Monitoring and evaluation for rural sanitation and hygiene
Guidelines

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Guidelines and framework

Summary

The monitoring and evaluation (M&E) Guidelines and Framework presented in this document (and in the accompanying M&E Indicator Framework) aim to encourage stakeholders in the rural sanitation and hygiene sector to take a more comprehensive, comparable and people-focused approach to monitoring and evaluation.

Many M&E frameworks currently reflect the interests and ambitions of particular implementing agencies – that is, community-led total sanitation (CLTS) interventions focused on open-defecation free (ODF) outcomes in triggered communities; market-based sanitation interventions focused on the number of products sold and whether sanitation businesses were profitable; and sanitation finance interventions reporting the number of facilities built using financial support.

Few M&E frameworks have been designed to examine the overall sanitation and hygiene situation – to assess how interventions have affected sanitation and hygiene outcomes across an entire area (rather than just in specific target communities); to look at who (from the overall population) benefitted from the intervention, and who did not; to report on the level and quality of service used; or examine whether public health has improved.

Since 2015, the Sustainable Development Goals (SDGs) have extended and deepened the international monitoring

requirements for sanitation and hygiene. The 2030 SDG sanitation target 6.2 includes requirements to:

- **Achieve access to adequate sanitation and hygiene for all**
- **Achieve access to equitable sanitation and hygiene for all**
- **End open defecation**
- **Pay special attention to the needs of women and girls**
- **Pay special attention to those in vulnerable situations**

The 2030 SDG sanitation target calls for universal use of basic sanitation services, and for the elimination of open defecation, both of which require M&E systems that cover entire administration areas (i.e. every person and community within a district) and which are able to identify people and groups that lack services, or continue unsafe practices. Fortunately, the SDG requirements are well aligned with the sector trend towards system strengthening, in recognition that governments are responsible both for the provision of sustainable services and for monitoring the achievement of sustained outcomes.

This document provides guidelines on the monitoring and evaluation of rural sanitation and hygiene, and presents an M&E framework that outlines core elements and features for reporting on progress towards the 2030 SDG sanitation target (and related national goals and targets for rural sanitation and hygiene), while also encouraging learning and accountability.

Given wide variations in the ambition, capacity and resources available for monitoring and evaluation, it is apparent that not all of the M&E processes and indicators described will be appropriate for all stakeholders. The intention is to provide guidelines and details on useful and progressive approaches to monitoring rural sanitation and hygiene, from which a range of rural sanitation and hygiene duty bearers and practitioners – including governments, implementation agencies, development partners and service providers – can select and use those most appropriate to their needs. Eventually, it is hoped that all of the more progressive M&E elements and features will become standard, and be incorporated in all sector monitoring systems.

Methodology

The M&E guidelines and framework were developed from a review of existing guidance on monitoring and evaluation for rural sanitation and hygiene; reviews of the current and proposed M&E systems used by major implementation agencies; and a series of consultations with key sector stakeholders on what has worked well, what has not worked well, and what sort of M&E is likely to be required in the future.

Two formal consultation processes were held: the first process, in July 2020, canvassed opinion on the need for guidance on M&E for rural sanitation and hygiene, and collected suggestions on what sort of content and examples of good practice should be included in the guidance. The second consultation process, through three online workshops in April–May 2021, presented the draft M&E guidance and framework to groups of strategic sector actors (working at global or regional levels, or in a more policy-focused or strategic role) and groups of other sector practitioners (working at national or programme levels, in more implementation-focused roles). Feedback and comments were collected from the various consultation processes and used to revise and improve this final version of the M&E guidelines and framework.

Principles of monitoring

The development and use of M&E systems for rural sanitation and hygiene should follow both some general principles of good programming and some more specific guidance on good monitoring practice.

All rural sanitation and hygiene activities should address three key themes (equity, scale and sustainability) and follow four principles:[1] **working in partnerships** (working with government in coordination with other stakeholders); **using area-wide approaches** (across entire administrative units); **implementing based on context and evidence**; and **allowing for flexible and adaptive management.** These general programming principles have important implications for M&E: a partnership approach encourages the use and strengthening of government M&E systems for WASH; an area-wide approach implies that M&E systems have to cover everyone; similarly, context- and evidence-based approaches rely on systems that collect and share information on outcomes and processes in the targeted contexts; and, finally, flexible and adaptive management requires regular feedback from M&E systems on what works, and what does not.
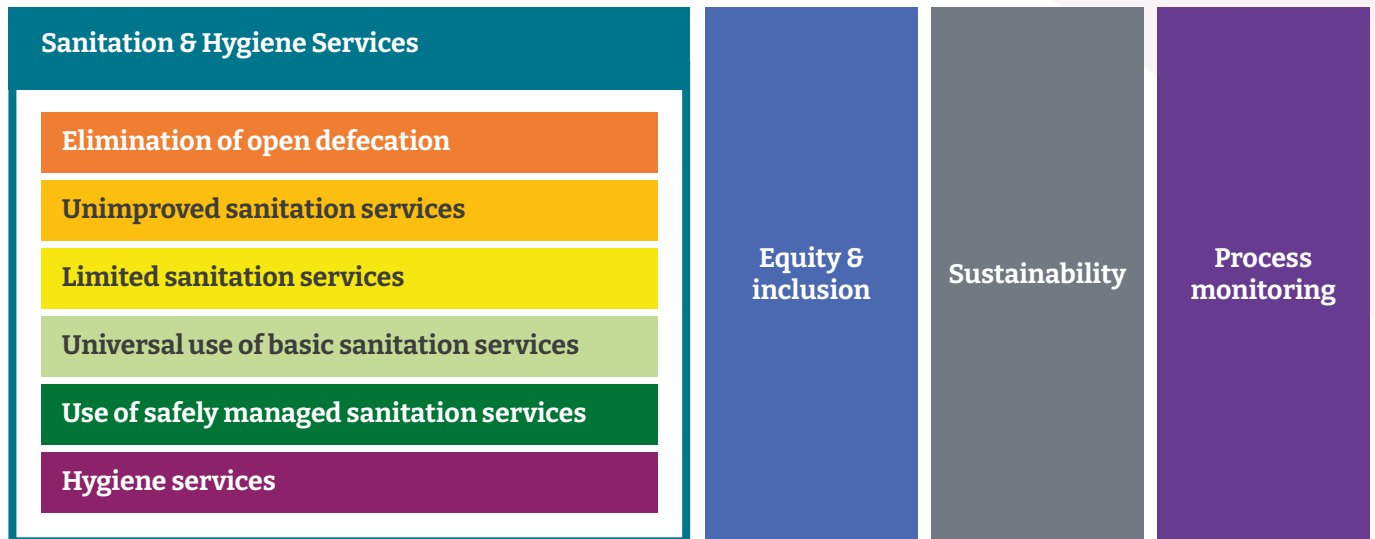
Detailed monitoring principles:

- Only collect data if it is clear how it will be used to benefit the target group.
- Involve programme stakeholders (including service users) in indicator development.
- Use SMART indicators (specific, measurable, attainable, relevant and time-bound).
- Check that target indicators are able to change within five years (or other time period relevant to national or programme goals).
- Obtain informed written or verbal consent from respondents, and put safeguarding procedures in place ('do no harm' principle).
- Do not include any identifying information in shared data.
- Do not generalise findings from a non-representative sample to a larger group.
- Share information with stakeholders and decision-makers regardless of the findings.

Front cover image: Shazia Qasim, 24, in front of the washroom in her home in the village of Chaoni, District Muzaffargarh, Province Punjab, Pakistan, December 2017. (Credit: WaterAid/ Sibtain Haider)

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1   WaterAid (2019) Guidance on programming for rural sanitation London: WaterAid, Plan International and UNICEF Joint Guidance document.

