

# Participatory performance monitoring of sanitation and hygiene services at scale in Bangladesh

## Authors

Christine Sijbesma<sup>1</sup> and Mahjabeen Ahmed<sup>2</sup>.

## Abstract

Besides halving the number of people without access to improved water supply and sanitation, the new post-2015 development goals for the WASH sector will probably include sustainable service delivery and safe use. These are also the objectives of the WASH II programme in Bangladesh. It is implemented by BRAC, a large NGO, with support from three donors and spans 248 of the 502 districts. To monitor outcomes, BRAC and IRC developed a system that quantifies a limited number (15) of behavioural indicators at scale. A special challenge was to combine statistically reliable evidence with information that communities can use to improve their performance. After a description of the history and concepts of the methodology, this paper presents the first outcomes of the first monitoring round (December 2012). Conclusions are drawn on the possibility to use more participatory monitoring at scale that combines statistical rigor for accountability with sharing knowledge for local development.

## Keywords

Bangladesh, hygiene, monitoring, practices, sanitation, water.

## Participatory monitoring: history and school of thought

At present the post-2015 goals for the WASH sector are discussed. Access for all will now be linked to sustainability and equity goals for service delivery and hygienic use (JMP, 2012). This puts a monitoring system that quantifies quality performance data high on the agenda. Early methodological development began with WSP and IRC in 1998, in reaction to WSP's earlier survey study in 10 countries. It demonstrated that more demand-responsive service development correlates with more sustainable service delivery afterwards (Sara and Katz, n.d.). The main draw-back is that such studies do not inform local users and managers. They are only involved as respondents; analysis is done afterwards and only at central level. IRC felt that the participants have an equal right to information in a form that they understand and can use, because these are their services and they keep them going.

Questionnaire surveys as done in the WASH sector belong to the positivistic school of thought. Positivists believe that laws of nature govern both natural and social science. They also believe that there is only one truth, which science can reveal and that if done

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<sup>1</sup> Associate, IRC International Water and Sanitation Centre, sijbesma@irc.nl.

<sup>2</sup> WASH II QIS Manager, Bangladesh Rural Advancement Committee (BRAC), mahjabeen.a@brac.net.

well, the data will be free from any personal, socio-cultural and political biases of the investigators. Researchers, and policy-makers who commission positivist research such as surveys, appreciate that they control how a problem is defined and investigated with statistical methods (Bell & Morse, 1999, Röling, 1996).

In the 1990s, surveys began to be criticized from a theoretical and a development perspective. Theoreticians doubted the validity of data and statistical tests when only outsiders formulate questions and interpret answers. Development workers disliked the extractive and expropriating character of the surveys. Those who owned the knowledge had no access to the data and could not compare them with those for neighbouring households and communities (Sijbesma, 2001). More participatory forms of research began to emerge, in which the participants shared and interpreted their realities through visualisations in drawings, maps, scales and diagrams. This had several advantages. Participants could bring in their own experiences of reality and everyone could share because no literacy was needed. Statistically, the quantitative data were equivalent to modal values, because the majority decided on the outcome. Everyone could also see and understand the outcome and compare it with their personal situation. Rules for participatory measurement were developed that are equivalent to what positivists use for obtaining representative, reliable and valid data (Pretty, 1994).

A limitation was the qualitative nature of most information. This made the methodology less attractive for use at scale by managers and policy makers. The latter want statistics that have been measured in the same way across a programme, can be aggregated at various levels and is comparable across time and locations. The exception is the so-called party numbers or people's statistics which use quantitative participatory tools such as scale scoring, pocket voting and matrix voting, in which people generate numbers by counting, weighing or measuring (Chambers, 2003). For performance measurement in the WASH sector such people's statistics are a good alternative to the external questionnaire surveys. A remaining obstacle remains the measurement of qualitative aspects, such as participation and equity. In participatory research in Sri Lanka Uphoff (1988) used Likert scales for such aspects, with local groups scoring their performance on a five-point scale with a range in the form of very positive – positive – neutral – negative – very negative. The problem with Likert scales is that each group has their own interpretation of the meaning of these terms, which made the outcomes not comparable.

