

# **Guide to Implementing WASH Bottleneck Analysis using the Bottleneck Analysis Tool (BAT)<sup>1</sup>**

## **Introduction**

The purpose of this guidance note is to aid those responsible for facilitating or organizing a water, sanitation and hygiene (WASH) bottleneck analysis process, to ensure an effective and coordinated approach. This document guides the user to reflect on the different elements that are required for a successful implementation of bottleneck analysis, and provides a checklist and options to allow the user to adapt the approach to their context.

The primary audiences of this guidance note are agencies tasked to lead the bottleneck analysis process, resource people hired to facilitate the process and those closely involved in the bottleneck analysis, including government and other partner agencies.

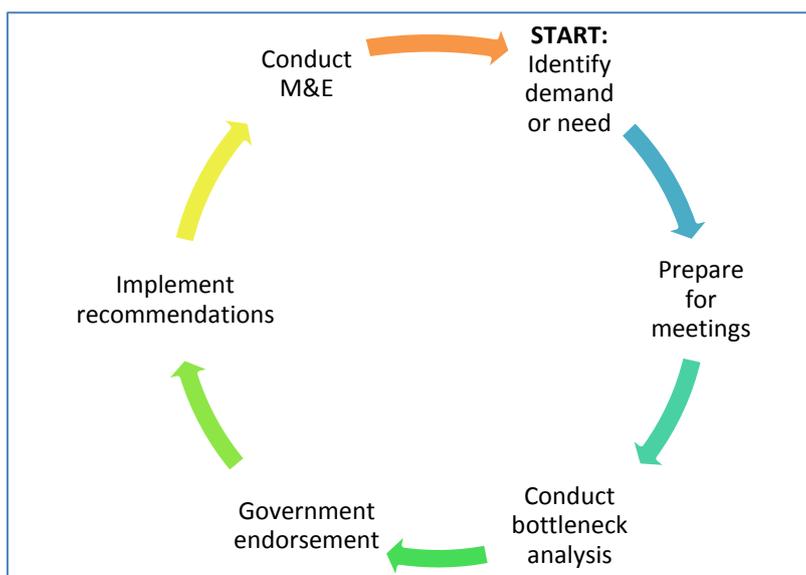
The WASH bottleneck analysis tool (WASH-BAT) is designed to be implemented separately in different sub-sectors and jurisdictions. For example, applications could be completed in rural water at national level, urban sanitation at provincial level, and rural hygiene at district level. There also exist specific modules for WASH in institutions (e.g. schools, health care facilities).

There are six main steps to bottleneck analysis:

1. Identify the demand or need for bottleneck analysis
2. Prepare the ground for a bottleneck analysis
3. Hold meeting(s) to conduct bottleneck analysis using the bottleneck analysis tool
4. Follow-up on the findings of the meeting(s), and obtain government endorsement
5. Implement the endorsed recommendations
6. Conduct monitoring and evaluation (M&E)

After initial experience with WASH-BAT, partners might decide to conduct further applications of bottleneck analysis in other WASH sub-sectors and/or at sub-national levels (e.g. at state, provincial or district).

**Figure 1. The process of implementation of WASH Bottleneck Analysis**



<sup>1</sup> The WASH-BAT concept and methodology was developed by UNICEF, and the software implemented by Community Systems Foundation Inc.

### Box 1: What is the WASH bottleneck analysis tool?

**Bottleneck analysis** is the systematic identification of factors (or ‘bottlenecks’) preventing the attainment of sector objectives. To accelerate progress in coverage and use of services by poor and vulnerable people, it is important to identify the specific causes of these bottlenecks and how they can be removed. Given there are many linked bottlenecks that current budgets are unlikely to be sufficient to remove, there needs to be a sequencing as well as prioritization of activities. Bottleneck analysis is more powerful when it is led by the lead government agency responsible for a particular sub-sector, and when it involves consultation with a range of stakeholders. In this way, consensus can be built on what the real sector problems and what range of practical solutions are implementable and a momentum built to mobilize financial and other resources to address the bottlenecks.

The first version of the **WASH bottleneck analysis tool** was developed by UNICEF in 2012 and over the course of three years it was applied in fifteen countries. The first version of the tool was based in Excel. Following experience with this tool and an increasing demand for bottleneck analysis, a second version of the tool was developed in 2016. This version is an online software which is simpler, more user friendly and allows greater flexibility. It is based on five building blocks widely recognized to characterize the enabling environment: (1) policy and strategy, (2) institutional arrangements, (3) financing and budgeting, (4) planning, M&E and learning, and (5) capacity development; and it includes focus on broader enabling environment (political prioritization, decentralization, and social norms) as well as service provider level.

