

Rapid Assessment of Sanitation Demand and Supply in Rural Bangladesh

Recommendations for strengthening the supply chain for rural sanitation



BRAC WASH (2006-2015) IS A GLOBALLY SIGNIFICANT PROGRAMME ACHIEVING LASTING BEHAVIOUR CHANGE AND TRANSFORMING HYGIENE, SANITATION AND WATER SERVICES THROUGH SUSTAINED INTERACTION WITH 42% OF THE TOTAL POPULATION OF BANGLADESH, AN EQUITY-BASED APPROACH AND A WILLINGNESS TO ADAPT AND INNOVATE.

INTRODUCTION

The long-term viability of sanitation producers in Bangladesh depends on their ability to meet the demands of consumers who intend to construct, improve or replace their toilets; providing flexible design and price options while also diversifying their business portfolios.

Strengthening the supply chain for sanitation products and services in rural Bangladesh requires: working with potentially viable rural sanitation producers, tailored capacity building, business diversification, quality assurance, access to financing, guidance on sanitation options and fair prices.

CALL FOR ACTION: IDENTIFYING SUSTAINABLE BUSINESS MODELS FOR RURAL SANITATION

The BRAC WASH programme aims to identify sustainable business models and strengthen sustainable entrepreneurship for rural sanitation, by linking community-led demand to an effective supply of appropriate and affordable products and services including low-cost sanitation technologies.

Assessing sanitation demand and supply

Many people, including the poor, are willing to pay for good sanitation that will satisfy their needs and desires if these products and services are affordable, packaged and marketed appropriately, and if they are easily accessible. To understand current and potential demand and supply for sanitation in rural Bangladesh, BRAC with support from IRC undertook a rapid assessment in eight upazilas in Bangladesh. These included flood-prone, water scarce, high water table, hilly and coastal areas and differed in terms of poverty levels, accessibility and programme interventions (BRAC WASH I and BRAC WASH II areas). The location of the selected upazilas is shown in Figure 1. In each upazila two unions were selected as shown in the Table 1.

23 informal pit emptiers (sweepers) and 35 hardware stores) were selected in the sample areas².

This briefing note summarises the main findings from the assessment. An earlier report (Baetings, Farhat Ubaid and Haque, 2014) describes the methodology for conducting a sanitation demand and supply study at scale and provides further detail on the findings.

RESEARCH FINDINGS

The rapid assessment combined consumer (demand) and market (supply) research based on the ‘marketing mix’: Price, Product, Promotion and Place. The results of the research were visualised with aid of a ‘traffic light dashboard’ to

Figure 1
Bangladesh District Map with location of research upazilas



Table 1
Research upazilas and unions

Upazila (8)	Union (16)
Akkelpur	Raikhali
	Sonamukhi
Bhanga	Algi
	Hamirdi
Dakop	Pankhali
	Sutarkhali
Durgapur	Goakandi
	Birishri
Fatikchari	Dantmara
	Sundorpur
Jamalgonj	Fenarbak
	Jamalgonj
Meghna	Boro Kanda
	Manikar Chor
Sherpur	Khanpur
	Mirzapur

For the demand side assessment, a representative sample¹ of 4,753 households living in 92 villages was taken. For the supply side assessment, 93 supply chain actors (35 rural sanitation centres,

visualise the match and/ or mismatch between supply and demand. The dashboard was designed with three traffic lights indicating different degrees of a match between supply and demand.

¹ The full report provides further details on the sampling methodology: Baetings, E., Farhat Ubaid, S. and Haque, R., 2014. *Sanitation demand and supply in Bangladesh: Rapid Assessment to identify supply chain challenges*. Dhaka: BRAC and The Hague: IRC.

² Local artisans (masons known as ‘raj mistris’) were excluded from the sample as they mainly serve the non-poor, which is not the main target group of the BRAC WASH programme.

An example of such a dashboard is provided in the figure below. The green lights show a balance between supply and demand of 75% and more: these issues require no attention. The yellow lights indicate a balance between supply and demand of between 50% and 75%: these issues

deserve attention but only after the red traffic light issues have been addressed. Finally the red lights indicate a balance between demand and supply of less than 50%: these issues require immediate attention and need to be analysed further.

DEMAND SIDE		SUPPLY SIDE
WHO are the potential customers?		WHO are the supply side actors ?
Type and quantity of potential customers / consumers		Type and quantity of supply side actors
- Hard-core poor, poor and non-poor households		- Producers, hardware stores and pit emptying services
- Households with and without toilets		
		Background and experience of key supply side actors
PLACE: Where are the customers?		PLACE: Where are the supply side actors?
Location		Location
- Distance and accessibility		- Distance and accessibility
- Appropriateness of BRAC sanitation technology		
PRODUCTS: What do they need now and in future?		PRODUCTS: What products and services are made available?
Type and volume of products and services		Type and volume of products and services
- Demand for new toilets		- Demand for new toilets
- Combined demand for new toilets and upgrades		- Combined demand for new toilets and upgrades
- Pit emptying services current demand		- Pit emptying services current demand
- Pit emptying services future demand		- Pit emptying services future demand
		Quality of available products and services
PRICE: How much can they afford?		PRICE: How much does it cost?
Ability and willingness to pay		Costs of products and services
- Ability to pay for new toilets		- Costs of a BRAC toilet
- Ability to pay for improving existing toilets		- Costs of a new pit and slab
- Ability to pay for pit emptying services		- Costs of pit emptying
- Amount willing to pay for new toilets		
- Amount willing to pay for improving existing toilets		
		PROMOTION: Do they promote their products?
		Promotion by key supply chain actors
		- Intensity of promotion activities
Do they have KNOWLEDGE to make an informed decision?		Do they have KNOWLEDGE on sanitation technology options?
Knowledge about sanitation technologies		Technical experience
- Overall judgement on customers' knowledge		
		- Suppliers' production and technical knowhow

