Shared Sanitation in Low-income Urban Settlements in Bangladesh

This policy brief presents the main results of a three-country study on Quality Indicators of Shared Sanitation (QUISS). QUISS assessed when shared sanitation is acceptable and what is needed to establish minimal acceptability requirements. Qualitative and quantitative data were collected in Ghana, Kenya and Bangladesh in 2019. This brief highlights the research findings for Bangladesh and provides recommendations for strengthening the acceptability, functionality and sustainability of Bangladesh's shared sanitation facilities in low-income urban settlements.

Key Points

- Shared toilets are the most common and viable toilet option in low-income areas in Bangladesh, used by 34% of the population (2017).
- Toilet cleanliness is highly correlated with other quality variables, implying that a clean toilet is also likely to provide safety, security, and privacy.
- To improve user satisfaction for shared facilities, toilets should be safe and secure, accessible and available (i.e. no restrictions at night) and offer adequate privacy (lockable/functional doors), be easy to clean (e.g. tiled floors), and offer functional handwashing stations.

I. Introduction

Shared sanitation[i] has immensely contributed to sanitation access, with the global percentage of users increasing from 5.4% in 2000 to 8.3% in 2017 [1]. Within Sustainable Development Goal (SDG) #6, due to the lack of quality standards, shared sanitation is only considered a "limited" solution.[ii] Quality standards and indicators are, thus, needed. Using a mixed-methods approach, QUISS identified key criteria of what constitutes "acceptable quality" shared sanitation facilities (SSF) in urban contexts.

i) Shared sanitation facilities (SSF) is taken to mean any sanitation facility that is used by more than one household, but not facilities the primary purpose of which is to serve a public area, such as a market or bus station.

ii) Limited sanitation = Improved sanitation (facilities designed to hygienically separate excreta from human contact) that is shared by two or more households.

An overview of shared sanitation in Bangladesh

In Bangladesh, 34% of the population relied on SSF at the end of 2017, particularly in low-income areas (LIAs) [2]. 64% of Bangladeshi have access to at least basic sanitation.[iii] Around 20 million people reside in Dhaka city. Over a quarter live in LIAs, with only 13% of the households having access to improved sanitation [2]. In LIAs, around 91% of the households use SSF and an average of 16 households share a single toilet [3, 4].

Policies and institutional factors relevant to shared sanitation facilities

The National Sanitation Strategy 2005 defines that every household must have access to safe and hygienic sanitation, which might be a simple pit latrine that should be designed to effectively confine faecal wastes [5]. Minimal requirements are either: (a) a separate household toilet, (b) a shared toilet between a maximum of two households or (c) a community toilet shared by ten people or less. The government recognises that sanitation-related decision making and implementation must be carried out at the local level with the central government administering funding, guidance and programme monitoring. However, the Water Supply and Sanitation (WATSAN) committee, the lowest local-government level decision-making body, lacks effective coordination and linkage between the sub-districts and their lowest local administrative level. The strengthening of accountability amongst all stakeholders, WASH service providers and users should be improved. The National Water Supply and Sanitation policy of 2014 aims at developing hygienic toilets by changing unhygienic shared toilets to individual household toilets [6]. The Pro-poor Strategy 2005 and the Cost Recovery Strategy 2010 follow the strategic directions for ensuring cross-subsidy between poor and non-poor users for sharing capital costs and operation and maintenance costs in the case of using SSF, and the amount of the cross subsidy can be decided among the respective user groups [5, 7].

Table 1: **Quality criteria from a user perspective in Dhaka, Bangladesh (distribution binarised).**

User Quality Criteria	*Women-only*	*Men-only*	*Mixed*
Water Availability	✓	✓	✓
Cleanliness	✓	✓	✓
Gender Separated Toilets	✓	✓	✓
Queuing / Waiting Time	✓	✓	✓
Cleaning Arrangement	✓	✓	✓
Detergent	✓	✓	✓
Handwashing	✓	✓	✓
Tissue / Toilet Paper	✓	✓	✓
Space Availability (inside)	✓	✓	✓
Lockable door	✓	✓	✓
Sanitation Technology (Flush WC)	✓	x	✓
Lighting	✓	x	✓
Tiling	✓	x	✓
Privacy	✓	x	✓
Toilet-User-Ratio	✓	✓	x

II. Main results of the evaluation

User perspectives on acceptable sanitation and quality criteria

Users and their perspectives on sanitation and quality criteria are fundamental to consider in order to properly meet users' needs with public investments, and in terms of ensuring user acceptance of available SSF to support interventions that improve public health. In a first phase, to evaluate how SSF users define the quality of an SSF and which aspects they consider as essential criteria for good quality SSF, we used a qualitative approach and conducted six focus group discussions (three women-only, two mixed, and one men-only) in Dhaka [8].