#### **A new monitoring method: mini-scenario scales**

Hence for their research on participation, equity and demand-responsiveness on the one hand and performance in service delivery on the other hand, IRC and WSP agreed to use a common set of so-called mini-scenario scales. Each set of scales ranges from the absence of the particular indicator at the lowest level (score 0) to the optimal mini-scenario at the highest level (score 4). The levels in between have scenarios that describe the steps that Communities commonly take to reach the ideal. An example is the coverage of the recurrent costs of a water supply service, which can go from no

financing at all (level 0) via partial O&M costs (level 1), to full O&M costs and minor repairs (level 2) and all costs of O&M and repairs (level 3) to ideally O&M, repairs and depreciation (level 4). The use of such scales made it possible to prove in a positivistic manner for 88 water services that those established with more participation and more equity on gender and for the poor also had a better technical, financial, institutional and social performance (Gross et al., 2001). Since then, the methodology has been widely used in a range of sectors, countries and programmes and has been adapted to monitor and improve performance over time.

### **Performance monitoring in WASH II**

In May 2006, BRAC, a large Bangladeshi NGO, launched the WASH I programme in 150 Upazilas (districts) of Bangladesh, with support from the Dutch Government. The target population was 38.8 million people. The aims were to improve health and enhance equitable development through sustainable and integrated WASH services and improved hygiene, and scale up the services across the country. WASH II builds on the achievements of WASH I and focuses especially on strengthening sustainable and equitable services, institutions and hygiene. With the additional support from the Bill and Melinda Gates Foundation (BMGF) and DFID, WASH II now spans 248 of the 502 Upazillas, almost half of the country.

In WASH I, BRAC already monitored inputs (e.g. the number of visits) and outputs (e.g. number and types of toilets built). The requirement was to monitor also outcomes in terms of sanitation and hygiene behaviours, management and sanitation marketing. For this, BRAC and IRC developed a programme-specific monitoring system, the Qualitative Information System or QIS. QIS quantifies qualitative information, such as participation of women in management and decision making and key hygiene practices in households and schools. Overall, there are 15 key outcome indicators (Table 1). All household data are poor-specific and toilet use is scored gender and age specific.

All scales have the same format with maximally four characteristics per indicator. In mathematical form, each scale consists of no a, a+1, a+1+1, a+1+1+1 and a+1+1+1+1. The scales were designed in a workshop in January 2012 together with the WASH programme staff at headquarters and the 20 region heads, who had mostly climbed up from a field position. Testing was done twice, in some villages in March and with 432 households (144 poor, ultra-poor and 144 non-poor), 36 VWCs, 12 schools and 12 enterprises in 4 districts at each corner of the country. The latter data were statistically analysed. After each test, the scales were adjusted.

The scales are used in two ways: for accountability and for self-development. For representative programme performance data, a three-stage sampling procedure with probability proportional to size (PPS) was followed. This resulted in two samples of 4,050 households each, equally divided between ultra-poor, poor and non-poor. The first was in 150 'old' Upazillas (programme since 2006) and the second in 150 'new'

unions (programme since 2012). Other participants are 300 WASH committees, 400 schools and 400 entrepreneurs. Fig. 1 gives the distribution of sample locations.

The monitoring team consisted of one male and one female. They entered the data into smart phones and sent or uploaded them to the QIS data base. After data cleaning, BRAC and IRC jointly analysed the data using open software of Epi-Info 7. For self-development, field staff is training village WASH committees and women groups to monitor and analyse performance in their own locations.

### **Quality assurance**

A number of efforts served to strengthen the validity and reliability of the data. For valid measurements, QIS was developed together with programme staff with long and field-based experience. All terms and measurement procedures were carefully formulated and tested. Pour-flush toilets, for example, had to have an observed unbroken water seal and enough water to close off bad smell.

For reliability, the male team members came from the independent audit department in BRAC and were first observed in a try-out . They were then trained in three batches of 8 days' training. Training included developing of technical observation skills and using smart phones.