M&E framework for rural sanitation and hygiene

Sanitation & Hygiene Services	Equity & inclusion	Sustainability	Process monitoring
Elimination of open defecation			
Unimproved sanitation services			
Limited sanitation services			
Universal use of basic sanitation services			
Use of safely managed sanitation services			
Hygiene services			

The M&E indicator framework, with supporting examples, is presented in nine tables (in supporting document: M&E Indicator Framework):

- **Indicator Table 1.1** Elimination of Open Defecation
- **Indicator Table 1.2** Elimination of Unimproved Sanitation Services
- **Indicator Table 1.3** Use of Limited Sanitation Services
- **Indicator Table 1.4** Universal Use of Basic Sanitation Services
- **Indicator Table 1.5** Use of Safely Managed Sanitation Services
- **Indicator Table 1.6** Hygiene Services
- **Indicator Table 2.0** Equity and Inclusion
- **Indicator Table 3.0** Sustainability
- **Indicator Table 4.0** Process Monitoring

What should be monitored?

The M&E framework above provides a list of some of the main elements that should be monitored. However, M&E systems should be primarily be designed to collect, analyse and report the information that practitioners and decision-makers consider essential. These two groups are likely to have different interests – practitioners tend to be more interested in the details, and in how processes are working; whereas decision-makers are usually more interested in results (and costs). And the M&E system should also recognise that these stakeholders are likely to have different priorities and capacities in different contexts. In all cases, both practitioners and decision-makers need to be consulted and involved in the design and implementation of M&E systems.

The other important group to consider and consult is the users of the services: these individual and community users often need information on service outcomes and service quality to hold local governments and service providers accountable, and it is always important to remember that the end goal of all of these investments and activities is

that people use safe and sustainable sanitation and hygiene services, and are satisfied with these services and with their sanitation and hygiene outcomes.

How should it be monitored?

A good M&E system demands multiple methods and tools working together in complementary fashion to provide a comprehensive understanding of changes over time. The most complete picture of change emerges when both qualitative and quantitative assessment tools are used – for instance, surveys that generate quantitative data on changes in awareness, participation, outcomes, and impacts, alongside qualitative methods like focus group discussions that aim to describe how and why change happened.

Monitoring and evaluation also have costs. Not least of these is the time taken to process, analyse and use all of the data or information collected. Web-based systems and mobile monitoring have greatly increased the efficiency of some forms of monitoring and evaluation (e.g. household surveys). Yet some carefully collected data never get reported and never get used, so the scope and complexity of the M&E system needs to match the demand for data, as well as the capacity and resources available to operate and maintain the M&E system.

Some form of data verification and validation process is important to all M&E systems. The old adage 'rubbish in equals rubbish out' holds true, however sophisticated the technology used to collect, upload and report the information. A robust verification and validation system can significantly improve data quality and reliability, not least because monitors know that someone is looking over their shoulder, and that there is a good chance that any mistakes or mis-reported data will be spotted and addressed.

Both internal (by the implementer), external (by independent bodies) and user verification processes are recommended. Internal verification checks strengthen the monitoring process, helping to identify common problems and errors early in the process, which then encourages improved training, closer supervision of monitoring processes, and more reliable

work by monitoring teams. External verification checks professionalise the monitoring process, helping to identify risks within monitoring systems, with systematic checks used to identify weaknesses and spot errors that might affect results. User verification processes provide communities and service users with a chance to review the information being reported on their services and outcomes, generating some downward accountability and ensuring that the end goal of all of these processes and activities is not forgotten.

Monitoring against service levels

The M&E framework contains a number of related indicators (e.g. multiple indicators related to household latrine use and management), which have been presented in different sections to reflect the service levels used by the Joint Monitoring Programme (JMP) for international monitoring of sanitation and hygiene progress. When in use, it is recommended that M&E systems are designed to monitor against a range of service levels for each of the main indicators, with key monitoring criteria defined for each service level. Service levels and outcomes are then graded using traffic light systems.

Who should undertake monitoring?

M&E can be extractive – designed to produce information for donors, sector organisations and, sometimes, for governments. Insufficient effort is made to ground-truth findings by sharing and discussing them with the people, marginalised groups and communities whose lives are being monitored. M&E can also involve questionable ethics – with the possibility of misleading and exploiting people, for example through requiring participation in lengthy processes of uncertain benefit to the participants.

The involvement of communities and marginalised groups in the design, implementation, reporting and use of M&E information can strengthen the M&E processes and increase the benefits (through participant validation, feedback and additional insights on the M&E findings). As the equity and inclusion literature suggests, there should be 'nothing about us without us'!

Involvement of community members and local stakeholders can also ensure that routine monitoring by community volunteers and extension workers is not too demanding. Community-level monitoring work is only one part of the duties of most volunteers and extension workers, thus it should be complemented by periodic monitoring by people who are supported to undertake any more complex and time-consuming assessments that may be required.

Design M&E systems for use and learning

M&E systems need to be designed for use and for learning. M&E findings are of little use if they are not readily accessible and easily understood, or do not match the interests of key stakeholders (decision makers, practitioners and service users).

M&E systems should also ensure systematic dissemination of information and lessons learned. There is no point collecting lots of good data and information, if the data then sits in a database and nobody gets to see it. Active

and regular sharing of information requires capacity and budget, e.g. for quarterly reflection meetings or annual reviews, thus it is important that M&E systems are designed and supported to encourage regular data use and strengthen learning systems.

Finally, M&E systems need to be progressive and flexible, so that they can evolve to meet new sector needs and priorities, without exceeding the capacities and resources of the government systems responsible for rural sanitation and hygiene services. And where national systems are likely to take time to adapt and evolve, the benefits of new M&E approaches and indicators should be demonstrated through specific programme and subnational systems, with the lessons learned from these local experiences then shared to advocate for long-term change at national level.

M&E guidelines and framework

The M&E guidelines and framework highlight effective real-world examples of monitoring (and evaluating) rural sanitation and hygiene services. It is hoped that some of the monitoring indicators and related data collection approaches are new to readers – or at least provide a different slant on the monitoring of some familiar outcomes and behaviours, and that this information encourages the adoption of more progressive and informative monitoring practices. The guidelines also provide a range of practical advice on how to improve monitoring practice, and ultimately work towards more effective and sustainable M&E systems. While most of it will be familiar to experienced M&E practitioners, it is hoped that there are a least a few new ideas and lessons in there for everyone.

Contents

Glossary and Abbreviations

CHC   Community health club

CLTS   Community-led total sanitation

DHS   Demographic and health survey

FGD   Focus group discussion

HH   Household

JMP   WHO–UNICEF Joint Monitoring Programme for Water Supply and Sanitation

ODF   Open defecation free

SDG   Sustainable Development Goal

UNICEF   United Nations Children's Fund

WASH   Water, sanitation and hygiene (sector)

WHO   World Health Organization

Acknowledgements

Monitoring and evaluation for rural sanitation and hygiene
Guidelines and framework

PART 1: INTRODUCTION

1.1 Why do we need an M&E framework for rural sanitation and hygiene?

Rural sanitation and hygiene outcomes are fashioned by many different behaviours,facilities, services, and activities. These outcomes occur in many settings and at different scales: from household level (e.g. use of toilets and handwashing with soap) to community level (e.g. open defecation free [ODF] status) and beyond (e.g. faecal sludge management services; district-wide sanitation outcomes). In order to encourage beneficial outcomes, sanitation actors implement a wide range of interventions, including community-based approaches (e.g. community-led total sanitation), market-based sanitation activities with private-sector partners, behaviour change campaigns, and the development and strengthening of local government services and systems.

While sanitation stakeholders are generally interested to know the overall status and outcomes resulting from the use of rural sanitation and hygiene services, most sanitation stakeholders have a particular perspective on the subsector, which influences their areas of interest and attention. This interest may be driven by their roles and responsibilities (e.g. local government responsible for services); their involvement in a specific programme (e.g. implementing agency) or activity (e.g. latrine producer); or their use of the services. As a result, monitoring and evaluation of rural sanitation and hygiene outcomes and services are often partial, covering only some

outcomes, or some services, in some areas or settings, depending on the priorities and interests of those involved in the monitoring and evaluation activities.

In 2017, the Sanitation Learning Hub at the Institute of Development Studies (IDS) undertook a mapping of the different external support mechanisms used in rural sanitation and hygiene interventions, with the aim of examining the advantages and disadvantages of the different support mechanisms. More than 50 projects and interventions were examined. It quickly became apparent that the interventions had been monitored and evaluated in many different ways with many different objectives, which made analysis or comparison of the results difficult.

