operations of the warehouses located in the districts of Manatuto and Maliana were also interviewed.

1.2.3 Data collection tools and analysis

Data collection instruments were developed in the form of a semi-structured interview guide, including both closed and open questions. Areas covered for both water and sanitation related entities included:

- Demographics related to the owner/manager (e.g. gender, age, education, and previous working experience), and to the enterprise itself (e.g. products and services provided, years of operation, number of staff, initial investment, profit growth and revenue)
- Motivations (e.g. financial, social, status and recognition),
- Entrepreneurship traits (pro-activeness, risk-taking, need for achievement, need for independence, innovativeness)
- Pro-social traits (e.g. empathy, service mentality, self-satisfaction in helping)
- Contextual factors affecting business success:
 - o access to market challenges (e.g. low demand or market saturation, competition, lack of access to information about the needs and preferences of the market, source and cost of materials, unfavourable location, lack of business networks)
 - o human resource challenges (e.g. lack of skills and training opportunities; limited availability of people with the right skills in the market)

- operational challenges (e.g. high fixed expenses, high cost of materials and equipment, inefficient operation and/or management systems)
- finance challenges (e.g. limited access to credit, high interest rates for bank loans, management of instalment payments and cash-flow issues)
- government and regulations challenges (e.g. unclear or lack of government policy or regulation, lack of government support).

For water contractors, additional areas of questioning included:

- Perceived issues about national contractors working in districts (potential for conflict etc.)
- Experience in government contracted roles
- Observations of other businesses taking on 'service contract' type of arrangements (attractive proposition/not, why)
- Understanding of service delivery challenges and constraints to proper operation and maintenance of rural water systems
- Level of interest and capacity to perform roles in operation and maintenance

In turn, for sanitation, additional areas of questioning included:

- Perceptions of demand for sanitation products and experience selling this type of product
- Current methods for out-reach to serve more remote, rural customers
- Interest in becoming more actively involved in selling and distributing sanitation products, including locally produced toilets, and perceptions about attractiveness and challenges of this proposition
- Experience in and interest in offering services related to products sold, including toilet installation and maintenance services, and perceptions about attractiveness and challenges of this proposition

Data analysis was undertaken using Excel sheets to facilitate comparison of quantitative and qualitative responses across each sample frame. Qualitative analysis included identification of commonality amongst responses as well as exceptional cases.

1.2.4 Limitations

The main limitation in this study concerning water contractors is the sample size, which was limited by the available resources to conduct this research. Further research would be beneficial that extends the sample to include a range of such contractors who have only undertaken water construction work for government (not also for BESIK) and from other geographic locations.

The limitations to the sanitation component concerned the limited time retailers of construction materials were available for during the interviews, which limited use of the questionnaire in its full length. The questionnaire had to be shortened on a case-by-case situation to suit the time availability of the respondents. Hence we were not able to explore all questions in the questionnaire with the same level of detail across the sample.

A limitation affecting both components is the focus of the empirical data on the perspective of the enterprises only, as scope limitations did not allow us to also interview government counterparts and community-members. In place of this we have drawn on previous research to situate the perspectives of the enterprises within the wider context to the extent possible.

2 FINDINGS ON WATER CONTRACTORS

In this section we firstly describe the profile of the water contractors interviewed (Section 2.1). Following this, we present findings against pro-social and entrepreneurial traits, demonstrated amongst interviewees (Section 2.2). Key enablers to business success and challenges that are typically faced by district and national-based companies are then described (Section 2.3). Finally, we elaborate on the potential for companies to play expanded roles in the future to support water supply service provision (Section 2.4).

2.1 PROFILE OF CONSTRUCTION COMPANIES

In characterising the water contractors two dimensions were considered: the characteristics of the company owner and the characteristics of the company itself. Characteristics of the owner included gender, age, education, work experience, and time spent on the business. Characteristics of the business included products and services provided, location, years of operation, size, amount of starting investment, and trend in revenue and profits.

2.1.1 Characteristics of the company owner

The company owners were dominantly male (11 of 14 owners) however there were also two husband-wife teams and one female owner. The most common age bracket was 35-45 years old (7 owners), with three owners under 35 years old, two owners between 45 and 55 years old and two owners over 55 years old.

The sample included several university educated business owners, with five who had bachelor degrees (including three in district-based companies), and one with a university diploma. These included degrees in the areas of economics, management, electrical engineering, poly-technique and industrial engineering. Two other owners had training from technical schools. The remaining six had completed secondary school, and following this, their dominant training was 'self-learning' on the job. About one-third of the respondents had attended short courses (from 2-days to 1 week) in business skills or business management offered through Institute for Business Development Support (Instituto de Apoio ao Desenvolvimento Empresarial- IADE), International Labour Organisation (ILO) or United Nations Development Program (UNDP), with three who had attended courses in Indonesia, and two who had gained experience through other development projects of World Bank or Australian aid.

The previous working background of respondents was diverse. The most common previous experience was employment in a private company (five respondents), followed by self-employment (three respondents), employment in an NGO (one respondent), banking (one respondent), agriculture (one respondents) and public sector (two respondents). Only one respondent had no previous working experience.

Most of company owners tended to spend significant time on their business, with the majority quoting anywhere from 40 to 70 hours per week, and three respondents noting that they worked full-time only when there were (construction) 'projects'.

2.1.2 Characteristics of the company

Products and services provided

The companies interviewed were mostly construction companies (11 of the 14 interviewed) with varying degrees of specialised expertise in relation to water systems. Some had built several water systems and were capable of constructing various components of a gravity fed system (e.g. in-take and storage tank, distribution systems and standpipes, electric or solar pumps systems) and others

had been responsible for just one component of a water system within particular projects for the government, the Australian aid program or international non-governmental agencies (INGOs). All companies had competed through competitive tender processes to provide services through the Australian aid program (as this was the original source of the sample frame) within the last 3-5 years. In terms of general construction services, companies generally engaged in government contracts for drainage systems, schools, clinics, roads, offices and buildings. Most construction companies (86%) started their business in the area of civil construction, though in one case the business grew out of a vehicle maintenance workshop, and in another their initial business venture was a small district town kiosk. The three exceptions to civil construction businesses were a company specialised in well drilling, and two companies that retailed water system parts and pumps, and offered installation services for water storage tanks and/or electric pumps.

Location, years of operation and size

Amongst companies interviewed, eight were district-based companies, and six were national. District-based companies tended to work solely in their own district, though one offered services in surrounding districts. Amongst the national-based companies, four serviced all districts within the country, and two only worked in selected districts.

The age of the companies varied, depending on whether they were district-based or national. District-based companies tended to be younger, with five companies under five years old, and the others under 12 years old. National-based companies varied between 12 to 18 years old, with one outlier that was only six years old.

In general, all the companies were relatively small, with no company employing more than 10 people, and most staff only working on a project by project basis. Amongst the district-based companies the general pattern was 1-2 senior positions (director/manager), 1-2 administration positions, and 2-4 technical staff, with variable numbers of local workers (usually recruited locally) depending on the project. Amongst national companies the pattern was similar, and only two slightly bigger companies (8 and 16 employees respectively) were able to permanently employ their staff, and in fact were only able to do this through running concurrent retail businesses. In general, other companies were too small, and the income too irregular, to maintain employees on a full-time basis: *“sometimes we compete, sometimes we win, sometimes not”*. All noted that *“when there are projects”* staff would participate on a full-time basis to meet project deadlines. There also appeared to be loyalty in that the companies would employ the same staff whenever there was work available, and employees tended to return to other activities such as agriculture, between projects. In one case, there was a mutually understood obligation to work with the same staff: *“we keep using the same person otherwise it raises some conflict”*.

The selection of staff was generally on the basis of familiarity and connections, either within families or within close social networks. Ten of the 14 companies selected staff on this basis, though different reasons were cited for doing so. Two respondents noted the need to exercise caution in choosing amongst close networks to ensure good intentions and appropriate skills: *“some of staff are family relations, but we’re very careful in identifying them as some have good intentions, and others not”* and *“they are relatives, but we choose those that have the right skills”*. A key rationale for employing family members was the lack of consistent work available: *“the reason we choose relatives is because the projects are not every year. Sometimes 20 companies compete and we may not win. So our staffs are permanent staff, but they do not work all the time”*.

More formal recruitment processes appeared to be little used. Two respondents mentioned CV’s, however did not seem to be the prime mechanism for the majority of companies: *“people submit CV’s, but mainly we select people we know”*. Three of the national-based companies mentioned more formal processes of recruitment, including approaching the work and labour department or technical schools, as well as ‘trailing’ potential employees in the field to ‘prove’ their ability: *“we*

learned from the European system, when you say that you are qualified, you have to prove that you are capable”.

Amount of starting investment and trend in revenue and profits

Starting investment was lower for district-based companies than national companies. The starting investment for district-based companies was mostly at the lower end of the range USD 2,500 to 20,000 and usually comprised vehicles of some sort, equipment and tools. For national companies the range was broader, from USD 5,000 to USD 110,000, and an outlier of USD 1 million that included foreign investment. In all but one case, which featured support from family, the initial investment was derived from personal savings of the owner.

The overall growth rate of company revenue and profit appeared slow, and matches the small sizes noted above in terms of employees and the challenges of consistently winning tenders. At commencement, district-based companies reported that it took anywhere from 2 months to 2 years for the business to start growing. In the last two years (2013-2015), of the eight district-based companies, half reported increasing revenue and profits, and half reported that these were stable. Amongst national companies, all, but one which was increasing, were stable rather than growing. When questioned about the details of different ‘projects’ and tenders, the majority of companies reported variable success in winning tenders, and hence an uneven workflow from year to year, and usually only one or two projects maximum in a year.

The sources of revenue varied across government contracts, external donors, as well as private companies and individuals and varied in size. The former two, government contracts and aid-related contracts were most prevalent. For district-based companies individual projects could be anywhere from small-scale projects of USD 2,000 – 5,000, to mid-sized projects of USD 10,000-20,000, and large sized projects of up to a maximum of about USD 50,000. Amongst national companies tenders varied from USD 50,000 up to USD 300,000.

2.2 ENTREPRENEURIAL AND PRO-SOCIAL TRAITS

This section explores the presence (and absence) of five typical entrepreneurial traits described by Ernst (2012) amongst the respondents (proactiveness, risk-taking, need for achievement, need for independence, innovativeness). Further, it examines underlying the motivations of the respondents in leading their businesses, with attention to evidence of pro-social traits (such as empathy, service mentality etc.).

2.2.1 Entrepreneurship traits

Company owners demonstrated traits of proactiveness, need for achievement and innovativeness. They demonstrated a lower propensity for risk-taking, and there was insufficient evidence to assess their need for independence. More details are provided below.

Proactiveness

Proactiveness was visible across the whole sample. All companies were watching for tenders to which they could respond, and competing when they could, and as described later in this report, many were interested and ‘ready’ to participate in new business opportunities.

Proactiveness is an important trait with respect to finding new business opportunities and ease in making a business profitable. As one interviewee noted, success depends on initiative: *“if we take initiative, then we can do”*. When asked how easy it is to make a profit in their business, two respondents (14%) felt it was ‘very easy’, one of whom supported his response saying that: *“there is a lot of opportunity, it is up to us to seek”*. A large proportion felt that it was ‘easy’ (8 respondents, 57%), and only three felt that it was ‘not easy’ (21%), with one national company respondent claiming that competition from foreign companies was creating challenges: *“it is not easy in Timor*

now as there are many foreign companies- Indonesian, Chinese and Korean". One interviewee noted that it was 'very difficult', explaining that they were new to this type of business.

Another related area to proactiveness was respondent's confidence to take a loan from a bank for their business. Amongst the seven companies who responded to this question (seven respondents were not interested to take a loan and hence omitted this question) all but one felt 'very confident' to take out a loan.

Risk-taking

Some specific risks identified by respondents that they commonly face in their work included working with unpredictable (and powerful) local authorities and natural disasters and several weather conditions that can destroy or delay construction work.

The overall propensity for risk-taking amongst respondents was low. In theory respondents asserted that taking risks was important, as the large majority of respondents agreed that it was important to take risks in a business, with 11 respondents (79%) noting that it is 'very important'. However in reality it did not appear that companies had a strong appetite for risk, and viewed the risks they faced as 'dangerous'. When asked how dangerous it was to take risks in the construction business, a significant proportion thought that it was 'very dangerous' or 'dangerous' (8 respondents, 57%). A smaller proportion of respondents felt that it was only a 'little dangerous', or 'not dangerous' (5 respondents, 36%).

