



QUISS staff on a site visit to inspect shared sanitation facilities in the low-income area of Manyatta, located in the city of Kisumu, Kenya (Image: Sandec)

Quality determinants of shared sanitation facilities in low-income urban settlements

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THREE POLICY RECOMMENDATIONS:

- ◆ Acknowledge shared sanitation as an adequate (intermediate) sanitation solution and include shared sanitation as a basic sanitation solution for low-income urban settings provided quality standards are met.
- ◆ Establish and apply (contextualised) quality indicators tailored to shared sanitation facilities (SSF) and enable monitoring to ensure user acceptance and support the success of sanitation interventions to improve public health.
- ◆ *Adopt minimal quality standards for 'basic' shared sanitation facilities including the following factors: (i) the toilet technology using flush or pour-flush toilet technology where water is available and, if not available, construct improved toilets; (ii) a maximum number of three households per facility; (iii) good accessibility (toilet located inside dwelling/inside compound/on plot, no restrictions of use, eg reported use 24/7, including at night); (iv) safety/security: solid floor and superstructure without cracks/holes, and functional lighting; (v) availability of gender-separate toilets and lockable/functional doors; (vi) acceptable cleanliness (eg no solid waste, no visible faeces, bloodstains, sputum, no insects); and (vii) functional handwashing stations (soap and water).*

RESEARCH/KNOWLEDGE OVERVIEW

EXECUTIVE SUMMARY

Shared sanitation has immensely contributed to sanitation access in urban areas. However, due to the lack of quality standards within Sustainable Development Goal #6 and the WHO/UNICEF Joint Monitoring Programme (JMP), which evaluates progress on the SDGs, shared sanitation is at best considered a 'limited' solution. This policy brief presents the main results of the Quality Indicators of Shared Sanitation (QUISS) project: a three-country comparative mixed-methods study that identifies the key criteria of what constitutes 'acceptable quality' shared toilets in low-income urban contexts and provides recommendations for strengthening the acceptability, functionality and sustainability of shared sanitation facilities.

BACKGROUND LAST VERSION

In recent years, shared sanitation facilities (SSF) have substantially contributed to sanitation access in low-income urban areas. The global percentage of users has increased from 5.4% in 2000 to 8.3% in 2017 ([WHO, 2020](#)). However, while SSF are often the only viable option in densely populated low-income urban areas, within Sustainable Development Goal (SDG) #6 and the WHO/UNICEF Joint Monitoring Programme (JMP), which evaluates progress on the SDGs, they are only considered to be a 'limited' solution ([WHO, 2018a](#)). Depending on how excreta are managed, improved sanitation facilities, which are those designed to hygienically separate excreta from human contact, are divided into three categories: limited, basic, and safely managed (JMP sanitation service levels). Private household toilets are categorised as either basic or safely managed services. In contrast, SSF are at best classified as a limited solution because they are shared by more than one household – irrespective of use and how the excreta are managed. The reason is that '[it is] extremely difficult – for global monitoring purposes – to differentiate between shared toilets that are hygienic, accessible and safe, and the more common ones, which are poorly designed and managed' ([Evans et al., 2017](#)). To address this shortcoming, QUISS identified key criteria of what constitutes 'acceptable quality' of SSF in urban low-income contexts, using a mixed-methods approach.



QUISS staff on a site visit to inspect shared sanitation facilities in Bhasantek, a low-income area located in the city of Dhaka, Bangladesh (Image: Sandec).

OVERVIEW AND APPROACH

QUISS project results include quality indicators from a large-scale quantitative assessment as well as qualitatively evaluated criteria from a user perspective, including gender differences. In 2019, 17 focus group discussions, a survey of 3,600 households and 2,026 observational spot-checks of SSF and private household toilets were completed in Ghana, Kenya and Bangladesh. A detailed description of QUISS is presented in ([Schelbert et al., 2020](#)), and ([Schelbert et al., 2021](#)). Country respective findings and recommendations can be found in [Alam et al., \(2021\)](#), [Simiyu et al., \(2021\)](#) and [Antwi-Agyei et al. \(2021\)](#).

User perspectives on acceptable sanitation and quality criteria

We must consider users and their perspectives on sanitation priorities in order to meet their needs with public investments, ensure user acceptance, and achieve the success of sanitation interventions. To evaluate user perspectives, in a first phase, we used a qualitative approach and analysed 17 focus group discussions, eight of which were women-only, five were mixed and four were men-only. Each had eight to twelve participants between 18 and 65 years of age ([Schelbert et al., 2020](#)).

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In the first evaluation step, users themselves determined the criteria for 'acceptable quality' of adequate sanitation. User quality criteria are those aspects that affect the user's experience in a positive or negative way when using or avoiding SSF. This includes factors that make an experience (in-)convenient or (dis-)comforting or lead to adverse or beneficial health or well-being effects. User quality criteria are factors that users discussed in at least two types of focus group discussions (women-only, mixed, or men-only) in every country. In the second step, we evaluated gender differences regarding the user quality criteria, since women and men have different hygiene practices and needs.