Some interventions reported the number of people gaining sustained use of improved sanitation (since baseline); some reported the number of toilets sold or number of loans provided; others reported on final access to sanitation, or on the number of people now living in ODF communities (without providing information on the baseline situation). Most monitoring and evaluation reports focused on a specific target population (e.g. people living in selected project communities), rather than on how the intervention had affected the entire area (e.g. the administrative unit, such as the district); and very few of the monitoring and evaluation reports provided information on how services and outcomes varied within the target population (e.g. disaggregated data on outcomes in poor and marginalised groups, or differences in satisfaction with services or outcomes), or on whether interventions had reached previously under- or unserved groups. Also, the sustainability of outcomes and the sustained

use of services over time were rarely examined, and very few evaluations included any assessment of cost efficiency or cost effectiveness.[2]

Since 2015, the Sustainable Development Goals (SDGs) have extended and deepened the international reporting requirements for sanitation and hygiene. The 2030 SDG sanitation target (JMP 2019) includes requirements to:

- **Achieve access to <u>adequate</u> sanitation and hygiene for all**
- **Achieve access to <u>equitable</u> sanitation and hygiene for all**
- **End open defecation**
- **Pay special attention to the needs of women and girls**
- **Pay special attention to those in vulnerable situations**

The new SDG requirements are far more comprehensive than the previous Millennium Development Goals, with a renewed focus on the use of services over time, and on the quality and equity of those services. While the SDG requirements are specific to the international monitoring of progress by the United Nations system, most low- and middle-income countries have signed up to the Sustainable Development Agenda, and committed to achieving the SDGs by 2030. Gradually, national policy frameworks and planning targets are being updated to include the higher-level outcomes required by their international and domestic commitments. Consequently, most national (and programme) monitoring and evaluation (M&E) systems need to be revised and strengthened in a number of areas.

The 2030 SDG targets for universal use of basic sanitation services, and for the elimination of open defecation, require M&E systems that cover entire administration areas (i.e. every person and community within a district) and are able to identify people and groups that lack services, or continue unsafe practices. These requirements are well aligned with the sector move towards system strengthening, in recognition that governments are responsible for the provision of sustainable services and for monitoring the achievement of sustained outcomes, while also introducing a number of progressive developments (see Section 1.3 below).

Key definitions

Monitoring and evaluation are understood differently by different sectors, organisations and people, with the boundary between the two often blurred. For the purposes of this document, the following definitions have been adopted:

Monitoring: continuous and regular review, often of indicators of progress or performance.

Evaluation: systematic collection, analysis and use of information, usually to answer questions, improve understanding and inform future decisions and actions.

System: all of the people, processes, institutions (e.g. ministries and partners) and other factors that influence service delivery (e.g. sanitation improvement, monitoring, sustainability support etc.) in a given context.

There are many different types of monitoring, and many types of evaluation. The key difference is that monitoring is usually a continuous and regular process with a fixed frequency and well-defined monitoring indicators, whereas evaluation tends to have a specific purpose and timing (e.g. at the start and end of a programme to assess changes and impacts during the life of the programme, or a one-time activity to learn about a specific issue), with the purpose and timing influencing the evaluation objectives, processes and the indicators selected.

Monitoring systems generally report changes in specific indicators over time, with factual descriptions of these changes that have little need for interpretation and analysis. In contrast, evaluation processes seek to attribute and better understand outcomes, effects and impacts, which often requires the collection of a large body of information (from both quantitative and qualitative processes, including monitoring information) and the establishment of counterfactuals (e.g. evaluation of changes in a comparison or control group against those in the main target group).

There are some grey areas: an annual household survey might be classed as periodic monitoring if it merely expands or interrogates the monitoring data collected through other routine monitoring processes. However, if the annual survey includes wider learning questions that require some analysis (e.g. to assess changes in outcome or impact), or other elements intended to assess intervention effectiveness or efficiency, then it should probably be classed as a periodic evaluation.

In internal meetings and planning processes, we are constantly assessing the progress of our work. We frequently share valuable insights about what we are learning, what we have achieved, the setbacks we have suffered; we identify who and what is behind both the challenges to our work and the progress we have made; and we analyse why we think change has – or has not – happened. This is exactly what monitoring and evaluation means. The task is thus to transform this internalised habit of analysis and learning into more systematic and articulated forms that can be shared with others – not just the donors who may require the information, but others who could learn from our experiences and insights. (Batliwala 2011)

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2   Cost-effectiveness is defined more generally in this document as the cost per unit outcome, or value for money (rather than the specific health economics definition of cost per unit increase in health outcome).

1.2 Objectives

This document aims to provide guidelines on the monitoring and evaluation of rural sanitation and hygiene, and present an M&E framework that outlines core elements and features for reporting on progress towards the 2030 SDG sanitation target, while also encouraging learning and accountability. The M&E framework is presented in more detail in the Monitoring & Evaluation Indicator Framework (which should be read together with these guidelines). The guidelines and framework also recommend some more progressive M&E elements and features, which some rural sanitation and hygiene programmes and national M&E systems may not yet be ready for, but which should eventually be included in all sector systems.

Given the broad M&E requirements listed below (see Section 1.3 and Part 2), detailed guidance is not provided on every aspect of rural sanitation and hygiene. Instead, stakeholders are encouraged to ensure that M&E systems address each of the critical areas listed, and consider the key issues highlighted by the guidelines in Part 3. Where appropriate, readers are also directed towards other resources that offer more detailed information and guidance.

The objective is to encourage more comprehensive and well-aligned M&E systems that provide good information on rural sanitation and hygiene services, outcomes and impacts, which can be compared against information from other systems. However, good M&E information rarely changes anything on its own. Therefore, it is important that M&E systems are not designed or used in isolation – they need to be well connected to management, governance and accountability systems, and designed to provide reliable, timely, and relevant information that will be used to strengthen and improve rural sanitation and hygiene services and systems.

Wherever possible, M&E indicators, processes and systems should:

- **Align with government and sector systems;**
- **Aim to monitor (or evaluate) across entire administrative areas; and**
- **Involve local stakeholders in the M&E design, implementation, and reporting processes.**

Government M&E systems often take time to revise and expand, and may currently lack the capacity and resources to monitor all of the areas required by the SDG sanitation target. Therefore, in the short- to medium-term, other sanitation actors (e.g. donors and implementation agencies) may have to develop and test some of the more progressive M&E indicators and processes promoted in this document. This could, for example, be through partnership with local governments that test expanded M&E systems in sub-national systems, with the long-term aim of demonstrating their utility and cost-effectiveness, and supporting their inclusion into government M&E systems.

1.3 How is the proposed M&E framework different?

The M&E guidelines and framework set out in this document, and in the supporting M&E Indicator Framework, aim to provide a comprehensive overview of the key rural sanitation and hygiene areas and indicators that progressive monitoring systems (either national, programme, or organisational) should be measuring.

Implications of the SDG sanitation target

The 2030 SDG sanitation target requires a number of important changes in the way that rural sanitation and hygiene are monitored and evaluated. Firstly, the quality of sanitation services needs to be better assessed in order to check 'adequacy', which includes the new concept of 'use of safely managed sanitation services'. Previous M&E systems for sanitation and hygiene focused largely on access, by tracking households who gained access to the required sanitation and hygiene standards through simple binary systems (households with, or without, access to a type of toilet or handwashing facility thought likely to result in a hygienic outcome).

The new emphasis on the use of safely managed services highlights two important aspects: the first is that adequate sanitation is not just about gaining access to a sanitation facility, but also about the safe management and use of a sanitation facility or service over time. The second is that sanitation services may extend beyond the household facility, if containment systems need to be emptied or replaced, or faecal sludge has to be handled, transported, treated, disposed, or used by service providers and local authorities.

The SDG sanitation target also requires that everyone uses equitable sanitation and hygiene services, and that the results are sustained to 2030 and beyond. As a result, M&E systems for rural sanitation and hygiene need to be designed for:

- **Monitoring of household sanitation services:** use of safely managed sanitation services (notably safe excreta containment).
- **Monitoring of off-site sanitation services:** emptying, transport, treatment, and disposal services provided by service providers and local authorities.
- **Monitoring of services and outcomes among groups with potential for different or lower outcomes** (e.g. disaggregation of data on marginalised groups).
- **Universal monitoring:** across all people and communities in all areas (area-wide monitoring).
- **Hygiene monitoring:** the practice of handwashing with soap at critical times.
- **Regular monitoring over time:** frequent checks on changes in sanitation services and outcomes over time.