There was also evidence of risk-aversion amongst responses concerning possible future roles for private sector. For example, in response to the idea of a four-year maintenance contract for one or more water systems, one response was: "*Four years [of a maintenance contract] is too long for us, because we don't want to take risks*". Another respondent demonstrated a commitment to sensibly weighing up risks, as the leader of his company: "*As the Director, I am responsible to think about risk and look for a solution to any problem we face*". There were almost no comments from respondents that demonstrated a keenness to take risks, with one exception who noted the need for a sense of adventure: "*[to be successful you need] a passion for what you do- you need to want to do it. Also you need to be patient. You need to be adventurous, to like a challenge, it is very challenging.*"

Need for achievement

Significant need for achievement was evident amongst all respondents, who demonstrated strong commitment to start their businesses and continue these into the future. The large majority of respondents (11 respondents, 79%) claimed that when they started their business, they had very strong certainty that it was going to be a success. Their level of commitment to continue their business into the future was also very strong, with all respondents noting that they felt 'very committed'. The large majority also reported being 'very confident' about the future success of their business (13 respondents, 93%), and claimed a 'very high' level of confidence in themselves as leaders of their business (12 respondents, 86%).

Need for independence

Need for independence was not strongly tested amongst the questions covered in most interviews and hence we are not in a position to assess this trait at depth. It was interesting to observe however, that three companies involved husband-wife teams to run the company, each with the male partner involved in more strongly in onsite and leadership work, and female partner involved more strongly in administrative tasks.

Innovativeness

Concerning innovativeness, respondents' perceptions of themselves as innovators was very high, with ten (71%) responding that they 'very much' saw themselves as an innovator. Three others also saw themselves as innovators, but to a lesser extent, and only one respondent suggested they did not see themselves as an innovator.

The presence of a certain level of innovativeness was also confirmed by other questions concerning how often the respondents had tried providing new services or products, and how often they followed others' models and ideas. Seven respondents (50%) reported that they 'frequently' tried to provide new services or products, five respondents (26%) reported 'sometimes', and the remaining two respondents had not tried new services or products. Concerning how often respondents followed others' models and ideas, ten respondents (71%) reported that they never followed others' ideas but rather, they developed their own.

2.2.2 Motivations and pro-social traits

Owners were asked an open-ended question about their business objectives, revealing a diverse range of motivations and drivers and a prevalence of pro-social motivations. Responses included motivation to contribute to development of Timor-Leste, to offer employment, to assist rural communities, to provide a service and only a small number of respondents mentioned profit.

The most common motivation was to support development of their country, cited by six respondents, all of whom were from district-based companies. For example, in explaining this motivation one respondent noted: "*[our business objective] is to take part in the development process with government... after the conflict everything was destroyed, that is why we focused on establishing a construction business and building new schools, clinics...*". Three respondents, also from district-based companies also reported that their main objective was to offer employment. One mentioned in particular that they wished to build the capacity of their staff as a key focus. Three owners were motivated by social goals, to serve and help people in rural areas- all three had some affiliation with an NGO, either in their past or present. Four owners focused on a pragmatic wish to 'provide a service', particularly mentioning their wish to offer quality materials and construction, in recognition that this has been lacking in the construction industry to date. For example: "*to provide better services to clients, and introduce better and improved products*". Only three respondents mentioned either profit or 'personal' objectives related to funding their children's education.

Prosocial motivations were also evidenced through responses to other parts of the interviews. As mentioned later (Section 2.2.2) there was also evidence that companies were willing to undertake support services to communities for free, when requested. This appeared to be a common occurrence, reported by four respondents, where communities sought technical assistance from companies when they faced problems and breakages in the systems. In addition, amongst the most important success factors identified by respondents, was again evidence of pro-social motivations. Two respondents focused on sincerity and the reciprocity associated with doing good for others, respectively: "*[the most important success factor is] sincerity, not merely for more profit*" and "*[you] have to do something good for another person, so they will do good for you.*"

2.2.3 Future outlook

The large majority of companies (93%) had a very optimistic outlook on their future, with only one company expressing uncertainty. The latter case expressed: "*It will be different, but need to wait to see. If we don't have any [construction] projects maybe we have other business*". Most companies (71%) suggested that they would be bigger, in terms of their capital, profit or numbers of staff. For example: "*we will be bigger, in numbers of staff and numbers of projects*". A few respondents also articulated their strategies to expand and develop: "*We have to change. The plan is to get better. The profit will be better. We'll promote our product all around the country to get more clients through TV and Timor post.*" and "*In the future it will be different, we will mainly be doing maintenance, as there is increasing demand for this, including private companies and more government contracts*".

2.3 KEY ENABLERS AND CHALLENGES

The key enablers of business success described by respondents were good management skills, adherence to professionalism and quality work, commitment and responsibility and undertaking work for clients who managed their contracts well. Key challenges were posed by interactions with government including through contracts or negotiations at local level, high level of competition in government tenders, access to technical skills and inability to maintain staff on permanent contracts, and financial challenges arising dominantly from late government payments.

2.3.1 Key enablers

Interviewees identified a range of factors they saw as enabling business success. This ranged from effective business management in terms of managing staff and making good judgements, to professionalism and quality of their work to earn trust and respect, to commitment and responsibility in relation to both clients and communities. An external enabler through support from BESIK was also identified by several respondents.

The recognition of ‘management’ as an important skill was evident amongst six of the companies. This was generally expressed in relation to managing their direct staff and workers, for example: *“In my previous job I have private sector experience, so I can continue this, how to manage how to organise people, how to provide training for staff”* and *“[success relies on] self-confidence and good management. When you do a job with good management everything will be fine. Everything we do in the field or buying materials- document everything, payment for workers should be on-time, the workers are very fundamental. Also need good discipline and good technical skills with enough skilled staff”*. It was also described in relation to having knowledge and experience in management: *“[success requires] knowledge of how to manage a business, acquired through training, after two years I have knowledge of it and how to manage it”*. Lastly, good management was equated with good judgement about commercial viability (*“if it’s not commercially sound, it’s not worth doing”*) and attention to reinvesting back into the company to keep all of equipment available and operational: *“When we make some profit, it is not my profit, it is the companies, and I reinvest money back in- to rehabilitate a truck, or another kind of reinvestment”*.

A second key area of importance to business success concerned providing a high quality service. This is interesting, and contrasts with the dominant view of the private sector in Timor-Leste, particularly construction companies, as being only interested in short-term profit (Murta and Willetts 2014). One respondent specifically noted the link between trust in their company and the quality of their work: *“A leader should ... also try to get some trust from other institutions. When we get trust it is better. We must guarantee the quality”*. Another noted the related issue of honesty in their work practices: *“[the most important thing is] to be honest, to have discipline. For example, when people ask me to work in the highland, I cannot choose something else. If asked to transport sand, then I should not transport stone”*. A third respondent noted: *“We must do good quality work, to gain trust from government and the community”*. Another respondent noted the need for professionalism and that higher prices for higher quality could be justified: *“What matters most is to be professional and provide reliable services and good quality products, must understand the quality. The price may be higher, but I provide a warranty for all my work”*. Similarly, another supported this idea with: *“people know that it’ll be more expensive but we will follow well and the work will be high quality”*. Lastly, it was noted that profit-seeking should not be at the expense of quality: *“[you need] self-confidence to do work according to the rules and bill of quantities (BOQ), not just looking to get more profit but looking instead at quality”*.

Several respondents also described commitment and responsibility as key enablers of business success. This was particularly true for the leadership role in a company, which as highlighted by one respondent requires significant dedication: *“[I need to] keep smiling, keep learning. Even if you*

can't sleep at night. When I worked as a manager, second in charge, I was not fully responsible- I was just focused on the clients. Then when I started my own business, I realised what it is to take responsibility. Clients are calling all the time, and I must be available, even if it is the weekend". This commitment and sense of responsibility also extended to how respondents described their work in communities: "Before an important project, we must build relations, show our commitment, then we can implement successfully"

One external enabler of success was described to be BESIK's support to contractors, in the form of support, timely monitoring and mentoring and strong focus on quality. More than half the companies contrasted the way in which government contracts were managed with BESIK's approach, and were complimentary of BESIK's approach. As one respondent noted: "*[BESIK] are there to help at the start and ensure that good choices are made in the design and in choice of materials"*. Another mentioned specifically BESIK's approach to monitoring and mentoring: "*In terms of management of the contract, BESIK is very good at monitoring, they come and consult us and support to guarantee the quality. Government just give the project and you have to comply with the BOQ [bill of quantities]*". The differences in quality of materials between BESIK and government contracts were also described: "*There is a big difference between BESIK and government in terms of quality, BESIK focus on good quality of materials of Australian standards. In government work, the tools and materials are from China and Indonesia and are of poor quality. The government water systems are therefore of poor quality"*.

2.3.2 Key challenges

Respondents were asked an open-ended question about the key challenges they faced. The responses were diverse, and varied from company to company. The challenges can broadly be grouped into the following categories: government and regulation challenges, market access challenges, human resources challenges and financial challenges.

Government and regulation: Companies described challenges arising with interaction with government in terms of customs concerning imports, as contract managers, and within local communities. One company that imports a significant quantity of components of water systems described the need to offer payments to ensure their materials were released, and the challenge of the uncertainty associated with the time required to obtain their importations.

The majority of companies (79%) described challenges faced in government contract management. The core issue was the slow or delayed payments, which case major cash-flow problems for small companies. For example, one respondent noted: "*it can be a very long time to be paid, four, five or six months, even one year, and nothing paid up front*" and "*a negative of working with government is six month delays in being paid*". A related contract issue was being asked to re-do work that was deemed of inadequate quality, whereas the company believed the quality was high: "*Government only come when the work is 50% done and complained and asked us to re-do some of the work, even though it was good quality.*" A counterpoint to this perspective is the observation from many Timorese of the poor construction quality of many construction companies (e.g. roads) which may well justify pressure from government on companies to improve their quality.

Lastly, negotiations at local level could sometimes be difficult for companies. Two companies noted the need to offer monetary gifts to the *Chefe Suco* (village leader) to ensure smooth relations. One other company had faced major challenges with local authorities in relation to an irrigation project. A natural disaster (severe flooding) had damaged construction works that were underway, and the local leader wished for the project to continue despite the risk of further damage in the rainy season, with the motive that he wished for a company to whom he was linked to undertake the work. As the respondent explained: "*The biggest challenge was the local authorities, including from the public works government staff. When the natural disaster damaged the drainage system that we were building, we tried to communicate with the head of the village that it would be best to wait until after the rainy season. But the head of the village wanted to go ahead. So we approached the*

municipal authorities, and provided a letter. We resolved the issue with the members of parliament. We are trying to explain why we postpone due to flooding, that from a technical point of view we cannot continue. In the end some of the farmers understand, but others not. Last thing regarding these retaining walls was that government came. Local people related to local authority also applied to do the work, and had a conflict of interest. Local authorities should not be doing the private sector work, but they are". These examples demonstrate the complexity of relations between government and small private companies, which can greatly affect companies' ability to operate.

Market access, including competition: More than half of the companies noted that competition in tender processes were one of their biggest challenges. This was due to two reasons. The first was insufficient skills, as reported by one respondent: *"we miss out on winning tenders- it depends on the technical skills and design. We try to improve these through attending training to try and get better"*. The second reason was lack of transparency in selection processes for government tenders, which respondents linked to political interference in the tender processes, as one respondent replied: *"The biggest challenge is competing in the tenders. We meet all the criteria in terms of staff, office, transport, but can't win the tender- political interests mean that we don't win tenders. Therefore we have ups and downs. There is no transparency."*

Human resources: A small number of companies (21%) pointed to issues concerning accessing and retaining staff with appropriate skills. As mentioned earlier, many firms only employ staff during 'projects' and do not have sufficient throughput of work to employ staff on an on-going basis. The challenges mentioned mostly pertained to technical skills, including building and extending such skills. For example, in highlighting this issue, one respondent noted: *"on technical issues we are okay, but [for some staff] to learn something new is difficult- for some people when we talk about BOQ and design - it takes time"* and *"especially for technical persons is difficult. Currently we have one technical staff, in future he would like to have training, so that our company is more competitive"*.