The **WASH-BAT consists of several modules** which must be applied in sequence, with each module building on the last. *First*, the user sets up the analysis, making choices about the sub-sectors and jurisdictions it will be implemented in. *Second*, the user reviews the criteria for each ‘building block’ of the enabling environment. The criteria can be deleted and new ones created, to fully reflect the unique characteristics of the location being applied. The criteria are then scored as to the degree of progress achieved. *Third*, the user identifies the major bottlenecks present in the sub-sector and their causes, building on the scoring of the criteria. *Fourth*, the user identifies what activities are required to remove the bottlenecks, their costs, existing financing available, the priority activities for use of additional funds, those responsible for the activities and the timeline for their execution. *Fifth*, the user tabulates the activities that need to be implemented, either by (a) building block, (b) timeline, (c) priority, or (d) funding status.

In addition to WASH-BAT, there have been **other bottleneck analysis and sector monitoring tools** that have been applied widely, that the WASH BAT draws from and links to. Every two years since 2008, the UN-Water Global Analysis and Assessment of Sanitation and Drinking-Water (GLAAS) has been applied by WHO in an increasing number of countries – with information collected on national planning and coordination, monitoring, human resources and financing (domestic and external). The 2014 GLAAS survey covered 94 countries and 23 external support agencies. A second notable bottleneck analysis tool is the Country Status Overview developed by the Water and Sanitation Program of the World Bank and applied in 16 countries in 2006 and 32 countries in 2012. The tool was later adapted and applied in 10 countries in Asia where it was called the Service Delivery Assessment, and in several countries in Central America.

## Step 1. Identifying the demand or need for bottleneck analysis

Before committing time and resources to a bottleneck analysis process, it is key to assess the value added of bottleneck analysis in a particular country, sub-sector and jurisdiction. A bottleneck analysis should not be an academic exercise that builds good intention but whose recommendations remain unimplemented. Instead, it should be conducted by or in consultation with those with decision making power, and it should be strongly linked to internal decision making processes of government and other partners. The objective of WASH-BAT is to untangle the many barriers constraining progress in WASH outcomes for poor and vulnerable populations, so that a roadmap can be formulated which addresses these, together with detailed activities, their financing and responsible agents. Hence, if there is an environment in which sector partners can meet to discuss these barriers in an open way, and with expectation that actions can be taken based on these findings – then it is likely that bottleneck analysis is a relevant tool to apply. On the other hand if there already exist robust sector assessments whose findings have been accepted / endorsed by the major sector stakeholders, then the value added of the WASH BAT is likely to be lower.

A distinction should be made between ‘demand’ and ‘need’. There might be demand from government or partners but with limited need, and there could be a strong need for sector analysis but limited demand from government or partners. Hence the first step is to assess what is the business case for conducting bottleneck analysis. Table 1 shows four different situations. When there is both need and demand, the conditions are ripe for WASH Bottleneck Analysis and the sub-sector can proceed with its immediate implementation (quadrant 1). Where there is a need but limited demand, then key stakeholders need to be sensitized to the benefits of WASH bottleneck analysis (quadrant 2). When demand has been registered but there is limited need (quadrant 3), then a deeper assessment of the business case is required – what the stakeholders expect to get out of a WASH bottleneck analysis, and whether an alternative tool or analysis is warranted. Reasons for limited need might be because (a) the time is not right for bottleneck analysis (e.g. political changes are due or underway), (b) a similar tool has been applied recently and there is limited value-added of the BAT, or (c) some of the issues in the sub-sector are outside the bounds of the WASH BAT.

**Table 1. Matrix of demand versus need in conducting a bottleneck analysis, with action**

		IS THERE NEED FOR WASH-BAT? IS BAT RELEVANT?	
		YES	NO
IS THERE DEMAND FOR WASH BAT?	PRESENT?		
	YES	<p>Conditions are ripe for immediate application of the WASH Bottleneck Analysis</p> <p>1</p>	<p>Stakeholders should collectively assess the relevance of WASH Bottleneck Analysis</p> <p>3</p>
NO	<p>Stakeholders need to be sensitized to the need for WASH Bottleneck Analysis</p> <p>2</p>	<p>No action needed</p> <p>4</p>	

Hence, key questions to ask in deciding whether to conduct WASH-BAT or not include:

- Have key development partners, especially the government, already indicated their willingness to follow a process to conduct bottleneck analysis?