Most sanitation and hygiene M&E systems include some measures of equity or inclusion, but these measures are rarely designed to provide reliable, comparable, or comprehensive information on the equitable use of sanitation and hygiene services, or to assess whether these outcomes and impacts remain equitable over time (for instance, because facilities and services used by people from marginalised groups tend to be less appropriate, less durable, and less well sustained).

Better assessments of access to equitable sanitation and hygiene for all will require **more rigorous and systematic monitoring and evaluation of equity and inclusion.** In addition, a range of different M&E approaches and systems are required, including both qualitative and quantitative methods to allow better assessments of equity and inclusion in rural sanitation and hygiene over time; to ensure that any negative outcomes and impacts are captured and analysed; and, perhaps most importantly, to ensure that learning is shared with both users and decision-makers, so that services can be made more effective, more equitable, and more inclusive.

Other sector trends are also encouraging more frequent and more detailed M&E systems. Increasingly, rural sanitation and hygiene programmes use adaptive management, whereby real-time monitoring systems (and rapid action learning)[3] provide rapid feedback to managers on performance and progress, and allow evidence-based refinements and revisions to policy, strategy, and practice.

Sustainability monitoring is another important requirement for a rural sanitation and hygiene M&E system. Facilities degrade, containment systems fill up, new services may be required (e.g. emptying and disposal services), populations shift and demographics change, natural events take place, systems evolve, and government policies are rethought and, as a result of these many potential changes, **the use and management of facilities and services can vary considerably over time.** Accordingly, it is important that M&E systems are designed to make regular checks on the safe use and management of sanitation services.

M&E of systems is also required: for example, assessments of whether systems (e.g. sustainability support, planning, finance, capacity development, regulation) are functioning efficiently and effectively, and whether all of the required systems are in place to ensure equitable and sustainable delivery and use of sanitation and hygiene services. That said, systems are not the main focus of this guidance and framework, with only limited guidance provided (largely to point towards other useful sector resources).

Rural sanitation and hygiene programmes generally include some monitoring of the use and effectiveness of programme processes. Process monitoring can provide useful information on implementation fidelity (whether or not activities and processes were implemented as intended, and the quality of this implementation) to inform both evaluations of effectiveness and impact, as well as ongoing efforts to refine and improve programme implementation. However, process monitoring is generally specific to each intervention (which may change over time); thus the M&E framework provides only some generic suggestions of typical process indicators and processes.

Finally, M&E systems should also examine programme (or intervention) costs, benefits, and impacts, to enable assessments of cost efficiency and cost-effectiveness (i.e. the unit cost of achieving specific sanitation and hygiene outcomes, and also, where appropriate, the cost

to achieve specific public health benefits, such as DALYs[4] averted). The level of the cost tracking and impact evaluation will vary significantly across programmes, with some programmes only undertaking basic cost tracking and simple assessments of the beneficial outcomes achieved, and others undertaking more detailed cost assessments and more rigorous impact evaluations (e.g. large programmes with research components).

M&E based on a theory of change

Many sector organisations use a 'theory of change' or logical framework approach to describe how interventions can bring about the desired long-term outcomes and impacts through a logical sequence of intermediate outcomes (UNDAF 2017; INTRAC 2015; Vogel 2012). These approaches encourage organisations to define the long-term change that is sought, and determine what needs to change to achieve this goal.

These descriptive tools are then used to plan, design, and measure the results of the interventions. The theory of change is usually developed through a consultative and participatory process, in which stakeholders reflect on how interventions can bring about change, giving consideration to any assumptions and the role of context, and using evidence to justify the proposed causal pathways. A theory of change approach encourages clear and structured thinking on what needs to be changed, and offers guidance on what needs to be monitored and evaluated to assess whether interventions are achieving the goal (the set of outcomes and impacts assumed by the theory of change).

However, most countries already have sector policies, strategies, plans, and technical standards (both in the WASH sector and in other related sectors) that define national goals and objectives, and many have also committed to a number of international targets and frameworks, such as the SDGs or other regional commitments like the 2015 Ngor Declaration.[5]

These national and international policy frameworks include key sector outcomes and indicators that need to be monitored and reported by national and subnational systems. Nonetheless, in low-income countries, these policy requirements are not always well reflected in national monitoring systems – often it is only the headline figures on sanitation access that are regularly reported.

As noted earlier, different governments and sector organisations have different agendas and interests, and allocate different levels of capacity and resources to M&E, which inevitably influence their results frameworks, the associated M&E frameworks, and the indicators that are systematically monitored or evaluated. M&E frameworks should both reflect national and international policies and plans, and be based on a theory of change, so that the main indicators provide useful information on progress towards long-term outcomes and impacts, and on the processes and lessons learned from this progress.

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3   www.ids.ac.uk/publications/rapid-action-learning-for-sanitation-and-hygiene-programming/

4   DALY = Disability Affected Life Years (a measure of overall disease burden, expressed as the number of years lost due to ill health, disability or early death).

5   www.ircwash.org/sites/default/files/ngor_declaration_print_version.pdf

M&E investment

Most stakeholders agree that better monitoring and evaluation systems are important to track progress towards these higher service levels and to better understand what works and what does not (and ensure that this learning is fed back into policy, programming, and practice). However, there is less consensus on how much to invest in systems for monitoring, evaluation, and learning, or on how these M&E investments affect overall performance and results (given trade-offs in the amount of funds available for other implementation activities i.e. every additional 1 per cent spent on M&E means 1 per cent less spent on other activities).

A 2014 OECD survey of development organisations found that 53 per cent of respondents reported M&E investment at less than 2 per cent of programme budget, with another 28 per cent reporting 3–5 per cent investment, and the remaining 19 per cent reporting investments of 6–10 per cent of programme budget. Importantly, 55 per cent of respondents agreed that a lack of financial resources was the main challenge around monitoring and evaluation (KPMG 2014).
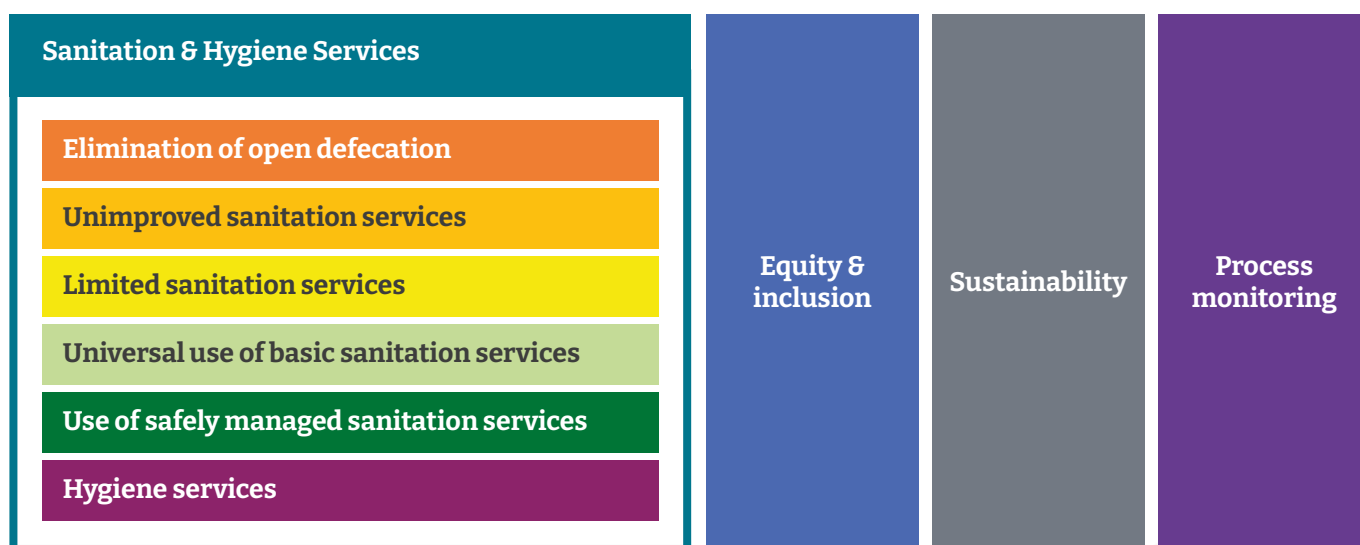
The rural sanitation and hygiene sector has generally weak monitoring, particularly at national level; it is extremely hard to collect and report sanitation and hygiene data on every rural household in the country, and many national and programme systems struggle even to count toilets reliably (as confirmed by checks made by independent verifiers in programmes like the 2014–2020 DFID WASH Payment by Results programme, where the stronger monitoring systems developed for the payment by results programme often exposed weaknesses in previous or existing systems).[6] Given this challenge, it is also rare to find reliable large-scale data on the quality of sanitation services, handwashing practice, or the use of sanitation services by people from marginalised groups, or on more qualitative issues like satisfaction with services.