Financial challenges: More than half of respondents described financial challenges including late payments, being forced to sell assets, issues with pricing in government contracts, and expectation of contributions to communities. Late payments from government contracts were a key source of financial stress for these small companies. For example one respondent noted: *"A big challenge is a financial challenge, probably because we are just starting. It is challenging to pay our [8] permanent staff. If government pay late it causes challenges for us. We have another company [supply business] and our staff also work in that business, and we use this to cross-subsidise when we are waiting for payment from government"*. And another respondent reported that: *"Lots of companies in Dili have to sell their assets because of not being paid by government. I worked on a drainage systems 2 years ago for government, worth USD 70,000, but still haven't received the payment"*. A related financial issue was that government contracts sometimes included prices from previous years that were not current, and which minimised companies' ability to break even: *"When we design with the [bill of quantities] BOQ with the appropriate price then we can get some profit. But when the BOQ is designed on last year's prices, then we can't get a profit. This happened to me."*

One last financial challenge noted by one respondent was in relation to the communities in which companies work. This company described how they were perceived in the community and the high expectations that they contribute financially to community initiatives: *"Our biggest challenge is facing the community. There is always some uncertainty. They require different things from us, and there are different activities that we must pay for. For instance youth requires us to contribute to an activity. These are not in the BOQ, but we have to pay."*

2.4 POTENTIAL FOR FUTURE ROLES IN SERVICE PROVISION

This study sought to examine potential for water contractors to expand their roles in supporting service provision. The following sections consider enterprises' current understanding of operation and maintenance (O&M) and service provision needs (Section 2.4.1), opportunities for expanded enterprise roles (Section 2.4.2) as well as barriers for such roles (Section 2.4.3).

2.4.1 Enterprise understanding of O&M needs and service provision

A precursor to enterprises being in a position to answer interview questions about service delivery models and private sector roles, or indeed play such roles in the future, is a certain level of understanding of the strengths and shortcomings of the current model for service provision in Timor-Leste, namely through GMFs and district government (supported by subdistrict² facilitators). As one respondent noted: *“sustainability [of the functioning of water systems] is a concern of everyone in this country. After one year, systems are not functioning.”* It is therefore important to outline what we found to be respondents' current level of understanding of these matters.

Of the eight district-based companies, four had limited understanding of what was involved in service delivery and O&M support. They demonstrated knowledge of the concepts of community management through a GMF and fee collection, and responsibility of SAS for larger repairs. However these companies did not appear to have knowledge of how this arrangement worked in practice or awareness of the complexity of issues that arise in ensuring an on-going service. Rather, it appeared that their exposure to management of water systems was limited to what they were told the procedures would be. For example, one respondent simply described that: *“by the end of the construction there is a GMF and they take care of the water system. For example, in the dry season an operator opens and closes the system so water is not wasted overnight. When we finalise the system we hand over the system including some tools to the GMF to fix any breakages.”* Another described that *“community pay 50c per month per family. This money is to fix the broken pipes”*. Finally, one respondent appeared unaware that systems require ongoing maintenance, and suggested that: *“we built the system to good quality and so there is no maintenance”*, demonstrating lack of longer-term experience with what is required to keep systems functioning.

Amongst the remaining four district-based companies a more sophisticated understanding of service provision was demonstrated in their responses, particularly concerning the typical challenges faced by communities, and by government, to play their respective roles. For example, one respondent noted that: *“There is one SAS person but he cannot cover the whole area and sometimes there are problems in the community, like making holes in the system”*. Another noted issues that can arise in a GMF as well as supportive factors that can help a GMF to function such as older GMF members: *“sometimes people in the group want big money. In one year they are gone. In our subdistrict the older people in the GMF stay and keep the system running. In other places if young people are involved in the GMF then when they got the money they will leave”*. Limitations in government capacity were also noted, and may relate to the decision to hire SDFs primarily to support social aspects and monitor systems rather than provide technical support: *“the SDFs [subdistrict facilitators] have insufficient technical skills”*, and an unrealistic reliance on communities: *“what happens now is that the*

² Subdistricts have been named 'Posto de Administrativo', however will be referred to as subdistricts in this report for simplicity

government rely on GMF to do everything, but they don't have capacity. It is good to involve community in the project, and to feel that this project is their project, but we can't rely on them for everything- fixing tap stands, gravity systems- it needs technical background in that area". Another company expressed that: "government staffs are insufficient, there is only one technical person in the district. When we built the system and had to consult them it was very slow... and sometimes they take months to assist when the community needs help." Finally, one district-based company pointed out electric pump systems as a specific area where communities struggled to keep water systems operational: "the water systems that use pumps and electricity need some expertise to maintain [them], it is hard for community to do that".

National companies shared relatively informed perspectives on service delivery and pointed out the common issues arising with current approaches. They pointed out several challenges, which are relevant no matter who performs maintenance tasks or supports service delivery, whether it be GMF, NGO, government or private company. These challenges have also been documented in reviews of Timor-Leste's service provision model (Willetts, 2012; Whalen and Belo, 2013). The challenges reported by national companies included:

- **Lack of asset management records and processes:** One national company noted the challenges of maintaining pump hardware across the country due to differences in specifications and lack of asset management systems and database. This company noted that 'fancy systems' including those that are automated were not appropriate for the context and caused maintenance issues that could have been avoided. Bore holes are drilled by multiple different companies and "there are no records for boreholes"
- **Need for consistent support to GMFs to successfully manage a system:** Another national company noted that they "need staff [NGO, government or private company] focused on a locality, how to manage the system to function, administration and fee collection, ensuring the GMF structure functions, and a role to solve social problems and help the group to make proposals to government to fix the system when needed". Another company confirmed their view that: "O&M requires being there daily. In [a particular subdistrict], when we are with them [the GMF], they are very active, have a schedule, etc. But once we leave they will go all over the place." A review of GMFs in 2013 showed that only one third of GMFs collected adequate tariffs.
- **Unrealistic reliance on volunteerism to provide service delivery:** One national company noted that the current model assumes that community members will voluntarily look after the water system. Their view was that the role needed to be recompensed appropriately: "if people are properly paid to do O&M then it will be done well"
- **Inadequate government support to GMFs or maintenance:** Two companies noted issues with the current approaches to support GMFs and maintenance through subdistrict facilitators (SDFs): "SDF is meant to do monitoring of functioning, but it is not working. SDFs have no fuel and no per diem so cannot travel. There should be a stronger commitment, as government, and should be working based on a job description"
- **Variable quality of hardware used:** Two companies pointed out that water systems are built to highly variable quality, with highly variable materials quality. Low quality materials are likely to increase the necessary maintenance. Both companies described how they are making efforts to providing high-quality parts that require low levels of maintenance. For instance, one company expressed these challenges by noting the following: "Mostly we supply and design water pumps, solar pumps- we introduce these due to their low O&M and low maintenance costs, just to check the solar panel. We also sell German pumps with long 10 year life span without needing to take them out."

Views of national companies were not homogenous however. One national company expressed greater faith in GMFs and their ability to maintain systems, though acknowledged that it depended on the individuals involved: “*GMFs get training from BESIK or government, including how to clean the tank, the intake etc. I believe they [GMFs] can do it [maintain the system], if they choose. It depends on the person. So far, since 2009, in [one district] where we built the system, there are no complaints.*”

2.4.2 Opportunities for expanded enterprise roles

In this section we explore the companies’ level of interest and capacity to perform roles in operation and maintenance, and in doing so, their level of understanding of what such opportunities would constitute. It was challenging for most district-based companies to conceive of roles different to those they currently experience. Most respondents responded more easily to questions around specific scenarios rather than open-ended questions about possible private sector roles. The scenarios discussed with interviewees included:

- Providing technical and/or social support to GMFs (for example through a fee-for-service arrangement)
- A longer-term maintenance contract from government (for example for 3-4 years)
- Specialised maintenance (e.g. pumps)

In general, there was an overall interest and willingness to consider opportunities across these scenarios. A typical response was: “*If government or BESIK want us to play a role then we are ready!*” Below we outline what such private sector roles might look like, and how interviewees perceived such opportunities. We later bring in the barriers that companies also articulated as regards to such roles (see Section 2.3.2).

Company support to GMFs through fee-for-service

One scenario for private company involvement in supporting service delivery would be for a company to provide support to GMFs on a fee-for-service basis. This could be set up in a variety of ways. One arrangement would involve a company offering services to GMFs, including on-call technical maintenance support, regular monitoring (including preventive maintenance), provision of spare parts, or other such services. A company could cover a prescribed geographical area and market their services directly to GMFs. This model could exist in either of the scenarios that community fully cover O&M costs (assumed under the current Decree, and yet assessed to be unrealistic based on recent BESIK analyses), or that government subsidised on-going costs. For the purposes of this research, the former was assumed given it is the current situation.

Four of the eight district-based companies described that they had already provided technical support to communities without seeking payment for such services. In all situations, this occurred when the company had built the system (or part of the system), and subsequent to the end of the 6 month or one-year maintenance contract (defect warranty period), the community met with challenges beyond their capacity and called the private company to request assistance. In all cases, respondents noted that they were happy to provide unpaid support. For example, one respondent stated that: “*in our subdistrict, even though it is not mentioned in the contract, community faced problems to fix the pipes. Then the GMF came to ask us for our help, and we can provide help to fix the system. We are not paid. But because we are in the community so we help to fix the system*”. And another added: “*When we handover there is SDF and SAS to train them [the GMF] to fix their own system. As Timorese, if they come and ask for help then even if outside our responsibility for maintenance, we help and fix it voluntarily.*”

Hence it is clear that a role to provide technical support is possible. However, to shift from an unpaid role of offering ‘help’ to GMFs, to a genuine fee-for-service arrangement presents a range of challenges and barriers. These are discussed further in Section 2.4.3 below.

Companies taking on longer-term maintenance contracts

For most district-based companies, their understanding of a potential future role for companies in service delivery was formulated around their existing experience concerning defect warranty periods. As part of their tender agreements when constructing water systems (for both government and BESIK), it was reported to be common for companies to provide a guarantee of the quality of their work for a prescribed period usually 3 months, 6 months, or sometimes 12 months. This was seen by respondents as a form of short-term maintenance contract. For most companies, this maintenance contract was a positive experience. This was because, as would be expected, there were only minimal breakages and parts which wore out (e.g. taps) within a short period of operation of a new water system. For example, one respondent noted: *“If we construct the system then we look after the system for one year.... we have not faced a lot of problems. We dug the pipes in deep and did good work”*. Another company mentioned the kinds of maintenance that is needed in this time-frame, and the limits of their role, in that they were not responsible for larger-scale maintenance: *“small problems include pipes being broken, taps wearing out quickly- it depends on the project and the quality- if there is major damage then we must come to the project owner, government or BESIK, and discuss, as we would not be responsible.”*

Hence when asked whether they would be interested in a maintenance contract of a longer duration, for example for 3-4 years, six of the eight district-based companies reported that they were interested and willing, with only two of these also expressing some reservations (captured below in Section 2.4.3) about such an arrangement. Typical responses included the following:

“We are ready! If there is a maintenance tender, as a company we are ready to compete. We are ready!”

“If the contract is for 3-4 years, then we will do it!”

“It is very interesting [for us to have a maintenance contract], because the pipes and system are only broken in heavy rain or landslides. In the dry season, everything is okay”

“We have a technical person to deal with issues, so we would like to compete.”

The response from national companies was similarly positive, in that they appeared ready to take up such roles and saw it as a new business opportunity. For example, one company reported on their ethos to say yes to potential roles where they may help: *“As a company we have a slogan that we should do everything to serve our country and community and rural communities. As a company, we are ready to help.”* One national company responded that their interest in taking on a maintenance contract would not be without conditions, noting that it would: *“depend on the client. If the contracts were issues through an aid program it will have a system. With government, there is no system, and agencies would have no oversight and there would be manipulation [of the finances].”*

Specialised maintenance roles

Two of the eight district-based companies interviewed had expertise in electrics and pumps, and four of the six national companies had such expertise. One of the district-based companies proposed that this was the most obvious and important role for government to involve private sector. This company proposed that: *“the government should hire companies with expertise to maintain the pumps”*.

One national company already provides warranties for products such as pumps: *“They have a warranty of 1 year, or sometimes 2 years, on a pump. Usually we do not have a problem in that time. We*

only have to do maintenance on 1% of those installed without that time period". This company currently has several maintenance contracts with government for electric items, water pumps and generators for a variety of ministries: "These are yearly contracts. We monitor, and if we see a problem, then we quote for the actual repairs". This company was interested in a future role: "to do monitoring of pumps, this is our area - we are Dili-based but we can send someone out". When asked about partnering with local companies in this type of role, the response was: "there are not many experienced enough, but we could do, as this would minimise costs for the customer. We have tried to find some local service providers, but it is hard to find people who are responsible".