- Have other sector diagnoses recently been done and are they still relevant (e.g. GLAAS)? Hence, is there value-added of applying a WASH BAT now? How can previous exercises feed into the WASH-BAT process?
- Is it appropriate or effective to assemble key stakeholders in an open forum to discuss these (sometimes difficult) issues?
- Are there some bottlenecks or current issues which prevent a WASH BAT from being effective, such as change in political party or senior ministry staff?
- What are the main bottlenecks relating to the enabling environment issues? Are these covered in the building blocks of the WASH-BAT?
- Are there sufficient resources and institutional support to follow through so that the findings of WASH BAT are integrated into local processes?

#### Box 1: Checklist for Proceeding with WASH-BAT

1. Is there an understanding among sector stakeholders of what bottleneck analysis is and its value?
2. Is the WASH-BAT likely to bring additional understanding to the sector constraints and solutions?
3. Are the results likely to be followed up on?

If there is limited demand, it is advised to examine why that is so. Is it because ministry staff are too busy with other priorities? Or is it because they do not see the value of conducting bottleneck analysis? In these cases, a closed meeting of

a few key stakeholders might be required to discuss the sector status and the value added of conducting a bottleneck analysis. This would be aided by showing examples from other countries. It is advised to identify a respected official or expert who understands the value of the tool.

## Step 2. Preparing the ground for a bottleneck analysis

Once the proposal to proceed with conducting a bottleneck analysis has the buy-in of key stakeholders, then the detailed preparations can begin. The lead ministries should be briefed what specific activities a bottleneck analysis entails, and what outcomes are expected from the process. Ideally, those facilitating the process will have attended an in-person training on the WASH-BAT or at least completed an online webinar.

A set of choices need to be made about the process, including (see Table 2 for further details):

- Which sub-sectors and administrative levels will be analysed, following the demand and need registered in Step 1 of the process;
- Timing of meeting(s) to ensure maximum participation of key stakeholders;
- Length and agenda of meeting(s) to use the time most efficiently and to include high-level segments;
- Participants list reflects different stakeholder groups;
- Location of workshop is convenient for participants and have required spaces for group work and technical facilities (e.g. internet access, projectors to aid group work);
- Organizing agency and facilitator have credibility among main stakeholders

It is advisable to call a meeting of those most concerned in the organization of the meeting(s), as well as ministry staff, to discuss these points to weigh up the advantages of different options. An overriding issue is that of having sufficient financial and human resources to ensure a strong support

to the entire process, from Step 1 to Step 6. As well as staff and consultant time, a major cost is the hiring of meeting venues as well as travel and board of stakeholders not living in proximity to the meeting location. Hence the meeting location, sub-sectors and jurisdictions analysed and number of participants will need to be adjusted depending on the funding available. Follow up meetings and M&E are likely to have a lower direct financial cost, but they will require allocation of staff time by the institutions involved. Table 2 provides further considerations for each of the choices to be made.