Where reliable data and information are available, these are often collected by endline programme evaluations or periodic multi-sector household surveys[7] rather than by routine monitoring. Unfortunately, most endline evaluations take place when implementation is finished, with the evaluation results often not available until several months after programme completion (when, in many cases, the follow-on programme has already started in order to avoid losing programme staff or having gaps in service delivery). As a result, stakeholders often have only limited information about what is working, and what is not, during the life of the programme.

Guidance on rural sanitation and hygiene programming now recommends that M&E information should be collected and analysed frequently, and rapidly fed back into decision-making processes, so that the best can be made of the capacity, resources, and time invested in these interventions and in the related support mechanisms.

Given the limited data available on programme and national M&E (or other) system costs, no clear guidance can be provided on the optimal amount to invest in monitoring, evaluation and learning. However, it seems clear that better and more rapidly available information on what is working, what is not working, and whether gains are equitable and inclusive, enables the refinement and improvement of rural sanitation and hygiene strategies and approaches, thus is likely to greatly increase the chance that sanitation targets will be met. Therefore, adequate and dedicated budget lines and capacity allocations are essential for M&E (and learning) in all rural sanitation and hygiene systems. But it is also important that M&E systems are both cost-effective and sustainable; efforts should be made to collect data using simple systems that are aligned with and strengthen existing government M&E systems, can be supported by local governments, and build on existing capacity and knowledge.

Main elements of M&E framework

Sanitation & Hygiene Services	Equity & inclusion	Sustainability	Process monitoring
Elimination of open defecation			
Unimproved sanitation services			
Limited sanitation services			
Universal use of basic sanitation services			
Use of safely managed sanitation services			
Hygiene services			

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6   Personal experience of the author (as lead verifier on the SNV Sustainable Sanitation and Hygiene for All programme with the DFID WASH Payment by Results programme).

7   Such as 10-year censuses or DHS, MICS, LSMS and PMA surveys (which may take place every 3–5 years).

The main elements of the M&E framework should be included in all M&E systems for rural sanitation and hygiene. The main elements include data collection on the different sanitation and hygiene service levels, and cross-cutting elements to collect data on equity and inclusion, sustainability, and system processes.

Key elements of the M&E framework include:

1. **Use of safely managed sanitation services (i.e. safe containment at the household level; safely managed off-site services where appropriate).**
2. **Elimination of open defecation (including safe disposal of infant and child excreta, and monitoring of individual practice).**
3. **Handwashing with soap (presence of facility, water, and soap; practice at critical times).**
4. **Equity and inclusion (disaggregation of all indicators, plus qualitative measures of services and outcomes).**
5. **Sustainability (i.e. changes in services and outcomes over time).**

Guidelines on use of the M&E framework are provided in this document, which should be read alongside the M&E framework (supporting document). The following sections of the M&E framework document detailed indicators and examples of data collection tools for each of the main M&E areas:

See Section 2.3, A. Elimination of open defecation and Table 1.1 in the M&E framework for further detail and examples of indicators and data collection tools.

See Section 2.3, E. Use of safely managed sanitation services and Table 1.5 (in the M&E framework) for further detail and examples of indicators and data collection tools.

See Section 2.3, F. Hygiene services and Table 1.6 in the M&E framework for further detail and examples of indicators and data collection tools.

See Section 2.4 Equity and inclusion and Table 2.0 in the M&E framework for further detail and examples of indicators and data collection tools.

See Section 2.5 Sustainability and Table 3.0 in the M&E framework for further detail and examples of indicators and data collection tools.

Additional elements of M&E framework

Where resources and capacity allow, the following additional elements of the M&E framework should also be included:

6. **Process monitoring.**
7. **Costs.**
8. **Systems strengthening.**
9. **Impact.**

See Section 2.6 Process monitoring and Table 4.0 in the M&E framework for further detail and examples of indicators and data collection tools.

Areas not included in the M&E guidance and framework

M&E of sanitation and hygiene in the following settings and situations are specifically not addressed in either the M&E guidelines or framework (in order to restrict the length and complexity of the documents):

- **Urban sanitation and hygiene.**
- **Institutional sanitation and hygiene (in schools, health care facilities, and other public places).**
- **Sanitation and hygiene in complex emergencies.**

The following websites and publications provide further guidance in these areas:

WASH in schools: WinS website (UNICEF & partners) www.washinschoolsindex.com

WASH in health care facilities: WHO & partners www.who.int/water_sanitation_health/facilities/healthcare/en/

Urban sanitation & hygiene: City-Wide Inclusive Sanitation https://citywideinclusivesanitation.com

WASH in complex emergencies: UNHCR WASH monitoring for refugee settings https://wash.unhcr.org/wash-monitoring-system/

Oxfam (2017) *Monitoring and Evaluation Framework for WASH Market-based Humanitarian Programming: Guidance Document Oxford:* OXFAM

Guidance on the other additional M&E areas (costs, systems strengthening, and impact evaluation) is beyond the scope of this document, largely because good guidance is already available – for further references in these areas see Section 2.7.

Furthermore, the following areas were not included in the M&E framework either because the approaches and materials were not considered to be fully tested and appropriate (for large-scale and cost-effective use), or because materials were not readily available:

- **Social norms (several examples available, but limited evidence available on the cost-effectiveness of monitoring).**
- **Detailed monitoring of particular sanitation and hygiene approaches, e.g. CLTS, market-based sanitation (although core process monitoring indicators were suggested for these approaches).**

1.4 Methodology

The M&E guidelines and framework were developed from a rapid review of existing guidance on monitoring and evaluation for rural sanitation and hygiene; reviews of the current and proposed M&E systems used by major implementation agencies; and a series of consultations with key sector stakeholders on what has worked well, what has not worked well, and what sort of M&E is likely to be required in the future.

Given the existence of detailed guidance on many aspects of sector monitoring and evaluation, these guidelines are not an attempt to rewrite or replace existing documents. Instead, the guidelines and M&E framework aim to build on and highlight good sector materials that are already available (as recommended by specialists from the diverse areas to be monitored and evaluated), direct the reader towards detailed guidance where relevant, and fill any gaps with information on practical and well-tested indicators, tools, and approaches.

Wherever possible, specific examples of good practice have been included to illustrate how particular outcomes are monitored (or evaluated) in different contexts by different stakeholders.

Two formal consultation processes were held: the first process canvassed opinion on the need for guidance on M&E for rural sanitation and hygiene, and collected both suggestions on content and examples of good practice that could be included in the guidance. The second process presented the draft M&E guidance and framework in three online workshops to groups of strategic sector actors (working at global or regional levels, or in a more policy-focused or strategic role) and groups of other sector practitioners (working at national or programme levels, in more implementation-focused roles). Feedback and comments were collected from the various consultation processes and used to revise and improve this final version of the M&E guidelines and framework.

A latrine in Hells Gate community, Nakuru county. The owners, John and Virginia Njogu built the toilet after there community was triggered. Solomon Ndungu a CLTS coordinator and Ekrah Wairimu a local VSC make a follow visit to inspect the latrine and hand washing station along with a Peter Murugu a PHO (Credit: Jason Florio)

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8   This document assumes that different stakeholders in different contexts will use the measurement processes and indicators described for either monitoring, or for evaluation, indifferent ways at different times. Therefore, no attempt has been made to suggest that processes or indicators are specific to routine monitoring, or to a particular type of evaluation.