Availability of required skills to support service delivery

Companies were asked both about what skills they believed were needed to play expanded roles to support service delivery, and also whether they felt that they had such skills. Across district-based companies, six of the eight companies felt that they had sufficient technical and social skills to engage with communities and support better operation of services, and one felt lacking in sufficient technical skills, and one felt lacking in social skills. Social skills refers to the ability to work with communities and GMFs and resolve conflicts and help communities self-organise to manage their water system.

Only one district-based company felt that their technical knowledge of water systems was too limited and meant that they did not have the requisite technical skills. This company was new to building water systems, and only recently the intake and storage tank of a system (not the distribution system) since often several different contracts are used to cover different parts of a water system (drilling, tanks, electrics/pumps, distribution system etc.).

Another district-based company felt that they would need training to handle the 'social' side of supporting service delivery, and assumed that this expertise lay primarily with NGOs: "*We would need NGOs to provide training. We have people here, but we need someone knowledgeable about how to handle the situations*". Other companies felt that the social side of dealing with communities was already part of their work when building water systems, and companies demonstrated awareness of the need to involve communities in decisions: "*Before we implement we consult and have dialogue with the community, conflict happens when we don't involve the local people*". Another company noted that: "*We have conflict resolution skills. We used that to solve the problems. For example when we do new installation of pipes then there are lots of problems, including lack of sufficient pipe. We help resolve this. I am Director of this company but I am [also a local leader]. If GMF face problems they will always come to me*". And yet another described that: "*we also have negotiation skills for working with community*".

One district-based company gave a different perspective and observation in relation to capacity and skills. Their view was that companies can hire in the necessary expertise, and therefore do not need to already 'have' such expertise. After noting that they probably would have most of the required skills, they also added that: "*If we don't have enough maintenance staff then we can recruit some. If a contract is more focused on technical skills then we can hire someone with those skills. If more on social skills then we can hire someone with those skills, or someone closer to the community. I think there will not be conflict or jealousy when recruit a local person – and they will be happy to have a job*". It should therefore not be assumed that the stereotype of NGO carrying 'social' and community-development skills, and companies carrying technical skills, necessarily holds, since flexible companies can bring in staff of whatever skills are required for a particular purpose.

Amongst the national companies, five of the six suggested they had requisite technical and social skills, with one company less certain, suggesting that they would need to bring in stronger social skills: "*We would need more on local community engagement. We currently support ceremonies, but it would need more than this.*"

One national-based company leader (also with affiliation to an NGO), when asked whether support roles for service delivery were better sought through private sector or through NGOs suggested that: “[*according to my opinion, it [maintenance contracts] is better allocated to NGOs as they have staff with the skills. Maybe private sector has never done work like this. And for a big company they may have experience, but may be looking for profit. According to NGOs, yes, they have skills to do this. The company is more focused on how to teach the target, focus on the physical system, not on the task to work with community.*” When pressed as to whether this will always be the case, or whether private sector may indeed be developing wider skills, or have the potential to develop such skills, the owner’s response was: “*It depends on ... the project should be clear in the beginning – [maintenance arrangements] must be included in the contract, [and] the government part should be to monitor*”. Interestingly, the same company noted that NGO skills may be insufficient as regards technical matters in order to undertake maintenance.

2.4.3 Potential barriers to expanded enterprise roles

This section discusses the potential challenges associated with any of the possible models for private sector involvement in water-supply service provision presented in Section 2.4.2. This discussion is organised into three sections dealing with government-managed maintenance contracts, fee-for-service arrangements and a broader question about the existing policy and regulations with respect to service provision.

Potential challenges with a fee-for-service model

As described above, one scenario for private company involvement in supporting service delivery would be for a company to provide support to GMFs (on-call technical maintenance support, regular monitoring, preventive maintenance, provision of spare parts, or other such services) on a fee-for-service basis, with a single company supporting multiple GMFs. Three challenges to this model were raised by interviewees.

In response to whether fee for service could work, one company responded negatively, indicating that this approach would not work because Timorese communities would be unlikely to seek assistance from someone with whom they did not already have familiarity and a pre-existing relationship. As one respondent noted: “*This is Timorese culture. When someone knows me, they can ask [for help]. If not, they will not ask me for help. So if a company is from outside, a GMF will not ask them for help.*”

Another company indicated that in the context of the current institutional framework a fee-for-service role would be difficult, as there is a perception of the availability of ‘free’ support from government: “*If in a district, there are lots of GMFs because we have a lot of systems, they prefer to go to government to solve, they believe that government as having lots of money, so they require government to do this work. So while private sector has capacity technicians and could help, but they will not come to us, because this will not be paid*”.

One final issue concerned the potential complexity associated with communities assessing what support they require from a company and when. One company gave an example of being requested to come to a community to fix a pump, however in fact the pump was in full working order, and the issue was a lack of water resources: “*Sometimes we get called out to fix a pump, and in fact the problem is that there is no water, not that there is a problem with the pump, but there is no water to pump!*”

Potential challenges with government- managed maintenance contracts

There are at least five different challenges raised during the research concerning the viability of private sector playing future roles through longer-term government-awarded maintenance contracts. These include potential for loss of community sense of responsibility, how to

appropriately share 'risks' across government, community and enterprise, uncertainty of maintenance requirements and related cost predictions, typical government contract management challenges, and finally, establishment of a new way of working for private companies and communities.

Loss of community sense of responsibility: A key concern for companies with this arrangement was that communities would no longer feel responsible for their water system if there were a 'paid' service provider role involved, and would become overly reliant on the company. In fact, one interviewee with experience in this scenario suggested this is exactly what happened: "*O&M requires being there daily. In one subdistrict, when we are with them [GMF], they are very active, have a schedule, etc. But once we leave, they will go all over the place.*" A related concern was that community might not allow required changes and upgrading to the water system: "*Sometimes we face a challenge from the community themselves. Initially we did a project where the land was not claimed by the community. But 3 years later, they have a claim on that land for farming and a house, so when we'd like to make a change to the distribution line, they say you cannot do that, because we have this land now*".

As described further below, there is also a risk that community members would fail to take good care of their system, resulting in excessive breakages and costs. And equally, that community members may decide that they should no longer need to contribute financially to ongoing system operation: "*If we win an O&M tender, then we would be responsible to cover the cost to fix the system and to pay GMF staff working with us. It's clear that if we have O&M tender then we must allocated money and community must also contribute, but will they be happy to do that?*". Lastly, there may be challenges in delineating the boundaries between company and community roles- for instance should a company role include fee collection as well as O&M, or should fee collection remain with a GMF. There are clearly many details which would require resolution, likely in different ways, depending on each village context.

Sharing risks: Another key area raised by interviewees concerned the potential risks that would be carried by their company, unless the contract was appropriately designed and managed. Two companies immediately pointed out the risks for their company due to the uncertainty about what breakages would require fixing during that time-frame: "*Four years is too long for us. Because we don't want to take risks. We don't know what will happen in this time. It is uncertain, in terms of budget. 1 year is okay, 2 years is also too long*". Such risks arise due to natural causes of system breakage, community interference with the water system, natural disasters, or the quality of the original work in drilling a bore or constructing a water system. Examples of each are provided below.

One national company brought up in particular, the risks caused by natural forces, not necessarily disasters, but movement in the earth and soil during the rainy season: "*it can possibly challenges to have a 3 or 4 year maintenance contract because you see, the climate change, it's affecting the environment and also the land structure- see this picture of pipes that we built, and the pipe was straight, but see here, much later, the pipe has become like a snake and the pipe can break. The land moves due to the rainy season. A contract like that would have a big potential risk. Before a contract, we would need to do a study, and we would understand the condition of the land and of the water systems, before doing such a contract*".

Another company had a negative experience during a one-year maintenance contract, which demonstrates one of the risks and complexities of having an external organisation involved in maintenance: "*During one year, we are responsible for all maintenance, including an issues caused by the community. We have got the agreement on paper. We signed it. So even if the repair is costly, we must pay it*". It is easy to see how such problems could arise, and result in tensions and conflict between an external organisation responsible for maintenance, and the community, since vandalism or breakages caused by community members are commonly reported.

This same company had also faced challenges during construction due to a natural disaster (heavy flooding) and therefore was highly concerned that a maintenance contract would hold them to account even if circumstances beyond their control damaged the system. A different company noted this challenge (of natural disasters) also, and suggested that: *“the contract would need to have two parts, first, in the case of natural disaster, make it clear in the beginning that government must help if this is the case, and second, hire people with specialities, power and pump, with clear monitoring costs to look after the systems”*.

Finally, one company was interested in maintenance of bore holes, but limited that interest to boreholes their own company had drilled: *“60 wells need to be rehabilitated and cleaned, 30 of which are ours. We are only interested to rehabilitate our own”*. The reason being that if original construction was not sound, then becoming involved in maintenance tasks would open the company up to risks as quality of the previous work could not be guaranteed.

Uncertainty of maintenance requirements and related cost predictions: A related area to risk-sharing is predicting maintenance requirements and their costs, since ultimately the sharing of risks occurs through predicting and sharing costs between government, community and private sector.

Current maintenance contracts held by one national company (for generators within government buildings etc.) were on a one-year basis, mostly involved monitoring, and if a more significant maintenance issue arises, then a request is sent through to separately pay for this task.

This arrangement would be difficult to replicate in the rural water supply sector, and some ‘expected’ level of maintenance would need to be predicted. One company asserted they thought these could be fairly easily predicted, but that breakages caused by community would make things more complex: *“It's easy to predict day-to-day maintenance costs, but it also depends on the market price of spare parts, sometimes the prices of spare parts change. And also the obstacles and breakages depend on behaviour in the community [not just on the hardware wearing out], as some communities maintain their system well, but others are naughty, they broke the air valve which is needed to help the water flow, and also tap stands, sometimes it's only one month and its broken and must be replaced each month”*. Overall, an important step forward of the sector, no matter who is responsible for maintenance, is to undertake detailed empirical research to develop an understanding of typical cost requirements of systems of different sizes and types.

Typical government contract management challenges: Almost every interviewee reported challenges in their contracts with government, in particular with regard to late (or no) payment. Such problems are likely to be replicated for maintenance contracts, and in addition, maintenance contracts would require a multi-year budget commitment from government, which at present is not possible.

Socialisation of a new way of working for private companies: For at least one company, however, the owner was unable to imagine a contract that worked in a different way (such as a service contract) to their usual contracts (for construction with a short-term maintenance guarantee): *“As local people we are willing to take part in that kind of maintenance work [on-going maintenance work], but our work system may not allow us to take part. This work system doesn't permit it because we work based on a contract, and after this contract we handover to the community”*. This demonstrates that it may be challenging to introduce new ideas and models of how services are provided, as people have certain expectations based in current approaches, and that the current perception of maintenance contract is only an ‘interim’ arrangement prior to full handover to community rather than a long-term proposition.

Existing policy and regulations

One district-based company raised the issue of the existing policy and regulations that stipulate that O&M will be carried out by the community, with prescribed roles for government in relation to larger-scale issues or breakages. This respondent pointed out that there is no current provision for private sector to play a role, and hence that to set up arrangements that involve private sector would run contrary to current policy. This respondent proposed: *“In the regulations [Decree Law 04/2004], article 21-27, says that the GMF should do maintenance, and not a company. If we were to do this, it would have to be thoughts out carefully”*.

2.5 DISCUSSION, CONCLUSIONS AND IMPLICATIONS

This research makes evident both the increasing capacity and professionalism that is being developed within the private sector, but also demonstrates significant challenges that need consideration if companies were play roles that support on-going service provision.

On the positive side the companies interviewed, whilst small in size, demonstrated sound business management skills, an interest and skills in providing quality services and were optimistic about increasing their size and role in the future. Their motivations were varied, with few focused specifically on profit or personal gain, and other broader motivations such as contributing to their country’s development were more dominant. Whilst a key entrepreneurial trait of risk-taking was not strongly represented, other traits such as proactiveness, need for achievement and innovativeness were evident. A key finding was companies ‘readiness’ to engage in new business opportunities that might arise.