In general, users expressed that the current conditions of SSF are often disgusting, resulting in avoidance. User quality criteria were defined as those that were mentioned in at least two different types of focus group discussions. Given this criterion, the reported quality criteria for adequate SSF are (Table 1):

- Water availability;
- Cleanliness;
- Gender separated toilets, lighting and lockable doors (particularly important to women, providing adequate safety, security and privacy);
- Flush toilet technology;
- Appropriate user-toilet ratio (no queuing and reduces waiting time);
- Tiled floors (improves cleanability);
- Availability of toilet paper and handwashing stations;
- Adequate space availability inside cubicle.

Qualitative data shows that current sanitary conditions are poor, leading to unhygienic environments, which is intensified by poor user behaviour and the lack of social organisation around managing SSFs, including poor (solid) waste management. Apart from the social dynamic among users, these challenges are amplified due to the lack of technical and financial support regarding the service provision of sanitation facilities by local municipalities, city corporations and local and central government bodies.

Indicators for assessment and monitoring of SSF quality

In a second phase, we collected quantitative data and used regression analysis to evaluate the indicators for assessment and monitoring of SSF quality [9]. Quantitative data was collected through a survey of 1284 households and 692 spot-

iii Basic sanitation = Improved sanitation (facilities designed to hygienically separate excreta from human contact) that is not shared with other households.

check observations of individual household and shared toilets, using geographic sampling. Descriptive statistics from the household survey reveal that 93% of the toilets inspected were *flush/pour-flush to open drain/don't know where,* resulting in less than 7% of the toilets being considered of improved technology (Table 2). Nearly 23% reported problems of the toilet facility being shared with too many people and 33% reported long wait times for using it. More than 91% of the toilets were shared among relatives or close neighbours.

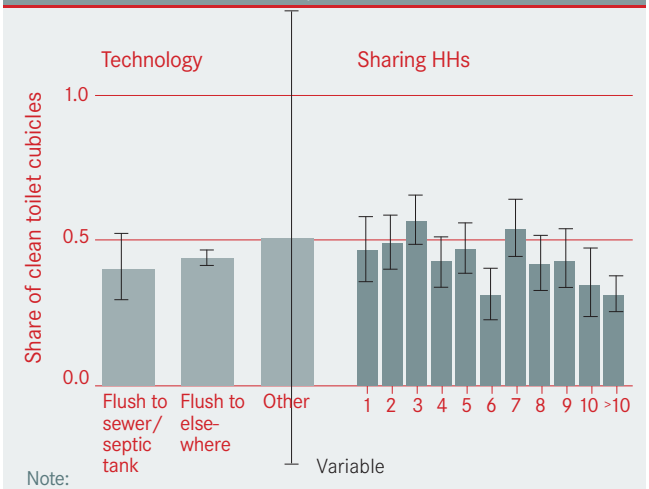
Over 73% of the toilets were located inside the compound/plot, 87% had a solid wall without holes, 93% had solid floor material, and 83% had a solid, functional roof. Moreover, 67% of the toilets had lockable doors both from inside and outside, whereas 4% had no locks. Furthermore, 49% of the toilets had proper lighting. In 69% of the cases, there was a cleaning rota in place. Handwashing facilities with soap were found in only 33% of the inspected toilets, even though 96% of the households reported an improved water source on the plot.

Sanitation quality covered such variables as: cleanliness, reported use at night (accessibility, safety and security), floor and roof without cracks/holes (safety/security), and solid doors and walls without holes (privacy). Cleanliness was defined using observable characteristics (the presence of solid waste, insects, and visible faeces). Cleanliness is highly correlated with other quality variables, implying that a clean toilet is also likely to provide safety, security, and privacy. Over half of the inspected toilets were not clean (57%) measured by the presence of visible faeces, insects or solid waste inside the cubicle.