Monitoring and evaluation for rural sanitation and hygiene
Guidelines and framework

PART 2: M&E FRAMEWORK

2.1 Principles of monitoring

All rural sanitation and hygiene activities should seek to address three key themes (equity, scale, and sustainability) and follow four principles (WaterAid 2019):

- **Partnerships:** work with government, in coordination with other sector stakeholders and through alliances with other sectors (including health, education, finance, and environment).
- **Area-wide:** work with local governments and strengthen local systems, by working across entire administrative units and targeting everyone within those units (to ensure inclusion).
- **Context- & evidence-based design:** design programmes based on the context and the evidence of what works in this context; if evidence is limited, conduct formative research to learn more and inform design and implementation.
- **Flexible and adaptive management:** design programmes for flexible and adaptive management, with constant learning about what works (and what does not) and course correction based on this learning.

These general programming principles have important implications for M&E: a partnership approach encourages the use and strengthening of government M&E systems for WASH (rather than investment in the development of temporary programme systems), as well as alignment with other sector systems; an area-wide approach implies that M&E systems have to cover everyone (all communities and all groups) within the target area, including targeted approaches to check for differential outcomes in marginalised groups; similarly, context- and evidence-based approaches rely on systems that collect and share information on outcomes and processes in the targeted contexts; and, finally, flexible and adaptive management requires regular feedback from M&E systems on what works, and what does not, so that decision-makers and practitioners can adapt and improve implementation approaches and support mechanisms.

Agenda for Change[9] recommends that monitoring is strong when 'national and subnational monitoring frameworks exist and are being used by all parties to measure and report on the quality of services delivered (service level), and such data [are] used proactively to improve the quality of services on a routine basis'. Examples of the strengthening of monitoring systems include (Tillet, Huston and Davis 2020):

- **Strengthening and operationalising sector monitoring frameworks**
- **Strengthening the monitoring capacities of service providers.**
- **Introducing and institutionalising new technologies to improve monitoring efficiency.**

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9   A collaboration of like-minded organisations that have adopted a set of common principles to advocate for and support national and local governments and other key stakeholders in strengthening WASH systems, so that everyone, everywhere, has WASH services that last.

The following more detailed monitoring principles have been extracted (with only minor adaptations) from the UNICEF publication 'Guidance for Monitoring Menstrual Health and Hygiene' (Chatterley 2020):

Steps in monitoring process

1. Selecting and defining indicators.
2. Developing means of indicator verification (how data obtained).
3. Pre-testing data collection tools.
4. Collecting data.
5. Analysing and using results.

Planning phase

- Data should only be collected if it is clear how it will be used to benefit the target group(s).
- Questions and indicators should be based on existing evidence and formative research with the target group(s) to understand their specific challenges and terminology.
- Most systems will monitor activities, outputs and short-term outcomes (that are likely to be associated with impacts). Assessing long-term outcomes and impacts usually requires greater financial and technical resources and a greater length of time.
- Questions should be pre-tested to ensure that they are understandable and relevant to the target group(s).

Indicator development phase

- Involve programme stakeholders in indicator development.
- Indicators should be monitored along the entire theory of change (or results chain), including fidelity (whether intervention delivered as intended), dose (quantity of intervention delivered), reach (whether and how the intended audience is reached) and adaptation (whether intervention tailored to fit different contexts).
- All concepts being measured should be clearly defined prior to data collection and draw on global definitions, where available.
- Indicators should be SMART (specific, measurable, attainable, relevant and time-bound)
- Indicators should collect all of the essential information without introducing unnecessary complexity.
- Each target indicator should be something that is able to change within five years, or within the timeline of the relevant government strategy, plan or programme.

Pre-testing phase

- Pre-testing should be conducted with respondents similar to those in the target group.
- Language and wording of questions should be adapted as needed.
- Pre-testing and adjustment of monitoring instruments should be conducted prior to training of monitors or enumerators.
- Pre-testing should help to identify the most appropriate age, sex, language and socio-economic background of monitors or enumerators (e.g. for interviews with people who menstruate, female interviewers are often more appropriate).

Data collection phase

- Data collectors should be trained in ethics and how to ask sensitive questions appropriately.
- Informed written or verbal consent should be obtained from participants, or if the respondent is below 18-years old, consent should be obtained from their legal guardian, as well as assent from the participant.
- Safeguarding procedures should be in place, including clear steps that will be followed if there is evidence that a participant is in danger (for instance, if abuse is reported).
- Shared data should not include any identifying information and must be stored safely.

Data analysis and use phase

- Findings should be shared with stakeholders and decision-makers regardless of the findings.
- Findings from a non-representative sample should not be generalised to a larger group (or to the country).
- Findings from sampled data should be reported with the sample size, and any data from small samples (with high margin of error) should be flagged.
- Reporting of data disaggregated for groups that may be stigmatised should be done responsibly to ensure that the data do not reveal identifying information about a respondent (e.g. if there is only one person with a disability and data are reported by disability, that person would not be anonymous and such data should not be reported).
- Definitions used and original questionnaires should be shared alongside the findings.
- Data should be analysed and used for feedback loops, so that it strengthens policy and implementation, and improves outcomes and impacts for the target groups.

Monitoring against service levels

The M&E framework presented below contains a number of related indicators (e.g. multiple indicators related to household latrine use and management), which have been presented in different sections to reflect the service levels used by the WHO–UNICEF Joint Monitoring Programme for Water Supply and Sanitation (JMP) for international monitoring of sanitation and hygiene progress. When in use, it is recommended that systems are designed to monitor against a range of service levels for each of the main indicators, with key criteria defined for each service level.

This service level monitoring approach enables monitors to track differential progress within a community, without restricting the monitoring system to only the lower levels of service required by national policies or standards. For instance, some households may build and use pit latrines with durable slabs and safely managed pits, which meet the (national) criteria for the use of safely managed sanitation services; while others may build and use simpler pit latrines with non-durable slabs, which would be classed as use of unimproved sanitation services; and others might use latrines with durable slabs that are connected to septic tanks that have unsafe effluent disposal, which are unsafely managed but still meet the criteria for the use of basic sanitation services. The intention is that each indicator has a list of criteria to be checked (at each household), which then enable the level of service to be determined.

Several examples of this service level monitoring approach are available. IRC first introduced a qualitative information system to the BRAC WASH programme in 2012; outcomes and qualitative processes are quantified against progressive scales, with each graded on the following scale:

- Grade 0: Condition/practice is not present
- Grade 1: Initial step (primary characteristic achieved)
- Grade 2: Primary + secondary characteristic (benchmark situation: minimal targeted outcome or scenario)
- Grade 3: Primary + secondary + tertiary characteristics present
- Grade 4: Ideal scenario (all key characteristics present)

In the BRAC WASH programme, four main sanitation indicators were used: HH03, latrine condition; HH04, latrine use among household members; HH05, consistency of latrine use; and HH07, sludge management when latrine pit is full (Ahmed, Ahammad and Islam 2015). Each of these indicators was monitored against a service level scale, e.g. for HH03, latrine condition:

0. No latrine OR latrine without rings or slab
1. Latrine with rings and slab, but no or broken water seal
2. Rings & slab + functioning water seal
3. Rings & slab + functioning water seal + no faeces visible (in pan, slab, water seal or on walls)
4. Rings & slab + functioning water seal + no faeces visible + two pits

The 2014–2020 SNV Sustainable Sanitation and Hygiene for All (SSH4A) programme adopted a similar service level monitoring approach. The following scale is for the SSH4A Impact Indicator 1: Access to a (household) sanitation facility:

0. No toilet/open defecation
1. Unimproved latrine (rats can enter pit = excreta not adequately contained)
2. Shared latrine (basic facility used by more than one household)
3. Basic latrine + fly management (flies cannot enter the pit)
4. Environmentally safe latrine (no potential contamination of groundwater from leakage or effluent + basic + fly management + not shared)