Indicators for assessing and monitoring SSF quality

In the second phase, the study investigated the current quality standards and monitoring guidelines (JMP sanitation service levels) to ascertain whether they adequately reflect the situation on the ground and if other/additional informative indicators could enhance the usefulness of urban sanitation quality assessments, particularly concerning SSF. A survey of 3,600 HHs and 2,026 observational spot-checks of SSF and private household toilets were done using a combination of systematic and purposive sampling (Meili et al., 2021).

To identify potential indicators to measure urban sanitation quality, the Sanitation Quality Index (SQI) was developed. It comprises three quality dimensions: the hygiene, safety, and privacy of sanitation facilities.¹ Variables for each quality dimension were identified based on user priorities (Schelbert et al., 2020) and the WHO guidelines on sanitation and health (WHO, 2018b). The SQI only contains observable indicators due to validity and reliability concerns of reported household data (Meili et al., 2021). The empirical approach followed three steps. First, the SQI was aggregated based on the three dimensions using eight variables. Second, the relationship between the SQI as a proxy for toilet quality, currently used sanitation indicators (eg technology and sharing), and additional variables² were analysed using regression analysis. Third, the findings were

incorporated into the current JMP framework to determine the implications of new quality indicators for assessing sanitation service levels.

DISCUSSION



Collecting gender-specific quality criteria for adequate shared sanitation from a user perspective with residents of Adam-Ali Tek, a low-income urban area of Dhaka, Bangladesh (Images: Sandec).

Results are presented according to the two research phases and respective findings.

User perspectives including a gender-lens on acceptable sanitation and quality criteria

According to the designated evaluation criteria from the focus group discussions, we identified nine user quality priorities. In descending priority based on their score, these are:

1. Water availability in close proximity
2. Cleanliness
3. A gender-separated toilet

Privacy [solid wall: The wall must be of solid material and have no holes that would allow a person to peek through].

² The **additional variables** were: the toilet's location, water on the premises, a handwashing facility with soap, functional lighting, a lockable door, floor tiling, gender-separate cubicles, a cleaning arrangement, the degree of user relationship, the toilet's age, the landlord living on the same plot, and a bin inside the toilet cubicle.

¹ **Hygiene** [no solid waste inside the cubicle; no visible faeces in or around the manhole/pan; no insects inside the cubicle, handwashing facility with soap; not clogged in the case of a flush toilet or full in the case of a pit latrine].

Safety [solid roof (without holes): The roof protects the user from external (environmental) factors such as rain; solid floor (without cracks/holes): The floor separates the user from excreta and is, therefore, a gatekeeper for health hazards through both direct contact and indirect contact, eg insects].

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4. Flush Water Closet (WC) (pour/cistern flush)
5. Lighting
6. A lockable/functional door
7. Tiling
8. A handwashing station
9. Privacy

Overall, the users prioritised water availability and cleanliness. These two are closely related; users perceive water availability (in close proximity) as essential to keeping the facility clean ([Schelbert et al., 2020](#)). With water being immediately available for flush WCs, participants expect cleanliness to increase with concomitant beneficial effects, such as decreasing odour/smell and vermin ([Rheinländer et al., 2013](#)). Further, users prioritise lighting, lockable/functional door and tiling for reasons of cleanliness, privacy and/or safety/security ([Cardone et al., 2018](#); [Simiyu et al., 2017](#); [Tidwell et al., 2018](#)). Users prioritise handwashing stations for personal hygiene motives ([Tidwell et al., 2019](#)).

Regarding gender particularities, women expressed a higher concern for almost all the quality criteria, except for two (flush technology and tiling). Women prioritised lighting and a lockable/functional door for privacy and safety/security reasons. Men prioritised lighting and tiling for cleanliness reasons because tiles are easy to (keep) clean. Regarding gender-separated toilets, women prefer these for privacy, whereas men for cleanliness reasons. Women feel safer having a private toilet cubicle reserved for them, while men complained about visible bloodstains. Both motives indicate inadequate menstrual health management provisions. This includes a lack of or inadequate personal hygiene facilities for women, leading to unhygienic and potentially humiliating conditions ([Hueso et al., 2018](#); [Mitlin, 2011](#)). In this sense, gender separated toilets are linked via menstrual health management to privacy and cleanliness.

Overall, users mention the insufficient number of toilets to lead to queuing and increased waiting times ([Hutton, 2015](#)), which impedes toilet availability and has adverse effects on privacy, safety/security, and cleanliness. Long waiting times also occur where toilets simultaneously serve as a shower/bathing area and as places for women to manage their menstrual health. Gender-separate toilets and – where possible – designated shower/bathing areas could enhance user privacy and increase toilet availability. Inadequate conditions force users to develop coping mechanisms (eg accompanying at night), which women

develop sooner than men ([Kwiringira et al., 2014](#); [Simiyu, 2015](#)).