Figure 2 Dashboard of Algi Union in Bhanga Upazila

The main assessment findings are presented below.

WHO are the customers and the supply side actors?

Of the 4,753 households surveyed, 76% had access to a toilet, either through actual ownership (60% of all households) or the use of someone else's toilet (41% of households without toilet). Some 16% of households defecated in the open and the remaining 8% of households had adopted mixed practices where they either used someone else's toilet or no toilet at all.

Hardware stores and pit emptiers were operating in all 16 unions. Toilet part producers were found in all but two unions. The 35 producers surveyed had, on average, been in business for 9.5 years and 18 of them were affiliated with the BRAC WASH programme. A quarter of all producers had not diversified their products or business portfolios and only produced toilet parts.

Locally constructed latrine (Photo by Ingeborg Krukkert/IRC)



Supply chain actors need to address the needs both of first-time buyers and repeat customers. The latter is becoming an increasingly large segment of the market as the supply of grants and loans from BRAC WASH reduces. At present toilet part producers primarily target ultra-poor and poor households. BRAC provides ultra-poor households with an in-kind grant, which covers the costs of a complete set of toilet parts for a double off-set pit. It does not, however, cover all the costs associated with installing a toilet. Poor households receive an interest free loan from BRAC, which covers part of the costs. Consequently most of the poor households opt for a single (direct) pit toilet.

Producers will need to diversify their products and range of services to attract the more affluent non-poor households and diversify their business portfolio beyond toilet parts alone in order to remain viable in the future. The research revealed both core business (e.g. construction, hardware stores, supply of raw materials) related and non-core business (e.g. agriculture, poultry and fisheries, etc.) related product and business diversification strategies.

Demand for pit emptying is expected to grow as sanitation coverage increases. Most of the pits are currently emptied by manual sweepers; however it is not clear whether they will be able to cope with future demand.

PLACE: Where are the customers and the supply side actors?

Distance to and accessibility of supply chain actors did not appear to be a problem in most sample unions. On average it took two hours for a round trip to a toilet part producer and home; the highest average of 7 hours was in Fenarbak Union. In a number of unions, the researchers found it difficult to locate manual pit emptiers, despite households claiming to have obtained pit-emptying services. As there is still a lot of shame surrounding the admission to pit emptying, the number of households that emptied their own pits may actually be remarkably higher.

PRODUCTS: What is needed and what is made available?

Eight in ten households without a toilet (79%) were interested in getting one: most associated their situation with inconvenience and lack of status. More than half (56%) of the households with a toilet were not fully satisfied with the quality of construction (durability, appearance, etc.) and/or its maintenance. Almost half of the households were considering improving (11%) or replacing (8%) their toilets, or constructing an additional toilet (30%).

Almost all of the toilets (97%) were the pour-flush variety. A quarter of households with a toilet (26%) had combined it with a bathing facility. Concrete rings are the preferred material for lining the toilet pit. On average, five concrete rings were used per toilet. The majority (61%) of the superstructures were made of durable materials. However, this figure was much higher for the non-poor, than the ultra-poor and poor (78%, 24% and 39% respectively).

The standard BRAC toilet design – a pour-flush toilet with two alternating off-set pits – is not appropriate for all geographic locations and socio-economic conditions. BRAC is currently researching and testing a range of alternative sanitation technologies to cope with water shortages, flooding and water logging. While innovation is essential in these areas, care is needed not to introduce too many different technologies.

A shortage in the supply of toilet parts was found in six unions, which is likely to hamper the rapid uptake of toilets. In nine unions an excess of supply was found which could negatively influence the sustainability or viability of the producers.

More than a third of producers (13 out of 35) produced below-standard products; non-functioning siphons and low quality pans were most common issues. Only one in four toilets met BRAC's construction quality standards.



Non-functioning water seals and the location of toilets close to a drinking water source were the main problems noted.

Small factory producing latrine components
(Photo by Ingeborg Krukkert/IRC)

When pits were emptied, 84% of the households dumped the faecal sludge in a pit near the existing pit. Only 4% of the households claimed to have reused the faecal sludge by dumping it directly on their fields, vegetable gardens or in fish cultivation ponds. BRAC is currently investigating both small-scale and large-scale faecal sludge reuse business models.