Christine Silate, a disabled (amputee) women in Botoret village. The VSC constructed a toilet for Christine with a raised seating platform specifically for her challenges. (Credit: Jason Florio)

Figure 1 SNV SSH4A: hygienic use and maintenance of sanitation facilities

SNV (2019) *Sustainable Sanitation and Hygiene for All (SSH4A): Performance Monitoring Framework – Part 1. Introduction and Impact Indicators.* The Hague: SNV

	Impact Inicator HH 2 (Households)	Impact indicator SC 2 (Schools) and Impact Indicator HF 2 (Health Facilities)
4	**Used, functional, clean toilet with privacy** Used, functional, clean toilet as level 3 below *AND* provides adequate privacy for residential premises, a door or curtain that can be closed, and a no-see through superstructure is considered the minimum	**Used, functional, clean toilet with privacy,** as for households *AND* with a door that can be locked
3	**Used, functional, clean toilet** Functional as intended as level 2 below *AND* the toilet cubicl is free from any faecal smears in/on pan, floors or walls *AND* all walls and door/curtain are in place and intact *AND* cleansing materials/sanitary materials are not left out in the open after use *AND* there is availability of water within the toilet for washers and/or pour flush toilets	**Used, functional, clean toilet,** as for households level 3
2	**Toilet in use as a toilet and functional as intended** Toilet in use *AND* the hole is covered or has a water seal *AND* the toilet is not blocked or overflowing *AND* the toilet is functional as intended, per toilet type	**Toilet in use as a toilet and funcational as inteded** as for households level 2
1	**Toilet in use as a toilet**	**Toilet in use as a toilet**
0	**No toilet/toilet is not in use as a toilet** There is no toilet within the premises, or the toilet is not used as a toilet	**No service/toilet is not in use as a toilet** There is no sanitation service within the premises, or the toilet is not used as a toilet

The community health club (CHC) approach uses a similar service level monitoring approach. The following scales were used in the Rwanda Community-Based Environmental Health Promotion Programme for the monitoring of handwashing (Waterkeyn et al. 2020). In this example, five different handwashing criteria are assessed against service level scales, with any 'red' or 'yellow' scores causing the overall rating to be 'red' (at risk and needs to improve) or 'yellow' (made progress but needs further improvement) rather than 'green' (excellent hygiene standards for this indicator).

Figure 2 Community health club household monitoring tool: handwashing (Waterkeyn et al. 2020)

1. Handwashing method	#	2. Handwashing place	#	3. Facility design	#
1. Excellent: 30 secs, fingers + nails, soap used		1. Facility by kitchen and toilet (or more)		1. Tap	
2. Good: rubbed well, soap used		2. Facility by toilet		2. Step & wash	
4. Average: quick, soap used		4. Facility in home (basin or jug)		4. Permanent (manufactured)	
8. Poor: reuse of water, no soap used		8. No fixed place for handwashing facility		8. Temporary (homemade tippy tap)	
16. Very bad: shared used water, no soap used		16. No handwashing facility		16. Pour to waste over basin	
32. No handwashing				32. Jerrycan	
				64. Plastic bottle	
				128. Shared bowl	

4. Facility use	#	5. Cleanser availability	#	OVERALL	#
1. In use: filled with water		1. Soap at facility and used		EXCELLENT HYGIENE	
2. Evidence of use but no water present		2. Ash at facility and used		PROGRESS BUT NEEDS FURTHER IMPROVEMENT	
4. Broken/no water		4. Soap/ash available but not at handwashing facility		AT RISK AND NEEDS TO IMPROVE	
		8. No soap visible, but reported use of soap			
		16. No soap or ash available, not used.			

Different contexts, with different national policies and standards, will call for different scales and service levels. Nonetheless, the general principle is a powerful one – that key criteria should be agreed for the range of service levels up to the ideal scenario for each indicator, and that the resulting monitoring scales should be used to track progress towards these outcomes.

2.2 M&E framework

The M&E framework and guidelines consider two main types of monitoring and evaluation:

- M&E of populations (e.g. national monitoring systems, government M&E)
- M&E of programmes (and post-programme M&E)

Much of the sector literature focuses on programme M&E, with tools and processes often designed to assess the effectiveness, equity, sustainability, and impact of specific interventions during a fixed period. In a few cases, post-programme M&E is undertaken, such as the WaterAid Post Implementation Monitoring Survey and the SNV Sustainable Sanitation and Hygiene for All sustainability surveys, but these initiatives are rare (perhaps because financing post-programme activities does not fit well with most donor or implementation agency planning cycles).

The M&E guidance and framework elaborated in this document recognise that both programme M&E and country-led M&E are important. National monitoring systems in low-income countries have to be implemented within the constraints of local government capacity and resources, which may preclude large or complex processes. In most low-income countries, national monitoring systems for rural sanitation and hygiene are simple, including a few critical indicators (e.g. access to improved sanitation) that are monitored and reported across the entire country. A broader and more comprehensive approach to M&E is encouraged in this document, in recognition of the need to monitor progress towards the 2030 SDG sanitation target.

The M&E framework covers four main areas:

| Sanitation & Hygiene Services |
| Equity & inclusion |
| Sustainability |
| Process monitoring |

Guidance around these four areas is presented in turn in the following four sections. This is followed by links to other guidance on the following additional M&E areas:

- Systems strengthening.
- Cost assessment.
- Impact evaluation.

Table 1 is a summary of the M&E indicator framework (in the companion document that accompanies this M&E guidelines and framework document). The indicator framework, with supporting examples, is presented in nine tables:

Indicator Table 1.1 Elimination of open defecation

Indicator Table 1.2 Elimination of unimproved sanitation services

Indicator Table 1.3 Use of limited sanitation services

Indicator Table 1.4 Universal use of basic sanitation services

Indicator Table 1.5 Use of safely managed sanitation services

Indicator Table 1.6 Hygiene services

Indicator Table 2.0 Equity and inclusion

Indicator Table 3.0 Sustainability

Indicator Table 4.0 Process monitoring

Local residents in Aeroporto B, a densely populated urban area in Maputo Mozambique where Communal Sanitation Blocks have and individual latrines have been installed. (Credit: Jason Florio)

Table 1 Summary Of M&E Indicator Framework

Table 1.1 Elimination of Open Defecation

1. % people practising open defecation

2. % households (HH) practising open defecation

3. % unsafe disposal of child excreta

4. % HH with evidence of human faeces in compound

Example 1: r.i.c.e India survey question on individual sanitation practice

Example 2: JMP core and expanded household survey questions

Example 3: SNV SSH4A questionnaire

Example 4: Global Sanitation Fund (GSF) outcome surveys

Example 5: CONCERN Baby WASH guide module

Example 6: WHO WASH-NTD toolkit

5. Community: All ODF criteria verified in household visits

Example 7: Philippine Approach to Sustainable Sanitation (PhATSS)

6. National: % HH practising open defecation

7. National: % communities certified ODF

8. National: % districts/provinces certified ODF

Example 8: CLTS Real Time Monitoring Information System, MoH Kenya

Table 1.2 Elimination of Unimproved Sanitation Services

1. % people using unimproved sanitation facilities

2. % HH using unimproved sanitation facilities

3. % children using unimproved sanitation facilities

Example 1: JMP core household survey question

Example 2: SNV SSH4A questionnaire

Table 1.3 Use of Limited Sanitation Services

1. % people using shared sanitation facilities

2. % HH using shared sanitation facilities

3. % children using shared sanitation facilities

Example 1: JMP core and expanded household survey questions

Example 2: SNV SSH4A questionnaire

Table 1.4 Universal Use of Basic Sanitation Services

1. % people using basic sanitation facilities

1. % people using basic sanitation facilities

2. % HH using basic sanitation facilities

3. % children using basic sanitation facilities

Example 1: JMP core and expanded household survey questions

Example 2: SNV SSH4A questionnaire

Example 3: Global Sanitation Fund (GSF) outcome surveys

Example 4: iDE Bangladesh Best Practice Guidelines

1. Community: 100% people use basic sanitation services.

2. Community: 100% HH use basic sanitation services

3. Community: Elimination of open defecation.

4. Community: Elimination of unimproved sanitation services.

5. Community: Elimination of limited (shared) sanitation services.

4. Community: 100% safe disposal of child excreta.

5. Community: 100% schools provide basic sanitation services.

6. Community: 100% healthcare facilities provide basic sanitation services.

Example 5: Philippine Approach to Sustainable Sanitation (PhATSS)