The three key possible roles for companies explored in this research were:

- Providing support to GMFs (including possible roles such as on-call technical maintenance support, regular monitoring, preventive maintenance, provision of spare parts, or other such services, or on a fee-for-service basis, with a single company supporting multiple GMFs)
- A long-term maintenance contract from government to provide back-up maintenance services on systems within a geographic area (for example for 3-4 years)
- Specialised technical maintenance (for example for pumps)

These roles are not exhaustive, as other models are possible. For instance relationships between other committees (for example those set up through the PNDS programs) or local authorities themselves with private sector may provide further avenues which could be explored. In addition, water contractors are not the only form of private sector that could be considered. For instance there may exist other companies (of larger size, and potentially less constrained by cash-flow) who hold maintenance contracts in other sectors (eg. for air conditioning, road maintenance, cleaning services) that may have some transferable skills.

Respondents outlined challenges and considerations in relation to each of the three roles explored in this research. These are summarised below, and all three possible roles would require socialisation of a new way of working for government, private companies and communities.

It was felt that fee-for-service work for GMFs would be difficult in Timor’s current cultural and institutional context, since it would involve communities requesting assistance from an outsider, and since there is a current perception that ‘free’ support is available from government (even it is admitted that responsiveness to request for such support is low). If this model were to be trialled, it would likely require support to a willing, interested company to develop and market a set of services to GMFs within a particular locality, as well as associated socialisation and promotion of

the concept with communities who might draw on these services. Or, in another variation, if the case for greater government financial support to subsidise service provision in rural areas were made and such support were available to communities, then it is possible this model may be more viable.

Long-term government-awarded maintenance contracts raised issues including potential for loss of community sense of responsibility.³ This model was also seen to present challenges in devising arrangements that would appropriately share risks across government, community and enterprise. In particular, uncertainty of maintenance requirements and related cost predictions would require considerable investment in developing both an evidence base (for instance on typical maintenance cost requirements) and skills in contract preparation and management. Given the current challenges faced with government contracts, in terms of their management and slow payments the latter is likely to be challenging. One avenue to experiment with this model would be to extend existing maintenance contracts for a small number of companies for a longer period (than the current 3 months- 1 year), and draw on these experiences in a form of action research to develop an understanding of the issues and costs in further detail.

Specialised maintenance roles, for instance concerning pumps, appeared to be the clearest, more appropriate role for private sector in the short term. Amongst both national and district level there were companies with capacity to play this role, and indeed some form of partnership between national and district-based companies would be one possible model for this role.

Lastly, envisaging new roles for companies requires reconsideration of the existing policy which is focused on community and government roles, and does not articulate a role for the private sector. It is likely premature to develop such changes at present, however over time, as arrangements evolve and more is learnt about the best ways to optimise private sector roles to support service delivery, this may at that time be appropriate. This is particularly the case for larger-scale rural water systems, which required a professionalised level of management to ensure their ongoing functioning. An important factor in articulating private sector roles will be to ensure that related government roles and capacity are given attention and can continue to guide the sector in providing water services for all communities across Timor-Leste.

³ Though it should be noted that previous studies demonstrate that the existing sense of responsibility by communities is already variable (Whalen and Belo, 2013; Willetts, 2012).

3 FINDINGS ON RETAILERS OF SANITATION-RELATED PRODUCTS

This section starts by describing the profile of the respondents both in terms of the characteristics of the respondents themselves, and the characteristics of the businesses and/or organisations they lead (Section 3.1). We then discuss the entrepreneurship and entrepreneurial traits of the respondents (Section 3.2) as well as pro-social traits evident amongst these (Section 3.3). This is followed by a discussion of the key enablers and challenges affecting business viability and success of retailers of sanitation-related products (Section 3.4). Finally, we elaborate on the potential for these organisations to play expanded and effective roles in sanitation marketing (Section 3.5), and the implications of that for how development agencies may engage with these organisations (Section 3.6).

3.1 PROFILE OF RESPONDENTS

In characterising the retailers of construction materials and NGOs producing and/or retailing local sanitation products, two dimensions were considered: the characteristics of the business owner and the characteristics of the business itself. Characteristics of the business owner included gender, age, education, and work experience. Characteristics of the business included products and services provided, legal status, years of operation, size, amount of starting investment, and monthly revenue.

The same dimensions and type of characteristics were used in characterising the local NGOs interviewed.

3.1.1 Retailers of construction materials

Characteristics of the business owner

A total of 12 construction material retail business owners were interviewed. The owners were predominantly male (67%), although there was also one husband-wife business and three female owners. Half of the retailers were in the age bracket of 35-45 years old and the other half were in the age bracket of 46-55 years old. Three respondents had a university degree, five had completed secondary school, two had completed high school, and the two remaining had completed primary school. More than half (67%) had previous working experience, mainly as an employee for others (e.g. shop assistant) or self-employed occupations or business (e.g. selling products at the market, running a sembaco shop, cattle trading). Only two of the 12 respondents had previous working experience in the public sector. Only two respondents received some form of formal business training. The remainder reported that they had developed the skills to run their retail businesses through self-learning.

Characteristics of the business

Products and services provided

More than half of the retailers (67%) sold construction material products in addition to a broad range of other products such as basic food and household items, and stationary (**Error! Reference source not found.**), and the majority (75%) expressed a desire to increase the type and amount of material construction products available at their shops.



Figure 1: District based construction materials retailer who sold wide range of products in addition to construction materials

The majority of respondents (75%) also sold toilet pans although these were not the core focus of any of their business, even though four respondents noted an increase in demand for toilet pans over the years. According to observations by the researchers, toilet pans were generally displayed only in small numbers and not in prominent positions in the shops (**Error! Reference source not found.a**).

Three respondents operated a larger set of business activities associated to their retail business such as concrete and brick production, and welding (**Error! Reference source not found.b**). This was also the case of a retailer visited by the researchers but not interviewed. One of these retailers also sold appliances such as fridges and provided maintenance services associated to these within the warranty period.



Figure 2: Imported ceramic and plastic toilet pans available at a district based retailers (a) and retailer with larger set of business operations including concrete production (b)

Two of the respondents also operated as construction contractors in addition to their retail business.

Legal status, years of operation and size

All businesses were formally registered and had more than five years of operation. As Figure 3 shows, the majority (75%) has been operating for more than ten years.

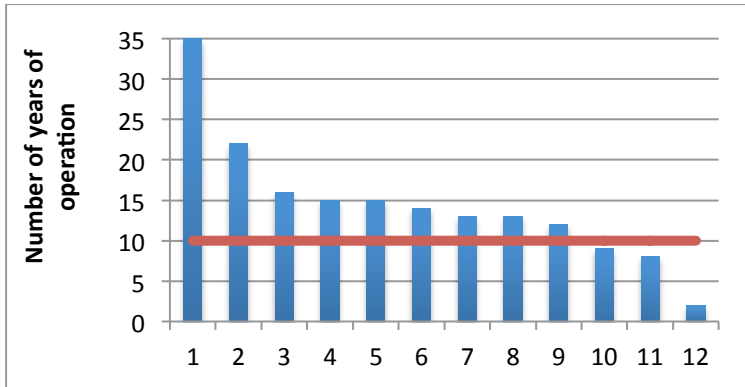


Figure 3: Number of years of operation of the retailers

The retailer that had operated for 35 years was a family business that had been handed over from one generation to another.

The majority of the retailers (75%) had ten or less staff (Figure 4). The business with the highest number of staff (70 staffs) was the Dili based wholesaler who used government owned warehouses at the district level as distribution centres. Typically the operation of these warehouses required four staff (one warehouse head, one administration assistant, and two people to load and offload materials), except in districts where sales were lower such as Maliana. Some businesses (25%) had a larger set of operations linked to the retailers such as cement production and welding, and therefore had a larger number of staff.

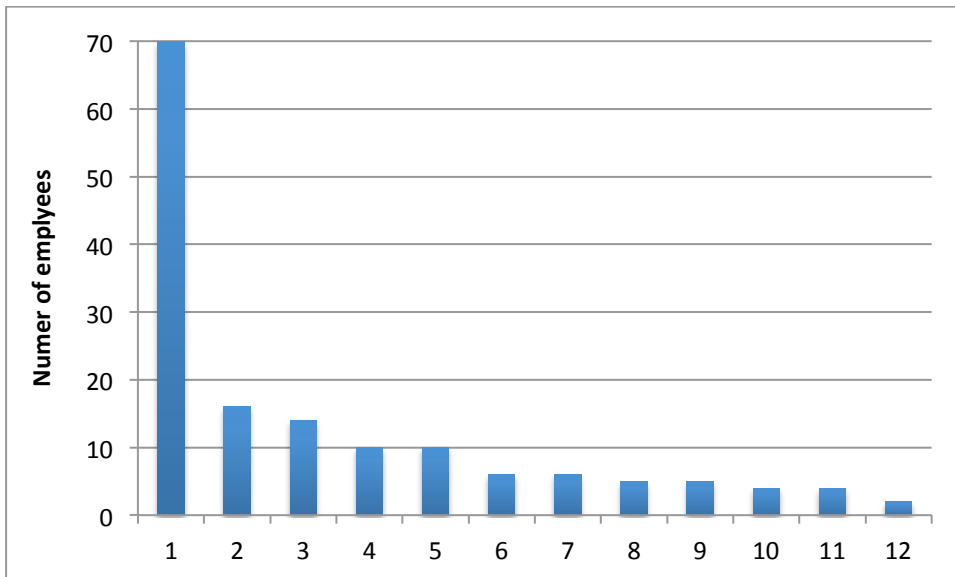


Figure 4: Number of staff employed by the retailers

Amount of starting investment and monthly revenue

Ten out of the 12 retailers reported on the amount of investment to start the business. As Figure 5 shows, this varied from less than USD 5,000 (for six shops) up to one that invested more than USD 75,000, with the other three between USD 20,000 and USD 65,000.

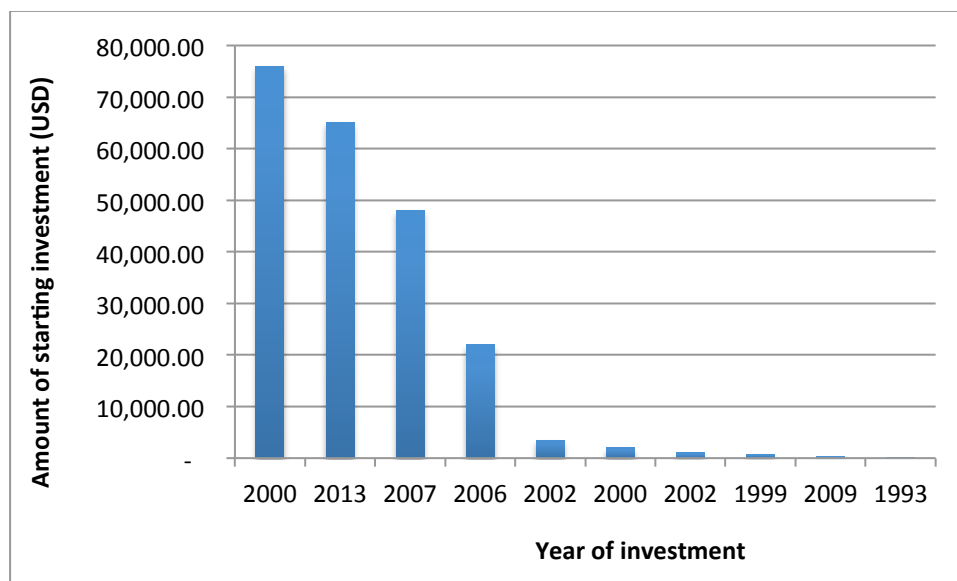


Figure 5: Amount of starting investment

However it’s important to consider the year the investment was made. As Table 1 shows, except for one case, larger amounts of start-up investment tended to correspond to more recent years.

Table 1: Business start-up investment and year investment was made

Initial investment (USD)	Years of investment
76,000	2000
65,000	2013
48,000	2007
22,000	2006
3,500	2002
2,000	2000
1,000	2002
800	1999
300	2009
50	1993

Concerning the business monthly revenue, eight out of the 12 respondents reported on this. As Figure 6 shows, this ranged from USD 3,000 to USD 25,000, although the majority of the eight respondents (75%) reported this to be lower than USD 10,000.