PRICE: How much can they afford and how much does it cost?

Most ultra-poor and poor households will find it difficult to construct the types of hygienic toilets promoted by BRAC without financial support. Households spent an average of Taka 6,850 (US\$ 90) on their toilet, with an average of Taka 9,900 (US\$ 130) among non-poor households. The ultra-poor spent an average Taka 1,500 (US\$ 20) on top of the subsidy received from BRAC or the Union Parishad. The amount spent on toilet construction ranged from 0 to more than Taka 13,000 (US\$ 170).

Differences in financial support provided to ultra-poor and poor households have resulted in noticeable differences in the types of toilets that they own. Standard grants and loan amounts do not reflect the actual construction costs nor the ability and willingness of ultra-poor and poor households to pay for sanitation.

The standard prices BRAC pays have been fixed since the start of the programme and do not reflect annual inflation or the geographic differences in production costs. On average BRAC pays producers some 22% less for toilet parts than other customers. To avoid market distortion and to support the establishment of viable businesses it is essential that a fair price is paid to producers.

The average cost for manual pit emptying was Taka 350 (US\$ 5) per pit (around Taka 70 (US\$ 1) per concrete pit ring). The average price quoted by pit emptiers was Taka 115 (US\$ 1.5) per concrete pit ring.

Proud owner of a hardware store with various latrine components (Photo by Ingeborg Krukkert/IRC)

PROMOTION: Are products promoted?

None of the producers carried out any marketing or promotion activities. Almost all households claimed to know where toilet parts may be obtained. However, active promotion combined with a wider product line could increase sales. Promotion becomes even more critical when producers diversify their product line and/or business portfolio.

Do they have the KNOWLEDGE to decide or to advise?

Lack of adequate knowledge or access to knowledge regarding different sanitation technologies on the part of customers and supply chain actors is one of the main challenges that came out of the research. Suppliers may know how to produce and sell toilet parts but they are not able to advise customers about different toilet options and customers have little information on which to base choices.



Recommendations and possible supply chain interventions

Insights from the rapid assessment inform the following recommendations for strengthening the rural sanitation centres.

Work with the most effective rural sanitation centres

Before engaging with new rural sanitation centres (RSCs), rapid assessments should be conducted to get a better insight in:

- 1 their quality of production; and
- 2 their overall business performance. Wherever possible well-performing entrepreneurs with long-term potential should be identified and selected.

Tailored capacity building

Capacity building support should be determined on the basis of the rapid assessments. The following training activities are to be considered:

- 1 basic training focused on the quality of production and increasing suppliers' knowledge of different toilet types; and
- 2 business skills training. Separate modules could be developed, such as:
 - promotion and marketing,
 - product development;
 - bookkeeping, costing and price setting; and
 - linking with finance institutions and preparation of loan requests.

Business diversification

No producer can be expected to survive in the long-run by only producing and selling toilet parts, since the "first-time buyers" captive market will eventually dry up as 100% sanitation is achieved. RSCs must address the needs of repeat customers as well as first-time buyers, and they should develop products and services that meet the needs of non-poor customers, who have more money and expect more choice. Business related product development, for example producing other concrete products, providing after-sales services (transportation, installation, repair services), and diversifying into new businesses should be considered for increasing the potential viability of the centres over time. The location of

point-of-sale premises is also critical for producers and will impact on their market opportunities.

Quality control

BRAC has recently developed quality standards and a rural sanitation centre certification system. The programme is to ensure that programme staff are able to apply the quality assurance and RSC certification system to all BRAC associated centres. Regular visits to RSCs should be carried out to check the quality of production and some kind of reward or recognition system should be developed for well-performing RSCs.

Financial support

Producers mentioned having limited access to finance (working capital) and excessive competition as key business constraints. The programme should facilitate linkages between RSCs and finance institutions. Alternatively, an advance payment at the time of placing an order will significantly reduce the administrative burden on the BRAC WASH programme and will provide the RSC with working capital.

Sanitation options catalogue

A simple sanitation options manual or informed choice catalogue should be developed which provides detailed information on a range of toilet options to be used by programme staff and RSCs to inform potential customers. Programme staff and the RSCs will require training on the use of such a catalogue.

Realistic price setting

To avoid market distortion and to support the establishment of viable businesses, BRAC should pay fair market prices for toilet parts obtained from RSCs. Price setting for toilet parts must consider the variation in production costs in different parts of the country as well as general price increases as a consequence of annual rates of inflation.

Material for further reading

Baetings, E., Farhat Ubaid, S. and Haque, R., 2014. *Sanitation demand and supply in Bangladesh: Rapid assessment to identify supply chain challenges*. Dhaka: BRAC and The Hague: IRC. Available at: www.ircwash.org/resources/sanitation-demand-and-supply-rural-bangladesh

About this briefing note

Information presented in this briefing note is based on a rapid sanitation demand and supply assessment conducted by BRAC WASH with support from IRC in 2013. The assessment mapped demand for sanitation, against the capacity of supply chain actors to supply affordable products that meet consumer needs and desires, and examined current constraints and market development opportunities.

About the author

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