**Table 2. Issues to consider in organizing a workshop(s) for conducting WASH-BAT**

Aspect of organization	Issues to consider and general guidance
Sub-sectors and administrative levels to be analysed	Given that separate analyses are conducted for rural, urban, and peri-urban areas, and for water, sanitation, hygiene and institutional WASH, and by administrative level – it is important to decide on the scope of the workshop well in advance. It will have implications for the participants to be invited, the meeting location, and how to organize the meeting agenda and group work so that the complete bottleneck analysis can be conducted in the time available. In most cases, it will not be possible to proceed with all sub-sectors and jurisdictions in parallel; thus prioritization and a phased approach will be required.
Timing and length of meeting(s)	The timing of the workshop should be chosen to ensure a maximum number of key representatives and resource people are able to attend. Availability of key stakeholders should be collected before making the decision on meeting dates, and on whether it is held as a single longer meeting or a series of shorter meetings. Generally, a complete application of the WASH BAT needs a total of 3 to 4 days. Depending on how the workshop is broken up and the scope of work of the breakout groups, it could be shorter or longer. For some stakeholders, it is difficult to spend 3 days away from their regular duties. Options for breaking up the workshop are provided in Step 3.
Participants	The criteria for participation in the meeting(s) include (1) having broad participation which is representative of key stakeholders, (2) participants should be invited who will be committed and provide good quality input. Organizers should ensure that the breakout groups (per sub-sector and jurisdiction) are right-sized, which means approximately between 5 and 8 participants. Those involved in previous or other ongoing analytical exercises (e.g. GLAAS) need to be closely involved.
Location of workshop	While holding the meeting near to the regular workplaces of the participants may get good turnout, this might also lead to participants leaving the meeting to return to their offices. Holding the workshop at a venue more distant from participants day-to-day lives can lead to higher participation rates and better quality inputs as there is less distraction. On the other hand, using office space of one of the stakeholders can reduce the workshop costs. Most importantly, the workshop should be facilitated in a way that leads to maximum participation through motivational techniques and emphasizing the importance of participation in the group work. The main features of a venue include: sufficient space for interaction, including group work; a good internet connection, as the tool is online; projectors for each working group so that all participants can closely follow the tool as it is filled out; printing facilities for the interim outputs of the group work.
Organizing group and facilitator	The effort to organize a bottleneck analysis process, including one or more workshops, should not be underestimated. There should be at least one agency that is fully committed to its success from the start,

	<p>and ready to follow through to the logical conclusion. This agency should be a credible sector stakeholder, preferably having a good relationship with the government agencies responsible for WASH. The various events should also be fully costed to ensure budgets do not get exhausted and funds are sufficient until the end of the first cycle of the process (approximately 1 year). The organizing agency(-ies) might wish to contract a facilitator who has a degree of independence, and who is responsible to follow up with the partners and help with the organization and facilitation of the meeting(s). Preferably the facilitator will have previously attended a WASH-BAT training.</p>
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A second critical element of the preparatory phase is to establish how the bottleneck analysis can or will be linked with the policy processes. This might not be evident at first, but it should be raised in meetings with stakeholders to identify the opportunities and gather expectations. While the bottleneck analysis might result in recommendations for various policies and regulations, the most important policy processes to link to are those of planning and budgeting, both short (1 year) and long term (e.g. 5 years). Hence the timing of the WASH BAT meetings should be conducted well enough in advance to influence these.

The third critical element is the preparation of evidence for the bottleneck analysis, for use prior to the workshop and during/after the workshop. Studies and information to collect in advance include:

- WASH coverage estimates, including higher standards of ‘safely managed’ water and sanitation
- Ongoing monitoring initiatives
- Sector budgets and financing
- Previous sector analyses (that might include analysis of bottlenecks)
- WASH policies and sector studies (strategic plan, regulation, private sector)

An option to lighten the load on the group work at the workshop is for a working group to start reviewing and refining the criteria for each building block. However, the criteria to be assessed should still be open for changes during the workshop, as participants might have suggestions for improving them.

Finally, once the decisions are made on the workshop length, form and location, the various logistical arrangements need to be made: booking the venue, sending out invitation letters, travel arrangements and accommodation.

### **Step 3. Holding meeting(s) to conduct bottleneck analysis**

A proposed agenda outline for a three day workshop is provided in Table 3<sup>2</sup>. The agenda will need to be tailored to the specific needs of each WASH-BAT application, based on the sub-sectors and jurisdictions included, the seniority of people attending (e.g. a high-level segment) and the availability of speakers to deliver thought-provoking speeches as a respite to the long periods of group work. The opening and introductory segments are important to set the context, bring in international perspectives (e.g. the Sustainable Development Goals - SDGs) and invite participant

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<sup>2</sup> Example agendas from other countries can be shared on request to UNICEF HQ.

expectations. A (high-level) government representative should give the official opening and a speech that support the aims of the workshop. The full-length workshop agenda follows the flow of the tool, with three major segments or sessions: criteria selection and scoring; bottleneck analysis; and activities to remove bottlenecks. Sufficient time is needed to allow for unexpected delays, and at least half a day is needed to digest the findings and adjust these based on reflections once the overview of results is provided. For example, it will be important to identify similar or identical activities that are proposed by different groups and seek to combine these where possible; hence any double-counting of activity costs will need to be removed. Note that more detailed assessment of costs and financing will normally be required after the workshop closure. After each session, there should be opportunity for presenting interim results of each group, as there is often cross-fertilization of ideas and opportunity to assess overlaps as well as gaps.