Table 2: **Descriptive statistics Dhaka, Bangladesh**

Characteristics	N = 1,284
Shared toilet >1 (HH)	94%
Toilet clean (observed)	43%
Toilet clean (reported)	82%
Technology:	
– Flush to elsewhere	93%
– Flush to sewer/septic tank	5.5%
– Pit latrine (with slab)	0.9%
– Other	0.3%
Location:	
– On plot	73%
– Elsewhere	27%
Wall material (high quality)	87%
Floor material (high quality)	93%
Roof material (high quality)	83%
Handwashing facility with soap	22%
Improved water on premises	96%
Landlord on plot	36%
Cleaning rota:	
– yes	69%
– no	25%
– private	6.2%

Figure 1: **Relationship between cleanliness and toilet characteristics Dhaka, Bangladesh.**



Note:
Flush to elsewhere include facilities that drain into the open and to "don't know where". "Other" facilities include pit latrines (with/without slab).

Regression analysis was used to test the relationship between toilet cleanliness and candidate sanitation indicators (see Figure 1). Toilets that drained into the open or to "don't know where" were grouped into one category "flush to elsewhere". The results indicate that toilet technology does not serve as a useful indicator for toilet cleanliness and quality in the urban context.

Also, the number of sharing households is not a useful indicator for toilet cleanliness in Dhaka. Toilet cleanliness is not associated with the number of households sharing a cubicle. Both results – regarding technology and sharing households – persist, even when we control for other factors.

III. Main recommendations

The results indicate that the users in LIAs are dissatisfied. To improve the current conditions and address the outlined quality criteria from a user perspective implies that contextualised standards are needed and should include:

- improved toilet technology types (e.g. Flush/pour-flush to sewer/septic/pit where water is available);
- number of users (per facility based on design);
- effective structure of social organization (e.g. duty roster) to improve operation and maintenance of the SSF;
- education and sensitization program targeting improved toilet user behaviour.

In addition, it must be guaranteed that SSF are:

- accessible and available (no restrictions, e.g. use 24/7, incl. at night);
- safe and secure (floor and superstructure without cracks/holes, functional lighting, and located close to dwelling e.g. inside dwelling in/side compound/on plot);
- offer adequate privacy (lockable/functional doors);
- are clean (no visible faeces, no smell and insects, and tiled floors);
- offer functional handwashing stations.

These standards can be used to inform Strategy 4 of the National Water Supply and Sanitation Strategy 2014 to 'move up the sanitation ladder'. The definitions of sanitation service levels should take into account the different contexts where sanitation facilities are shared (for example in LIAs). Contextualised indicators provide better data for the measurement of the SDG targets, highlighting gaps and setting priorities for the post-SDG agenda for sanitation. It is becoming understood in the field that the current reliance on the number of households and/or users of toilets to distinguish between basic and limited sanitation should be revisited. This policy brief recommends a reclassification of the sanitation ladder based on quality indicators tailored to SSF. Further research to confirm these indicators as improved quality indicators of shared sanitation is, however, needed.

The study results imply that local authorities are not sufficiently performing their responsibilities for toilet upgrading and gaps in service provision still remain since users are consistently facing adverse health and environmental impacts due to poor SSF. Some recommendations include:

- Basic rights to sanitation services of users must be ensured by the local government;
- NGOs responsible for toilet provision must follow-up toilet maintenance to address infrastructural sustainability and door/lock/lighting issues to ensure user safety/security;
- Cross-subsidy between poor and non-poor users must be coordinated by the proper authorities to improve toilets;
- Awareness must be raised through campaigns, employing trusted persons from the community to openly address poor user-behavior, regarding improper cleanliness and waste disposal practices;
- An appointed managing committee/salaried person needed to look after and clean toilets.

The Department of Public Health and Engineering (DPHE) is responsible for planning, designing, and implementing water supply and sanitation services in towns and municipalities, and there is overlap with the work of Local Government Engineering Departments (LGEDs) and municipalities. Both municipalities and City Corporations are responsible for coordinating the provision of sanitation services. Therefore, these overlaps must be addressed to ensure the proper provision and maintenance of hygienic SSF services.

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About QUISS

QUISS was commissioned by Water & Sanitation for the Urban Poor (WSUP) under the Urban Sanitation Research Initiative, funded by UK Aid from the British People. Based on an extensive survey of shared toilets and their users across cities in Bangladesh, Ghana and Kenya, as well as qualitative studies, it aimed to identify key criteria of what constitutes "high quality" shared toilets in urban contexts.

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