Double data entry - in phones and on paper - and comparison before loading or sending the data saved both costs and errors of data entry. Team members had to switch these roles between visits to ensure gender equity in handling smart phones. A photographed bar code on each form prevented double counting in case of double uploads. WASH and IC staff were on 12-hours call to address questions and problems from the field. WASH staff also rechecked the data on arrival and phoned to redo the work in case of errors. Evidence of reliability comes from consistency in findings on toilet access from MIS and QIS monitoring data.

### **Lessons and next steps**

Further improvements are planned. First, the intended qualitative details behind scores, from asking participants why a score was high or low, were not added in the first round because of a misunderstanding that these reasons should be the participants' and not the teams. No insight was therefore obtained about the type of factors playing a role in cases of bottom and top scores.

Neither have the scores on administration included any performance measurement in monitoring of O&M and recurrent cost financing, because this is the responsibility of individual households and the programme does not yet develop the capacities of the committees on sustainable and equitable financing.

Finally, it was intended to triangulate scores from village WASH committees on their cooperation with local government with scores on a scale used with the Watsan committees in the union and district government, to measure the relative strengths of community and local government forces and see where voluntary management and

government institutions are mutually supportive. However, the scale piloted with the unions did not take into account that unions greatly vary in the numbers of committees with which they must cooperate and in the distances concerned, and there was no time to re-design and re-pilot the higher level scales. This, like the other issues, will need to wait till the next monitoring round at the end of 2013. A new independent monitoring sample will then be drawn in the same way as in 2012, to avoid any bias from re-participation.

From the preliminary analysis some trends have nevertheless already become clear. Overall, qualitative performance in WASH II has been good: most scores were at or above benchmark. The equity strategy, with extra support for the poor and especially the ultra-poor, has also worked well. Gaps between the three classes were either small or non-existent. On one aspect, freedom of latrine slabs and pans from faecal soiling, performance was even three times better for the ultra-poor than for the poor and non-poor.

The QIS data also showed that the programme management has to make some choices on the focus of the programme. Should efforts go to all or some of these aspects where performance can further improve:

- Go the last mile on toilet access?
- Address the sanitary nature of toilets?
- Complete consistent use by all, including men and children?
- Address latrine hygiene and hand washing provisions more strongly?
- Give more priority to water safety, including biologically safe drinking water management from source to cup and what to do if latrines are closer than 12 steps to tube wells?
- Prioritize menstrual hygiene management in schools and/or close remaining gaps on girls' toilets and participation in school sanitation?
- Develop especially the cooperation between village WASH committees and WatSan Committees at union and Upazilla level?
- Find the reasons why a quarter of sanitation enterprises fail? Generally improve entrepreneurial capacities in terms of customer demand assessment, product - and service diversification and marketing and administration and financial management?

Experience with the QIS as monitoring instrument has generally been positive. Initially, there were some problems, because both villagers and field staff saw a low score as very negative. Once they understood that the scales are ladders to climb over time and that low(er) scores are a guide on where and how to progress, participants really liked the ladders and the possibility to see where they were. They also appreciated the low time demands (around 40 minutes per session), which was shorter than a questionnaire interview. In future, they will also be able to compare their patterns with those in