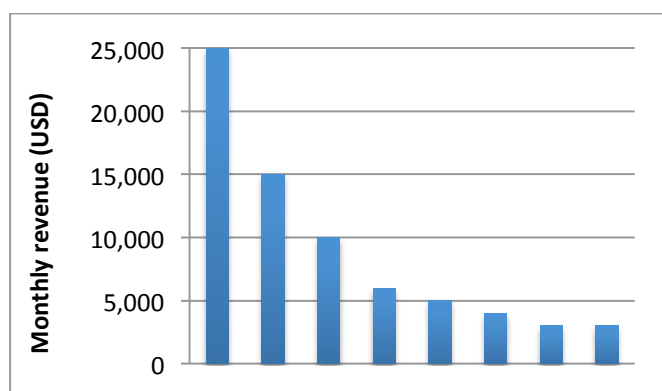


Figure 6: Business monthly revenue

3.1.2 NGOs and local producers of toilet products

Characteristics of the NGO leaders

A total of five leaders of local NGOs who were producing toilet pans and/or had partnered with BESIK, Plan or WaterAid in sanitation marketing initiatives were interviewed. The leaders were all male. Four were in the age bracket of 35-45 years old, and one was in the age bracket of 45-55 years old. Concerning the highest education level attained, four of these had attained university bachelor degrees, and one had completed secondary school. Four out of the five interviewees had previous working experience before starting or joining their NGOs. For three out of the four interviewees who had previous working experience, this experience was within the NGO sector. Only one respondent had previous working experience as a business. This was the case of the leader of an NGO who in 2004 started as a business producing and selling bamboo furniture, and in 2012, when the organisation range of activities expanded to contracting services for international NGOs, registered as an NGO.



Figure 7: Locally produced toilet pan by a local NGO

Characteristics of the NGOs

Products and services provided

All five NGOs had been trained on how to produce toilet pans as part of Community-Led Total Sanitation (CLTS) and sanitation marketing activities they were involved in with their international NGO partners (Figure 7). However, only three of these had proactively engaged in selling these products as a business activity, two of which had established formally registered businesses separate to the NGO for this purpose.

One of these three businesses only one sold toilet pans and did not offer toilet installation services apart from connecting the toilet bowl to the pipe transporting the waste to the septic tank. In contrast, the two other businesses offered a broader range of toilet components than the toilet pan such as the pit rings, and the superstructure, as well as full installation services. The toilet products offered by these two businesses were based on the Sen Diak model developed by International Development Enterprises (IDE) (Figure 8).



Figure 8: Brochure illustrating the three different Sen Diak toilet models (adapted from Empreza Diak, 2014)

Years of operation, size and staff arrangements

All five NGOs had been operating for nine to 15 years. Three of the NGOs had a fixed number staff (five to six staff) with permanent salaries, whereas the other two assembled teams (of five to eight people) depending on the availability of contracting services to INGOs: “Roles are not permanent with fixed salaries as these are dependent on the availability of contract projects”. These teams are assembled in the following manner: “The team is put together with the structure specified in the constitution once there is a project. We can also contract engineers if needed but these are not included in the organisation's structure specified in its constitution”.

As mentioned above, there were three NGOs who had engaged in selling sanitation products as a business activity, two of which established formally registered businesses separate to the NGO for this purpose. These businesses were formed in 2011 and had five staff, however they stopped operating on the following years due to lack of enough sales to maintain the business running.

The only NGO who remained active as a retailer of locally produced toilet pans had two staff dedicated to that activity, although this retailer focused largely on the production and selling of bamboo furniture, the core business activity of this NGO rather than toilet pan production.

Amount of starting investment and monthly revenue

NGOs who had engaged in providing sanitation products and/or services reported that they had been fully supported by the INGOs who they were partners for the starting investment of this business activity. Support included technical training, the moulds for the toilet pan and the septic tank rings, promotional materials, and funding for the production materials.

A monthly revenue of USD 40 - USD 60 was reported by the NGO who was still active as a sanitation business, although this represented a very small proportion of the NGO's income generation activities, and contrasted to a much larger monthly revenue of USD 400 - USD 500 from their bamboo furniture business.

As mentioned above, due to lack of sufficient sales, two of these businesses stopped operating and the number of products sold was not able to recover the initial investment.

3.2 ENTREPRENEURSHIP AND ENTREPRENEURIAL TRAITS

This section discusses evidence of business skills and expertise amongst respondents as well as the presence of five typical entrepreneurial traits described by Ernst (2012): risk-taking propensity, innovativeness, need for achievement, need for independence and proactiveness.

3.2.1 Retailers of construction materials

Retailers relied predominantly on ad-hoc and rudimentary approaches to business management and marketing. This indicates limited business expertise and reflects well the context of Timor-Leste's private sector development where a general lack of business skills still prevails, and many of the business support functions are still missing (Murta and Willetts 2014b). A strong ‘need for achievement’ was evident amongst all respondents however, and 33% of the respondents demonstrated some degree of proactiveness. Evidence supporting the presence or absence of other traits was insufficient to draw strong conclusions. Further details concerning business approaches and entrepreneurial traits are described below.

Basic approaches to business marketing were reflected for example in the strategies retailers used to attract sales, which were largely based on the provision of polite and friendly services to customers and price manipulation according to competing retailers: “If the others reduce the price I'll

also have to reduce the price". Other reported strategies included, free delivery of products or as a paid service and discounts for wholesale quantities, although these were only offered by 33% of respondents. The majority of the respondents (75%) also offered installment payments, although this was limited to people known to have an income generation activity and hence had the financial capacity to pay the debt, such as public servants or contractors.

Further, the majority of the respondents (at least 83%) relied mainly on direct selling and word-of-mouth to promote the business and considered other marketing methods unnecessary, as highlighted by one respondent: *"There is no need, people know we are here"*. Only three retailers had advertised their businesses in the radio or the newspaper. These included the Dili based wholesaler, who had also advertised the business through billboards, and two retailers located in Baucau and Liquica.

Rudimentary entrepreneurial strategies were also evident in the respondents' predominant focus in responding to demand expressed by customers, rather than generating demand or tapping into potential demand for new products. When asked how they decided on what products to sell at their shop, the majority of the respondents (75%) said that it was based on demand. For example, one respondent noted: *"The idea of new products comes from clients, what they order."* Another added: *"People ask 'Do you have this? Do you have that?' and we keep note of orders and when we see there is enough demand we orders the products"*.

Recruitment approaches were also largely informal. More than 80% used word-of-mouth and in most cases (at least 75%) some their staff were family members or friends.

The use of manual systems for stock control was common across all retailers and poor record keeping of sales was evident. Most of the respondents who sold toilet pans (75%) reported that demand for this product had been increasing, however hesitated in answering when asked how many they sold per month on average. Poor recording systems and practices are also highlighted by Empreza Diak (2014).

In terms of entrepreneurial traits, all retailers demonstrated a strong 'need for achievement'. All expressed a strong desire to grow their business and to increase the type and amount of material construction products available at their shops.

Further, a small proportion of respondents (33%) demonstrated a more sophisticated business approach and a degree of proactiveness (a key entrepreneurial trait) in managing their businesses. This was the case for example of the Dili based wholesaler as well as of three district-based retailers. For example, one respondent demonstrated a thoughtful approach to generating demand by creating opportunities for clients to engage with new products: *"We look at areas that need and see what products are needed and in demand. We have some products for display and demonstration at our shop. We also have a sales person to demonstrate to people the products, this is done when the trucks go around then they can promote and sell the products"*. Another respondent also showed proactiveness in his efforts to plan an investment in a computerised stock management system. Yet another one also demonstrated proactiveness through the importance they placed on customer feedback to improve the business, even though this was done informally: *"When we don't understand we ask client about how we should improve so they can help us to improve"*.

Evidence related to risk-taking propensity suggests this entrepreneurial trait was not present in most cases, seen particularly with regard to accessing credit. A strong aversion to bank loans was found amongst respondents. All interviewees had relied on personal or family savings to invest in the business and none had taken loans from a bank. Only one respondent, a female business owner, had taken a loan from a financial institution focused on female entrepreneurs. Some respondents claimed their lack of interest in bank loans was due to high interest rates or difficulties in meeting the loan criteria. According to Murta and Willetts (2014b), businesses' access to credit remains a broader challenge within the private sector in general. However, aversion to loans can also be influenced by a tendency for risk avoidance, for example, one

respondent noted: *“If we get a loan from the bank and if something goes wrong the risk will be on us. We prefer to only use personal savings”*.

3.2.2 NGOs and local producers of toilet products

Limited business expertise and business risk taking experience was evident amongst the NGOs interviewed, although some entrepreneurial traits such as proactiveness and need for achievement traits were evident in some cases.

As mentioned in Section 3.1.2, with one exception, all leaders of the NGOs interviewed did not have experience in running a business and their history of employment experience was predominantly within the NGO sector. Although it does not necessarily follow, it is possible that the lack of business experience amongst local NGOs may also be associated with limited entrepreneurial skills to succeed as sanitation business (or to support these types of businesses). Murta and Willetts (2014b) noted such limitations, observing of the limited business experience in the country’s Civil Society Organisations (CSO) sector. This has implications to the entrepreneurial ability of not only local NGOs but also of INGOs to effectively supporting local NGOs.

Very little or no risk at all was carried by local NGOs who had started sanitation enterprises. As mentioned earlier in Section 3.1.2, very little or no initial investment was required from these NGOs to start this business activity as their partner INGOs largely supported this. Likewise, financial investment for the bamboo business operated by one of the NGOs was largely supported by donor or government agencies: *“We never took loans. There was always money available from other sources. Many donors support us. Because materials and equipment we already have that...previously we thought of getting a loan but suddenly we got support from government and donors, so we ended up not needing it”*. This approach contrasts with the approach followed by some CSOs in Indonesia in supporting market based development initiatives. Murta and Willetts (2014a) note that some of these CSOs defended that to ensure business ownership and long-term sustainability of market-based solutions, entrepreneurs need to embrace risk and sacrifice their own money to start a business, and should not be overly supported as this would render them reliant on the CSO.

Some NGO leaders demonstrated certain entrepreneurial traits, such as need for achievement and proactiveness. For example, one respondent had been proactive in seeking assistance from a development agency and a micro-finance institution to facilitate access to finance to their potential customers. This same respondent had also been proactive in exploring alternatives to address affordability issues of its products: *“There is a local company doing research on using local soil to make concrete blocks, we talked with them. Concrete blocks cost USD 0.60 to make but blocks made using local soil is USD 0.15”*. A need for achievement was also clear. Despite the limited success of his sanitation business, he persisted in exploring a way to succeed as well as following up on other business opportunities: *“I’m still trying to figure out a way. In the future I’m thinking of linking toilet products to cattle. I bring the toilet and then people can bring the cattle to the ‘matadouro’... I’m also thinking of other business activities such as local chicken production. Importing chicken will end one day and it doesn’t work in rural areas because there is no refrigeration”*. As explained by the respondent, engaging in business activities was expected to supplement the income of the NGO and make it less dependent on external funding from INGOs.

The leader of the NGO associated to the bamboo furniture business also demonstrated need for achievement and a strong inclination towards leading business activities as a form of income generation: *“During my studies at school I was very interested in running a business, and was thinking of a business in bamboo”*. He also demonstrated proactiveness in his focus on improving his and his staff skills as well as expanding the business and the diversity of bamboo products he: *“During the Indonesian occupation I was in Indonesia and learned how to work with bamboo. I went back there to improve my skills ... I only knew two models of bamboo furniture but when I went [back] to Indonesia I*

learnt there are 88 models. Now we have multi-functions, we can do different models, we have people ready to produce different models, we can do it”.

This contrasts with the passive attitude of another NGO who noted: *“We are just following the INGO idea, it's based on their program. We just follow them, it's coming from them. I can't answer if it's going to work or not. I don't know. The program is coming from them. After the training, promotion of products in communities will follow to encourage people to buy the product”.*

3.3 PRO-SOCIAL TRAITS

Another characteristic presented by Ernst (2012) in addition to the entrepreneurial traits discussed above, is a pro-social personality, which is typically present in a sub-group of entrepreneurs – social entrepreneurs. In discussions about motivations that affect the decisions and behaviour of individuals in organisations, Clark and Wilson (1961) and Wilson (1989) also discuss purposive motivations, which are associated to intangible rewards such as a sense of group mission and link to the pro-social personality described by Ernst (2012).

The following sections discuss the presence of pro-social traits and motivations amongst retailers of construction materials and local NGOs interviewed.