Breakout groups are a key component of the workshop. It is advised that each group works through the entire tool for one sub-sector, covering one jurisdiction (e.g. rural or urban) and one administrative level. It might be feasible for a single group to work through sanitation and then go through hygiene as well to ensure aspects specific to hygiene are captured. It is also feasible for a group to go through national level, and then go through sub-national to assess what differences there are. However, one subgroup covering more than a single 'run' of the tool means less time for creative discussions and blue sky thinking that such a workshop often lead to. Hence the group work should not be overly pressurized.

**Table 3. Proposed agenda for a three day workshop**

DAY 1	DAY 2	DAY 3
<p>Plenary</p> <ul style="list-style-type: none"> <li>• Workshop opening</li> <li>• Introduction to the SDGs and current status of sub-sectors</li> <li>• Background on the enabling environment and decision making processes the BAT might influence</li> <li>• Overview of the workshop methodology and introduction to online tool</li> <li>• Participants' perspectives on the sector bottlenecks</li> </ul> <p>Group work</p> <ul style="list-style-type: none"> <li>• Review of building blocks and criteria per sub-sector</li> <li>• Adjusting the criteria</li> <li>• Scoring of criteria</li> </ul> <p>Feedback to plenary</p> <p>Printing of scored criteria</p>	<p>Plenary</p> <ul style="list-style-type: none"> <li>• Introduction to group work on identifying bottleneck and their causes</li> </ul> <p>Group work</p> <ul style="list-style-type: none"> <li>• Bottlenecks and their causes</li> </ul> <p>Feedback to plenary; review overlaps between sub-sectors</p> <p>Introduction to group work on activities to remove bottlenecks</p> <p>Group work</p> <ul style="list-style-type: none"> <li>• Review outputs in light of feedback, and overlaps within sub-sector</li> <li>• Assessment of activities, costs, financing, responsibility, timeline, and priority for additional funding</li> </ul>	<p>Group work</p> <ul style="list-style-type: none"> <li>• (...continued) Assessment of costs, financing, responsibility, timeline and priority for additional funding</li> <li>• Generating summary outputs</li> <li>• Group interpretation</li> </ul> <p>Feedback to plenary; review duplicate activities among groups</p> <p>Group work</p> <ul style="list-style-type: none"> <li>• Interpretation of main findings</li> <li>• Conclusions and policy recommendations</li> </ul> <p>Feedback to plenary</p> <p>Conclusions and next steps, with a view to influencing decision making processes</p>

There are alternative structures and formats from the single 3 or 4 day workshop. Two places where the workshop could be broken is the introductory part (a half day) and the concluding part (a half day).

- By having the introductory segment some days or weeks before the actual tool application allows the participants to reflect on the workshop objectives and prepare the information needed for the analysis, as well as selecting the right participants to attend. This type of discussion and information sharing should be part of the preparatory activities.
- By having the concluding session a few days or weeks after the tool application allows the participants to go away and reflect on the results and recommendations, before coming back and discussing how they can be used and taken forward. This time allows the completion of the BAT including the costs and financing whose details might not be captured during the workshop. It also allows more senior staff to be invited for the concluding session, especially if the main workshop was held away from the usual working place of the participants.

Other ways in which the tool application can be split is by breaking up the sessions of the bottleneck analysis. However, this risks disrupting the flow of the tool, and also different people available to attend different sessions would lose continuity that is critical for the tool's application. Note that for the third toolkit session, experts in costs, budgeting and financing of the activities need to be involved (even if they were not part of the earlier sessions).

At the workshop, it is advisable to have one main facilitator or moderator to help with managing the flow. The most important skill required for this person is facilitation and people skills, who is able to achieve the overall objectives of the workshop while remaining flexible on the smaller points. The facilitator does not need to be a WASH expert. In addition, the organizer should enlist the help of competent people who will be assigned to each group. They will need to be briefed (or trained) in the methodology to be able to explain it, and keep the group moving to ensure they complete their work in the given time.

The allocation of participants to groups should be worked out well in advance of the meeting, and the invitation to each participant should specify which group they are invited to contribute to. The groups should contain people with the knowledge and capacities to apply every module of the tool, and be as broadly representative as possible (government agency, external partner, decentralized level, implementer, and civil society).

The filled-out BAT file should be shared by the participant whose account has been used for filling in the toolkit. It should be shared with the other participants in the group work, other relevant stakeholders, and at least one workshop organizer.