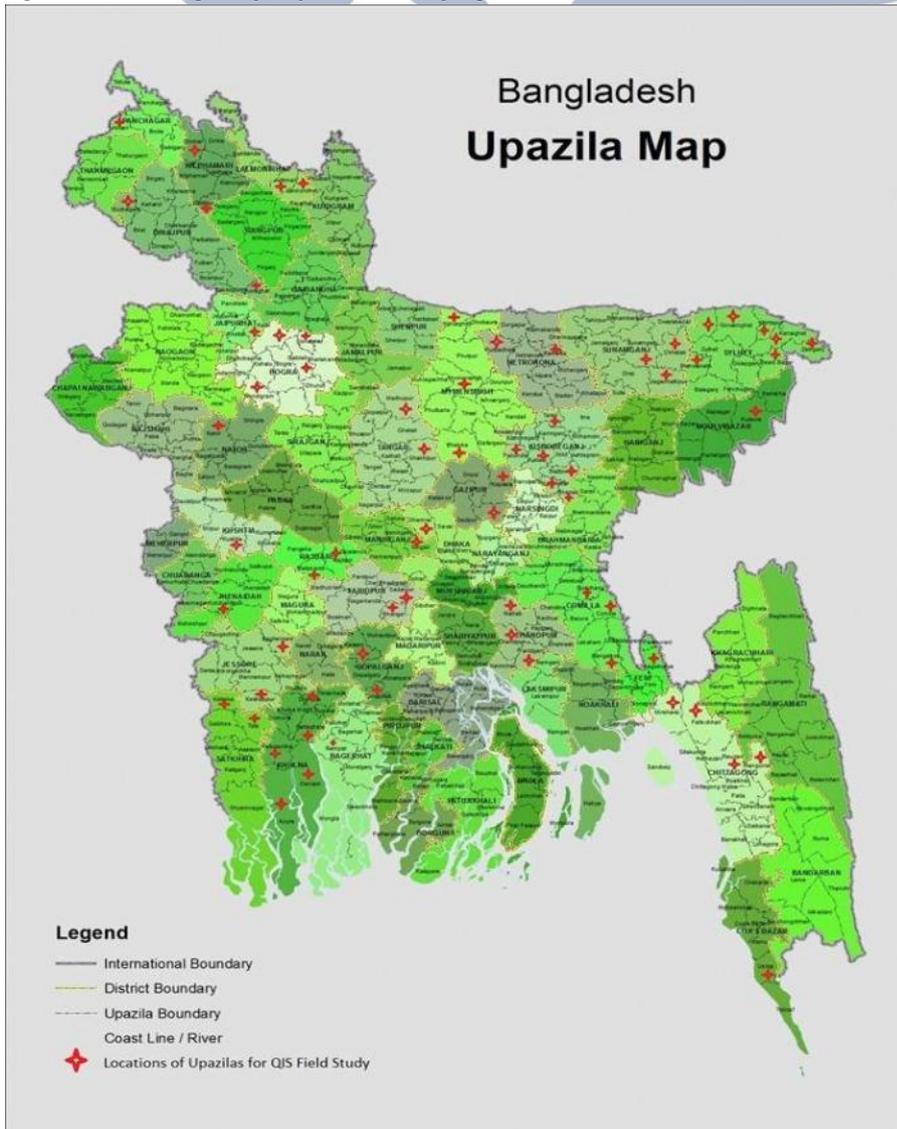
neighbouring locations, when they can access a map with geo-referenced data using Integrated Collaboration and Rapid Emergency Support Services (iCRESS).

Table 1 WASH indicators monitored through the QIS.

<b>Service</b>	<b>Indicator</b>	<b>Method &amp; participants</b>
Safe water supply	Functioning and protected tube well with hand pump free from arsenic contamination	Observation with village WASH committee
	Safe water source in home	Demonstration by/ observation with adult female household member
	Drinking water management in home	
Safe excreta management and hygiene	Quality of toilet facility	Probing of adult female household member
	Handwashing provisions at toilet	
	Use of toilet by household members	Probing of adult female household member
	Consistent use of toilet	
	End disposal when pit is full	
Management	Functioning of WASH committee	Discussion and observation of documents with WASH committee
	Gender inclusive management	
WASH in schools	Sanitary, hygiene toilets girls & boys	Observation, verification with students
	Functioning student health club	Discussion and observation of documents with students
	Menstrual hygiene management	Observation, probing with female students (separate)
	Functioning school WASH committee	Discussion and observation of documents with c'tee
Private sector	Functioning sanitation enterprise	Discussion, observation of documents with entrepreneur

Source: BRAC/IRC QIS Guidelines, 2012.

Figure 1: Monitoring sample of the WASH II programme.



(Source: IRC and BRAC, 2012.)

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