3.3.1 Retailers of construction materials

The presence of a specific pro-social business drive to serve the poor was not evident amongst the majority of retailers (92%), although some (33%) expressed a sense of care for their communities and for fairness which indicates a degree of pro-social awareness. Only one respondent demonstrated pro-social behaviour by offering them small discounts to poorer customers: *“When I'm running my business I provide a small discount for poor people”.*

Credit or payment by instalments was not offered as a form of support for poorer customers. Murta & Willetts (2014a) report that in Indonesia some sanitation entrepreneurs demonstrated pro-social traits through offering lenient instalment payment terms and conditions, and being flexible with late repayments from their poorer customers. This was not observed amongst the retailers interviewed. Although the majority (75%) offered instalment payments, as mentioned in Section 3.3.1, this was only made available to people they knew had an income generation activity and hence had the financial capacity to pay the debt, such as public servants or contractors that had won a tender. For example, one retailer noted: *“We only offer credit to people we know well, people we trust are able to pay like public servants and contractors. But community people it's rare.”* Another also added: *“We only offered to government officials because there is a guarantee that they have a monthly salary and are able to payback”.*

However it is important to note that the lack of less stringent payment options targeted for poorer customers may be due to challenges in maintaining cash-flow and lack of easy legal accountability mechanisms to reclaim money from those to whom it is lent, rather than from a specific lack of pro-social traits. For example, one respondent noted: *“instalment payments are a problem because of cashflow, and with money or without still have to pay taxes and other operational costs.”* Another respondent also added: *“I've heard some shops who offered credit but up until now they haven't seen their money back. There is no legal protection of the lender through for example a contract”.*

A certain level of pro-social awareness was demonstrated by three respondents. Two of these respondents demonstrated this by noting that their retail business provided something beneficial to their local communities and expressing a sense of service to others. For example, one of these two respondents noted: *“I don't want people to have to go to Dili to buy anything. I want them to have everything here. People spend a lot of money with transport going around buying things. So it's better and easier for them to come to one place”.* Another respondent also demonstrated a degree of pro-social awareness by expressing a sense of fairness and care for equal distribution of business

opportunities within his community: *"I don't like to sell new products because I should leave the business opportunity for other people. I may be killing other people's business if I do that".*

3.3.2 NGOs and local producers of toilet products

In contrast to the retailers of construction materials, a pro-social motivation to improve the health of communities and address the needs of the poor was clear amongst the majority of the NGO leaders (80%) and strongly underpinned their engagement in the provision of sanitation products and services. For example one respondent noted: *"I have an interest in helping the community to achieve health, sanitation and hygiene. Based on our field observation communities don't know how to make latrines and it's a long way to go to the town. So we thought we could help and provide cheap latrines".*

This is not surprising as the nature of the work of NGOs in general is pro-social. Further, as explained earlier in Section 3.2.2, the history of employment of almost all NGO leaders interviewed was predominantly within the NGO sector, therefore their working experience had been largely underpinned by such types of motivations.

However, contrast was found amongst NGOs concerning their pro-social purpose. Some NGOs were able to clearly articulate their pro-social vision and mission, and the process used to develop and review these. Others, however, were more vague in articulating this and appeared to be more strongly driven by INGO contracting opportunities rather than a clear and well-defined pro-social purpose. The latter coincided with NGOs described earlier in Section 3.1.2 who didn't have permanent roles with fixed salaries, and instead assembled teams based on the availability of contracting projects. This further emphasises these NGOs' focus in responding to INGO contracting opportunities rather than on a pro-social mission, as compared to the other NGOs who had permanent roles with fixed salaries. This issue is also highlighted by Murta and Willetts (2014a) who note that the line between some local NGOs and private contractors is often blurred as some local NGOs operate as providers to donors or INGOs and government in WASH projects.

3.4 KEY BUSINESS CHALLENGES

This section discusses the challenges faced by the different types of respondents interviewed. It is important to note however that this study had a greater focus in exploring the businesses challenges of retailers of construction materials than of the ones of NGO driven sanitation businesses, as these had already been well covered in a preceding study (Murta and Willetts 2014b).

Respondents were asked an open-ended question about the key challenges they faced, and prompted regarding different categories of challenges. These included: access to market challenges, human resource challenges, operational challenges, finance challenges and government and regulations challenges.

3.4.1 Retailers of construction materials

Challenges reported by the retailers included all categories of challenges noted above, except government and regulation related challenges. Access to market was the most reported category of challenges and finance was the least (see Figure 9).

It's important to note however that when asked about business challenges, of the businesses who reported on challenges, almost all respondents (83%) took time to provide a response and had to be prompted to reveal some of the weaknesses they face. This suggested a high level of ease with the current state of the business and its success. The fact that all respondents said that it was easy to maintain a profit from their retail businesses also supports this supposition. Further, three

respondents said they didn't face any challenges. For example one of these respondents noted that they "never faced any challenges, only small issues but are able to easily resolve them".

As Figure 9 shows, 60% of the challenges faced by the retailers that reported on this were related to access to market, in particular due to increased competition as noted by one respondent: "There is a lot of competition now. When we started in 1999 there were only three construction shops. Now there are six". Another respondent also noted the challenge of maintaining a balance between cost and quality and beat competition at the same time: "There is a lot of competition, but clients know we sell good quality. If product is too expensive then there is no demand, so need to have a balance between cost and quality".

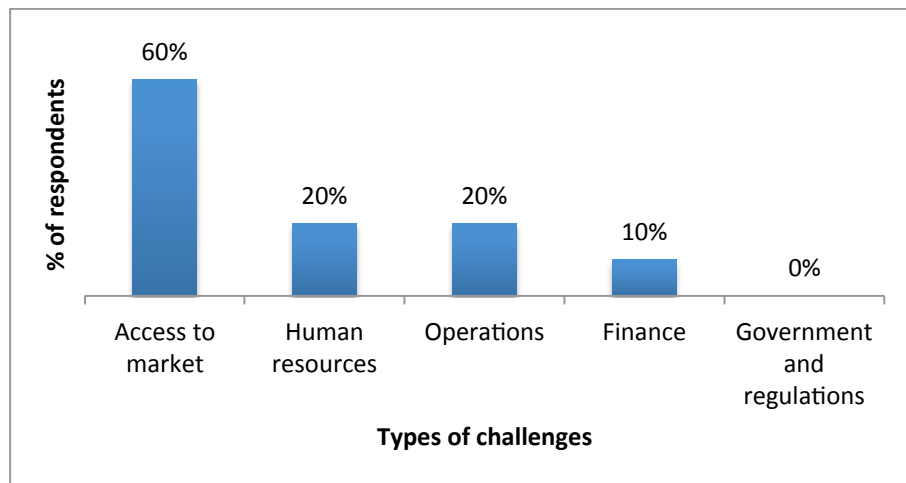


Figure 9: Types of challenges commonly noted by the construction material retailers

A challenge concerning 'access to market' was also highlighted in responses concerning business growth. Although more than half (58%) of the businesses reported that their business profit had increased over the past two years, 33% claimed that it had remained stable or decreased mainly due to increased competition, as highlighted by one respondent: "we still make profit but it has decreased due to competition. A lot of shops have opened in the last 2 years. Before, there were only 2 shops".

Human resource challenges included finding staff with the right skills as well as the time required to monitor staff performance on a daily basis: "I need to monitor staff's performance, if they are producing the right quantity [of cement], that's a challenge, it requires time".

Reported operational challenges included "water and electricity cuts" which affected artisan operations linked to the retail business such as brick production and welding. Another respondent also mentioned the challenges associated to using manual systems to control the stock: "our weakness is the control of the items which at the moment we use manual systems to control the items".

Financial challenges were mentioned by only one respondent: "The biggest challenge is capital. If I have the money, I can buy the materials I need to sell". This retailer, who also operated a construction contracting business, was considering different options to address this challenge. One of the options was to wait for enough profit to be made from the retailing and construction contracting businesses and the other was to take a loan from a bank: "Apart from selling products we also do contract work, so we put together the profit from these two activities and wait until there is enough to buy construction materials. So it depends on the next contract we get. We're also considering getting a loan from the bank to buy construction materials for the shop of around USD\$50,000."

Other respondents however, showed less interest in taking bank loans. In response to a question concerning sources of capital investment for the business, four respondents claimed their lack of interest in bank loans which was due to high interest rates or difficulties in meeting the loan criteria. For example, one respondent noted his perception of high-risk in taking out a loan: "I'm

afraid to take loans because of the interest rate, it's too high. I prefer to rely on slow business growth and my own savings. I'm not taking that risk." Another respondent also noted that he had been discouraged by *"the process of getting organised for the loan"*, which *"takes a long time"*.

3.4.2 NGOs and local producers of toilet products

As mentioned earlier, of the five NGOs interviewed, only three NGOs had engaged in selling sanitation products as a business activity to date. Challenges reported by these NGOs were all related to access to market. This included low demand for their products and services, in part due to a legacy of toilet subsidies, which left an expectation of free toilets from communities.

Although not actually experienced to date, concerns with foreseen market saturation challenges were also expressed by one NGO: *"People don't need a toilet all the time. Only after ten years when it's damaged and needs to be replaced"*. According to Mulumba et al (2014), this is a common issue affecting the sustainability of sanitation enterprises. As sanitation coverage increases and reaches a saturation level, demand for their products and services decreases and requires enterprises to expand to new geographic locations and/or provide services beyond first-time access. Fuertes et al (2008) also highlight the gap between enterprises' often short-term objectives and the time required for sanitation behaviour change, and how this creates a challenge for keeping these enterprises interested in sanitation as a business.

The lack of affordable products of equivalent quality to imported products was also perceived as contributing to low demand. For example, one NGO was of the view that investment in product development was needed to improve the quality and affordability of locally produced toilet pans: *"people prefer other products than the ones we are offering so there is need to do product development to make our products nicer, smoother, more attractive, a finer product"*. Another NGO was of the view that to address demand issues, improvements were also needed in the variety of products offered besides the quality: *"If we talk about the success of a business, we need to increase the quality and the models...having different models will increase sales...if we want to open branches we need to improve these things. We could have different models in different places, in Dili and Maliana for example"*.

One NGO considered that improving the quality of locally produced toilets was key to be able to compete with retailers selling imported materials in reaching wealthier customers in particular: *"If we don't get the quality right it's going to be a problem. The community is looking for the cheapest products, not quality. But public servants buy the expensive ones. If Timor-Leste produces the best quality everyone will come to me and then we can compete with shops. For example, one Timorese went to Japan to learn how to make traditional stoves, it's a success now because the quality is very high, we'd like to do the same with toilets, same quality as shops, then it can be very successful"*. Although this doesn't exclude an interest in reaching the poor, it suggests a stronger focus in accessing wealthier customers. However, this approach may form part of a cross-subsidy business model that enables these enterprises to practice lower prices for poorer customers and/or tolerate low profit margin from these.

Further, there appeared to be different expectations around who should drive product development. For example, it was clear that one NGO expected INGOs or donor organisations to play a strong role in assisting with product development: *"We asked our donors to provide more training to, for example, upgrade the models of latrines. For example, in Indonesia donors identified good models of latrines. One of our staff could go there and learn. Otherwise, all around it will be the same model"*. In contrast, as mentioned earlier in Section 3.2.2, there was one NGO who had taken a proactive approach in seeking solutions to address product affordability, which suggests that they didn't expect product development to be driven solely by external agencies.

Additional access to market challenges and other challenges including finance, human resources and government support related challenges for NGOs and local producers of toilet products are discussed by Murta and Willetts (2014b). Concerning access to market challenges, Murta and Willetts (2014b) add that partnerships between government and businesses can be associated with

government corruption, hence INGOs and local producers of toilet products cannot rely on local government institutions to promote their products and link them to customers. In Indonesia, this type of partnerships was credited for playing a key role in the success of some sanitation entrepreneurs in East Java. In addition to helping sanitation entrepreneurs access customers, village heads helped facilitate customers in accessing finance through community traditional lending mechanisms (Ikeda 2012). In turn, concerning finance, human resources and government support challenges, Murta and Willetts (2014b) highlight the lack of affordable loans and business training opportunities, as government-led private sector development initiatives are not geared towards small-scale sanitation businesses.