The tool provides the user with the option of printing outputs that include different variables. Each evening (or at breaks), printouts can be made of the progress made the previous day, to facilitate absorption of the interim findings and to feed into the discussions on the next module.

There is a workshop report template, which can be generated by the user within the software. The software generates tables automatically from the filled in package, as well as a few other fields. One report is generated per toolkit application; hence if the workshop covers 4 subsectors then four different reports will need to be generated. The rapporteur (or someone who has been assigned responsibility) will need to complete the report, adding descriptive parts on background as well as

analysis and next steps, as guided by the template. The template includes annexes for a full participant list, the workshop programme and detailed costs and financing data.

#### **Step 4. Following up on the meeting(s), and obtaining government endorsement**

Following the workshop, there needs to be a further process for summarizing the outputs, writing a workshop report, and engaging with key stakeholders absent from the workshop. If some groups did not complete all the modules, responsibility should be assigned to complete it. In particular the estimation of activity costs and financing available might not have been completed, or conducted in depth – hence as the activities gain agreement, the costing and financing implications need to be checked and estimated with a greater degree of accuracy. If some parts of the tool could not be completed due to lack of information, plans should be made to generate the required knowledge. A brief report should be shared with the relevant Ministries, to gain endorsement from the Ministers or deputy Ministers. The actual decision making processes the tool findings will influence need to be identified, as well as the specific way in which the tool findings will feed into these processes. Once the priority activities are agreed, the financing needs to be found for the identified activities. If the funding is not forthcoming, funding proposals should be put together. As they move ahead, activities and their impacts need to be monitored and reported to a sector group periodically.

Having experienced the tool firsthand, responsible agencies should consider how relevant the WASH BAT is for other levels (e.g. sub-national) or other subsectors not yet analysed.

#### **Step 5. Implementing the endorsed recommendations**

Recommendations include both changes to the overall policy environment that need to take place and specific activities that need to be implemented to remove the bottlenecks. Without an overall vision and direction for each subsector, activities risk to be short-term and ineffective. However, eventually changes are driven through specific activities and hence these will form the core of the recommendations.

Application of the WASH-BAT gives an understanding on the linkages between the bottlenecks, an indication of the priority level of each bottleneck, and the likely sequencing for their removal. However, the tool does not currently allow for bottlenecks to be linked or provide a visual output that shows the order in which bottlenecks should be removed, and such outputs will have to be generated outside the tool. In some cases, the same activities are relevant for multiple subsectors and hence these need to be planned together, which can also lead to cost savings.

#### **Step 6. Conducting monitoring and evaluation (M&E)**

The implementation of activities needs to be monitored and progress fed back to stakeholders to allow course corrections. As activities are implemented, new constraints may surface which need to be addressed in a timely way. The tool can be updated to reflect these. However, the tool does not provide for regular monitoring of activities, and a separate system of activity follow-up will be needed based on the tool output sheets. After some time, the WASH-BAT can be repeated to assess how the situation has changed: the extent of activity implementation, the extent of bottleneck removal, and assessment of whether there are new bottlenecks to address or the nature of existing bottlenecks has changed. The frequency timing depends on the timing of internal decision making

processes of the government and major partners, and the appetite of the stakeholders to revisit the inputs of the tool. It also depends on the amount of change achieved. If most activities remain unimplemented, then instead an analysis should be focused on what the implementation bottlenecks are. Is it due to lack of political will, lack of funding, or lack of linking the WASH-BAT findings to local processes?

It is also advisable to plan for a more rigorous evaluation of the WASH-BAT implementation. This should reflect an independent view of whether activities have been implemented based on the recommendations, and with what impact. Have the recommended activities been implemented? If not, why not? If so, with what effect? Have bottlenecks been removed? Has the removal of bottlenecks lead to an improved enabling environment for progress to be made on WASH service coverage and use? After some years of removing bottlenecks, it might be possible to link (through a theory of change) the bottleneck removal with changes in the trajectory of WASH service coverage. However, in the shorter term any evaluation should focus on the changes in the enabling environment that can be attributed to the application of the WASH BAT and the activities that resulted from it. Due to the multiple influences on the enabling environment, there will be some uncertainties around assessing direct causality; while a broad assessment of the different contributing factors through monitoring activities and discussing with stakeholders can isolate to some degree of certainty whether the WASH BAT was influential or not.