Indicators for assessing and monitoring SSF quality

Regarding the quantitative assessment, descriptive statistics from the household survey and the toilet spot-checks reveal that the majority of the toilets observed (65%) were improved, of which 37% were connected to a sewer/septic tank and 63% were improved pit latrines (with slab). Among the households interviewed, 93% shared their toilet with at least one other household. The majority (96%) of the toilet facilities were located on the compound, and most had solid walls (89%), roofs (79%) and floors (91%) without holes. Although two thirds had an improved water source onsite (68%), only 11% of the toilets had a handwashing facility with soap available. Over two-thirds (67%) had a door that was lockable from the inside and outside, and 40% of the facilities provided functional lighting. Conversely, only 3% of the toilets were gender-separated. There were resident landlords on half of the compounds (52%). Less than half (43%) of the respondents reported that there was a cleaning arrangement in place. Based on observable indicators, only 41% were categorised as clean (no visible faeces, no insects, and no solid waste).

Regression analysis tested the relationship between the observable SQI and the quality indicators. The results suggest that relying on improved technologies (ie at least a pit latrine with slab) as a single distinguishing indicator for toilet quality is inadequate in urban settings – even for private household toilets. SQI scores of pit latrines with slab are significantly lower compared to flush toilets, even though WHO JMP considers both types improved technologies ([WHO, 2018b](#)). Therefore, classifying pit latrines with a slab as unimproved sanitation improves the prediction of sanitation quality as defined by the SQI (Meili et al., 2021). Regarding sharing, toilets shared by two to three HHs are mostly cleaner, safer and more private than toilets shared by four or more HHs, which is similar to the findings of [Günther et al. \(2012\)](#). However, the results vary considerably across countries ([Alam et al., 2021](#); [Antwi-Agyei et al., 2021](#); [Simiyu et al. 2021](#)). Other strongly significant indicators that correlated with quality included the toilet's location, lighting, and a lockable door (from the inside and outside). Further, the presence of a cleaning list and floor tiling display a moderate positive correlation. The availability of water on the premises, gender-separate cubicles, the sharing users' relationships to one another,

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the toilet facility's age, and a landlord living on the same plot did not significantly correlate with toilet quality.

QUISS showed that the current JMP sanitation service levels for SSF, which are exclusively based on (improved) technology and sharing, provide insufficient information regarding sanitation quality. These service levels should be revised and new indicators for determining adequate quality established. According to our findings, quality standards for shared sanitation refer to facilities with the following characteristics:

- ◆ Technology: Flush or pour-flush toilet technology where water is available or improved toilet technology where water is not available;
- ◆ Numbers of users: Up to three households per facility;
- ◆ Accessibility/Availability: Toilet located inside dwelling/inside compound/on plot, 24/7 access;
- ◆ Safety/Security: Solid floor and superstructure without cracks/holes with functional lighting;
- ◆ Adequate privacy: Availability of gender-separate toilets (whenever multiple cubicles are feasible/available) and lockable/functional doors;
- ◆ Acceptable Cleanliness: No solid waste, no visible faeces/blood stains/sputum, no insects and
- ◆ Functional handwashing stations: soap and water.

These indicators should then be applied to distinguish between adequate (defined as available and accessible, safe and secure, private and hygienic) and non-adequate SSF in low-income urban settings as part of the efforts to distinguish between "basic" and "limited" SSF.

THREE MAIN RECOMMENDATIONS FOR POLICY REFORM

1. **Foster global acknowledgement of SSF as a basic sanitation solution by major sector players** for low-income urban settings, provided quality standards are met. The exclusion of SSF from the WHO/UNICEF JMP framework as a basic sanitation solution might produce unintended incentives to donor agencies and NGOs not to improve such facilities. Setting goals, identifying targets and developing monitoring frameworks have far-reaching effects. Good quality monitoring and benchmarking can often create strong incentives to improve performance.

2. Establish government support and develop national guidelines and bylaws that embrace essential quality standards and indicators for adequate SSF. Clearly define and assign the roles and responsibilities of state and non-state actors to enhance collaboration, including financing with strategic direction for sharing capital and operational costs among poor and non-poor users and enforcing mechanisms to promote and enforce standards.
3. **Establish an enabling environment for adequate sanitation service delivery.** Use a range of technical solutions, designed and implemented through an adaptive and incremental approach with full consideration of the entire sanitation service chain and integration of complementary urban services. These services include water supply, drainage, greywater management, and solid waste management. Develop legislative and regulative frameworks with policies guiding sanitation at the national level, which feed into the policies at the district or county government level. Plan with secure budgets for both capital and operational expenses and allocate funding for non-infrastructure aspects of service delivery, such as capacity building, household engagement and outreach, and sanitation marketing.

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BE WATER, MY FRIEND

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