3.5 POTENTIAL FOR FUTURE ROLES IN SANITATION MARKETING

Development agencies which are considering the potential role construction material shops could play in selling and distributing sanitation 'packages', including locally produced packages, to boost the supply of durable toilets to rural communities. Drawing on the characteristics and challenges of both the retailers and local NGOs discussed earlier, this section discusses the potential opportunities and barriers of these different organisations playing an effective role in sanitation marketing, as well as the potential for them to play complementary roles.

3.5.1 Retailers of construction materials

There are potential advantages as well as barriers to construction material retailers playing an effective role in supporting access to sanitation products and services beyond the retail of imported toilet pans.

Concerning potential advantages, as current players in the supply chain of sanitation products, retailers can draw on their business assets and pre-existent supply chain networks and systems to access cheaper materials and reduce investment and operational costs. Assets retailers have access to that can help reduce costs include retail and storage facilities, vehicles. For example, all retailers interviewed owned at least one truck used to transport products from their suppliers and provide customer delivery services in some cases. The ability to draw on this asset has potential to facilitate access to customers located in more remote areas and contrasts with a situation reported by one NGO led sanitation business that had to reject orders because of lack of transport capacity: *"In Bobonaro we did promotion and people were interested. They made orders but in the end we rejected because we don't have the capacity in terms of transport and distance"*.

Some retailers may also be able to draw on their pre-existing marketing systems to promote sanitation products and access customers. Although the majority of the retailers (at least 83%) relied on direct selling and word-of-mouth to promote their business, some were more proactive in this regard. For example, one retailer's approach to promoting new products was to have samples of these for display at the shop and available to his truck drivers who acted as sale agents: *"We have some products for demonstration at our shop. We have a sales person to demonstrate to people the products. This is done by our truck drivers. When they go around they can promote and sell"*. Similar types of approaches could also be used to promote sanitation products.

Large-scale retailers have human resources to support roles in manufacturing and installation of toilets. For example, as mentioned earlier in Section 3.1.1, some retailers comprised a large set of operations such as concrete production, welding, as well as maintenance services linked to some products. These retailers tended to manage a larger number of staff performing a broad range of roles and skills. Thus they may have the capacity and skills to supervise and manage a broader range of services, such as manufacturing and installation of toilets, than other retailers. Further, these retailers may also be able to draw on staff with the necessary skills to perform these roles. Alternatively they could also draw on local masons available.

Lastly, the broad range of products sold by these businesses in addition to construction materials suggests a degree of flexibility in responding to expressed demand for new products, which can be a good starting point for developing agencies approaching retailers for experimentation with sanitation products.

However, various barriers to retailers playing roles in marketing and installation were also evident. These related to business owners' perceptions of low demand for sanitation, their hesitancy to consider providing 'services' as well as products and the limited prevalence of pro-social characteristics. These barriers are described further below.

Although most of the retailers who sold toilet pans reported that demand for this product had increased over the years, it was clear that toilet products still represented a marginal part of the retailers main line of business. Empreza Diak (2014) reported on a lack of awareness of the potential market for sanitation products amongst retailers, which could limit their interest in playing a role in sanitation marketing beyond the retail of imported sanitation products. This finding was also confirmed in our research.

None of the respondents had ever considered linking provision of installation services to sanitation products before. This was mainly because these services had not been recognised as a business opportunity in general, or had been regarded as outside their core business. Although some respondents demonstrated some openness to such considerations in the future, the majority were hesitant about this. They either didn't perceive there was demand for such services or considered it outside of their core business activity and hence unworthy. For example, one retailer noted: *"We don't see the demand for this [toilet installation services]. Most people here know how to build toilets or know someone who does"*. Another respondent added: *"We don't really know about this. We only focus on selling products"*. Two respondents were also hesitant of taking job or business opportunities from others within their communities or within their staff: *"Many people know how to install toilets here. If we offer this service [toilet installation], we will kill business opportunities for them"*.

The lack of a pro-social business drive amongst the majority of these businesses discussed earlier in Section 3.3.1 could be expected to limit retailers' interest in playing a role in pro-actively pursuing opportunities to support sanitation product and service provision. Further, with the absence of such motivations, retailers may not be dedicated enough to persist through the likely challenges in reaching markets in more remote, rural communities, unless there are other external incentives for them to do so.

Further, even in the presence of pro-social motivations or other types of incentives, retailers may not have the business skills to take such a proactive approach or the capacity to expand to the rural sanitation market. As mentioned earlier, retailers relied largely on rudimentary business strategies focused in feeding existing demand, rather than following a proactive approach aimed at generating demand or tapping into potential demand for new products. As Empreza Diak (2014, p.56) also noted, they have little experience in "promotion, product development, sales and distribution to rural areas."

Touboul and Roulet (2011) highlight that the way entrepreneurs are approached will determine their willingness to invest in pro-social initiatives. The authors explain that lack of pro-social drive, a focus on short-term profit, and limited of access to capital is typical of entrepreneurs in developing countries, and limits their willingness to invest in pro-social initiatives. Therefore, approaching entrepreneurs to engage in such type of initiatives requires raising their awareness of the potential social impact of their business, proving them the business viability of pro-social businesses, as well as providing them with the know-how to implement such strategies (Touboul and Roulet 2011). This highlights that development partners or CSOs approaching retailers to play a role in sanitation marketing should focus in raising their awareness of the potential market for sanitation products and potential profit from that, as well as the impact their businesses could have towards health and socio-economic benefits through increasing sanitation coverage. They may also need to support the retailers in business areas where these are typically weak such as

marketing and promotion, access to market information such as customer preferences, financial management, and access to capital. Technical support may also be needed if retailers were to engage in production or manufacturing of sanitation products or providing installation services. Support to retailers could be tailored to each retailer's current strengths and weaknesses as regards entrepreneurial traits and business skills.

Further, to attract retailers to engage in sanitation marketing, CSOs may also need to tap into other types of motivations beyond profit and pro-social motivations to develop incentives. These include intangible rewards described by Clark and Wilson (1961) and Wilson (1989), such as, for example, status (e.g. prestige and recognition) and solidary motivations (e.g. socialising and camaraderie).

3.5.2 NGOs and local producers of toilet products

The formation of sanitation enterprises linked to local NGOs is relatively recent and largely initiated through external development agencies experimenting with solutions to sustainability issues in the WASH sector. The challenges faced by these enterprises discussed in Section 3.4.2 and explored in a preceding study (Murta and Willetts 2014b), highlight their fragility in the absence of external support from INGOs, and raise questions about their future viability.

There is however, considerable complementarity in the outlook, motivations and experience of local NGOs as opposed to retailers. For example, the familiarity of these NGOs with the WASH sector means they are likely to have a greater understanding of the size of the potential sanitation market in rural areas than retailers. Further often these NGOs are involved in Community Led Total Sanitation (CLTS) work and other types of community development projects, which can provide them with easier access to rural customers than retailers. The stronger pro-social drive found amongst some NGOs compared to retailers also presents an opportunity as it indicates these may have higher motivation to overcome challenges in reaching the poor and/or market saturation issues than retailers.

NGOs' experience in the WASH sector and links with rural communities also provides opportunity for these organisations to play other roles beyond manufacturing and provision of sanitation products and services. These include support roles to sanitation enterprises such as promotion, provision of information about the needs and preferences of the market, product development and innovation, technical training on toilet production, facilitation of community bulk purchases and traditional lending mechanisms, and linking customers to micro-credit institutions. A preference for this type of support roles was expressed by one NGO who was hesitant about taking businesses opportunities away from rural communities or competing with other sanitation entrepreneurs in these: *"We're also interested in investing in this type of sector too...we try not to have competition in the community...maybe we could have a role in doing marketing in Dili"*.

Concerning product development and innovation, although NGOs are likely to be better placed to lead this role than district retailers, it is important that business perspectives are also brought in in these processes. This was emphasised by a reviewer of this report working in this sector who noted that NGOs were skilled in exploring products from local materials accepted by communities, but that are not as suitable for mass production and sales.

Another possible role for NGOs is to facilitate partnerships between retailers, masons, and community leaders, who can provide access to community networks and operate as sale agents. NGOs have already been playing a role in promotion of toilet products and sanitation entrepreneurs, however in this role NGOs are not responsible for sales in the direct way that a sales agent employed by a business would be, which limits their effectiveness in this role

3.6 DISCUSSION, CONCLUSIONS AND IMPLICATIONS

In efforts to address sustainability issues in the sanitation sector, development agencies have continuously experimented with different solutions including supporting the formation of sanitation enterprises by pre-existing local NGOs. Such experiments have not yet led to robust businesses capable of developing, marketing, selling and transporting sanitation products and services to rural communities. More recently, development agencies are considering the potential role of construction material shops situated in district capitals to promote, sell and distribute sanitation 'packages', including locally produced packages. This research examined the motivators, interests and business skills of both retailers and local NGOs, and as such, provides insight into the risks and viability of the proposed roles, and highlights key considerations for how to improve the 'supply-side' for sanitation in Timor-Leste.

There is a range of possible roles for district construction materials retailers in marketing sanitation beyond the current role of retail of imported sanitation products, including any or a combination of the following:

- **Manufacturing/production** of toilet products and/or toilet packages
- **Retail** of locally produced toilet products and/or toilet packages
- **Installation** services
- **Promotion** of toilet products and/or services

We found potential opportunities as well as barriers to these retailers being effective in any of these roles. Potential opportunities included building on retailers' existing business systems, networks and resources to reduce costs and access customers. Further, the broad range of products sold by these businesses (beyond construction materials) suggested a degree of flexibility in responding to expressed demand for new products. This could be a good starting point for development partners to approach these businesses for experimentation with sanitation products. However, we also observed a lack of understanding of the potential market for sanitation products amongst these businesses, which is likely to pose a limitation in their interest in engaging in this space. Other potential barriers include their limited business skills, limited proactiveness and the absence of a pro-social business drive to reach the poor, who are located in more rural communities.

In turn, local NGOs' experience in the WASH sector and pre-existing links with rural communities provides opportunity for them to extend their existing roles. These include **supporting roles** such as provision of information about the needs and preferences of the market, product development and innovation, technical training on toilet production, facilitation of community bulk purchases and traditional lending mechanisms, linking customers to micro-credit institutions, and facilitating partnerships between retailers, masons, and community leaders.

In comparing the different roles retailers and local NGOs could play, it was found that certain traits that pose challenges to one, contrast as opportunities to the other, which raises the possibility of complementary roles, and shared responsibility arrangements between two actors. For example, given their previous WASH work in rural areas, local NGOs are likely to have a greater understanding of the sanitation market in rural areas than retailers, as well as easier access to customers within rural communities. Further, the stronger pro-social drive found amongst these points to higher likelihood of these having a higher motivation to overcome challenges in reaching the poor or market saturation issues than retailers.

However, it is important not to over-simplify the picture, and to note that the above comparison between retailers and local NGOs is based on dominant characteristics observed within each of these groups. In reality, nuances were found within each of these groups regarding certain

characteristics. For example, not all NGOs had a completely pro-social vision and mission driving their work. Some NGOs appeared to have a greater focus in responding to INGO contracting opportunities rather than on a pro-social mission. Likewise, some retailers were exceptions to the majority, as they demonstrated pro-social awareness by expressing a satisfaction in serving their communities and a sense of fairness and care for equal distribution of business opportunities within their communities.

The presence of these nuances emphasises the importance of assessing potential organisations and their respective proposed roles on a case-by-case basis. Their entrepreneurial capacity and traits, pro-social motivations, and challenges need to be assessed and matched to appropriate roles. Business model considerations should consider these assessments and allow for flexible combinations of different roles.

Further, it should be highlighted that some of the challenges experienced to date by NGO led sanitation businesses such as the lack of affordable products tailored to the rural market, can be transversal to any actor, and therefore are likely to be experienced by retailers as well. Hence, attention to these challenges is required and should not be overlooked or assumed to be solved by approaching retailers to play a role in sanitation marketing.

Lastly, attention is also required to the way retailers are approached. This should focus in raising retailers' awareness of the potential market for sanitation products and potential profit from that, as well as the impact their businesses could have towards health and socio-economic outcomes. They may also need to provide tailored support depending on the each retailer's entrepreneurial characteristics and roles their business would be expected to play in marketing sanitation. These may include technical training, marketing and promotion support, access to market information such as customer preferences, financial management support, and access to capital, and general business management mentoring. Further, development partners may also need to tap into other types of motivations within retailers beyond profit and pro-social motivations to develop incentives such as for example status (e.g. prestige and recognition) and solidary motivations (e.g. socialising and camaraderie).

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