Example 6: JMP core questions for schools & HCFs

Table 1.5 Use of Safely Managed Sanitation Services

1. % people using safely managed sanitation facilities

2. % HH using safely managed sanitation facilities

3. % children using safely managed sanitation facilities (plus safe disposal of child excreta)

Example 1: JMP core and expanded household survey questions

Example 2: SNV SSH4A questionnaire

Example 3: iDE Cambodia FSM household survey

1. Community: 100% people use safely managed sanitation services

2. Community: 100% HH use safely managed sanitation services

3. Community: Elimination of open defecation

4. Community: Elimination of unimproved sanitation services

5. Community: Elimination of limited (shared) sanitation services

6. Community: Elimination of basic sanitation services

7. Community: 100% safe disposal of child excreta

8. Community: 100% schools provide safely managed sanitation services

9. Community: 100% healthcare facilities provide safely managed sanitation services

Example 4: Philippine Approach to Sustainable Sanitation (PhATSS)

1. District: Emptying and transport service providers

2. District: Treatment service providers

3. District: Disposal service providers

4. District: Excreta use service providers

Example 5: JMP draft questions for pilot surveys of emptying & transport service providers

Example 6: Citywide Inclusive Sanitation Safety Indicators

Table 1.6 Hygiene Services

HANDWASHING WITH SOAP

1. Observed presence of a handwashing facility with soap and water

2. Practice of handwashing with soap at critical times

3. Prevalence of illness during the 72 hours preceding the interview

Example 1: JMP core household survey questions

Example 2: SNV SSH4A questionnaire

Example 3: Global Sanitation Fund (GSF) outcome surveys

Example 4: Community Health Club Household Inventory Monitoring Tool

MENSTRUAL HEALTH

1. Private place to wash and change

2. Use of menstrual hygiene materials

3. Exclusion due to menstruation

Example 5: UNICEF guidance for monitoring menstrual health and hygiene

Example 6: JMP core household survey questions for menstrual hygiene

Example 7: WaterAid Menstrual Hygiene Matters

Example 8: GSF outcome surveys

ENVIRONMENTAL HEALTH

1. Households with adequate solid waste management services

2. Households with adequate liquid waste management services

3. Households with safe drinking water management

4. Households with safe food hygiene

5. Households with safe personal hygiene

Example 9: Community Health Club Household Inventory Monitoring Tool

Table 2.0 Equity and Inclusion

ADEQUATE AND EQUITABLE SERVICES FOR ALL

1. Identification of main marginalised groups

2. Assessment of barriers to use of services

3. Disaggregated monitoring of marginalised groups

4. Satisfaction with sanitation outcomes and impacts

Example 1: MICS6 household questionnaire

Example 2: Washington Group short set questions on disability

Example 3: Equity Tool

Example 4: WSSCC EQND study

Example 5: GSF & SNV questions on equitable use & satisfaction with services

Example 6: WaterAid Barrier analysis tool

Example 7: Learning - most significant change over time

PARTICIPATION AND EMPOWERMENT

1. Are you always invited to participate in community meetings?

2. Does your participation make a difference to the meetings?

3. During meetings, do you get the chance to fully express yourself?

4. During meetings, do you feel that your ideas and opinions are considered or valued?

5. If possible, please provide examples of a result or action that can be attributed to an input or suggestion made by you during a community meeting?

6. Describe your level of participation in community activities?

7. Please list the community activities that you have taken part in during the past 3 months:

8. Describe your level of participation in community sanitation and hygiene activities?

9. Please list the community sanitation and hygiene activities that you have taken part in during the past 3 months:

Example 8: Plan Gender and WASH monitoring tool

Example 9: SNV SSH4A outcome indicators

Example 10: SEI Empowerment in WASH index

Example 11: Citywide Inclusive Sanitation Equity Indicators

EQUITY AND INCLUSION SYSTEMS

Example 12: 2018 WaterAid Australia Women's Empowerment and Gender Transformation Framework

Example 13: Mission East Inclusion evaluation checklist

Table 3.0 Sustainability

SUSTAINABLE SANITATION SERVICES AND OUTCOMES

Example 1: UNICEF sustainability checks

Example 2: UNICEF ODF sustainability survey

Example 3: SNV sustainability indicators

Table 4.0 Process monitoring

COMMUNITY LED TOTAL SANITATION

1. Attendance at CLTS triggering meeting

2. Number of supportive community leaders

3. Agreed incentives provided at community level

4. Number of follow-up visits

5. Completion of all stages of CLTS process

MARKET-BASED SANITATION

1. Number and % HH that purchased improved sanitation facilities

2. Number and % HH with new purchased facilities that are fully installed

3. Number and % HH with new purchased facilities that are functional and in use

4. Number and % HH satisfied with their new sanitation facilities or services

5. Number and % people recalling demand activation messages

6. Number and % villages receiving direct promotional activities or product sales

7. Amount and % of local government budget allocated to market-based sanitation

Example 1: Water for People: Service Outcomes at Local Level

SANITATION FINANCE

1. Number and % of toilet subsidies provided to households from poor and marginalised groups

2. Number of financial support products for sanitation supplied to rural HH

3. Community support for toilet construction

4. Number and % HH gaining use of basic sanitation services through sanitation finance mechanisms.

5. Household investment in new (or upgraded) toilet facilities

6. Government investment in sanitation finance

N.B. The indicator tables (1.1–4.0) are presented in a separate document: M&E Indicator Framework.

2.3 Sanitation & hygiene outcomes

Sanitation & Hygiene Services
Equity & inclusion
Sustainability
Process monitoring

The The M&E framework for sanitation and hygiene outcomes covers the following areas:

Table 1.1 Elimination of open defecation

Table 1.2 Elimination of unimproved sanitation services

Table 1.3 Elimination of limited sanitation services

Table 1.4 Universal use of basic sanitation services

Table 1.5 Use of safely managed sanitation services

Table 1.6 Hygiene outcomes

See Tables 1.1 to 1.6 in the M&E indicator framework (supporting document) for typical indicators in each area and examples of how information can be collected for assessment of these indicators.

Indicator Table 1.1 Elimination of Open Defecation

The practice of open defecation is often inferred for an entire household, based on the absence of a household toilet. But open defecation is an individual practice, which can take place in different settings (e.g. home, workplace, field, forest, roadside) at different times depending on the circumstances (e.g. whether a toilet is already in use, or whether the individual is unwell). Open defecation is sometimes practised by people who have access to toilets, thus monitoring of open defecation should focus on behaviour (rather than on the presence of a household facility) and should be designed to provide reliable information on an entire community, or area, in order that the elimination of open defecation can be assessed.

M&E of open defecation should recognise differences in individual practice, as well as the importance of separately monitoring child excreta disposal (which is usually managed by caregivers). Observation of the presence of human faeces in and around households and within communal areas should also be considered to allow triangulation with the open defecation practice reported by other data collection processes.

Where individual questions on the practice of open defecation are used, such as the r.i.c.e behavioural question *(see Indicator Table 1.1 Elimination of Open Defecation, example 1)*, care should be taken to align any other questions on sanitation practice to avoid double counting (of sanitation practice by people or households).

Monitoring of community ODF status varies significantly depending on the national criteria for ODF status and verification. Monitoring of the following features is recommended:

1. **Visible or exposed excreta in the community.**
2. **Households using a hygienic toilet (shared or private).**
3. **Safe management and disposal of infant and child excreta.**

The Philippine Approach to Sustainable Sanitation includes a verification process for zero open defecation community (barangay) status. The verification criteria include additional requirements for an ordinance on eliminating open defecation, and a plan and budget to progress beyond the ODF outcome towards basic sanitation status. The verification process also includes a check that the faeces and nappies of children, older people, and people with disabilities are properly disposed, and that no human faeces are visible in the open spaces of the community.

Safe child excreta disposal
Child excreta flows are influenced by a range of practices by children and caregivers. Caregivers are usually responsible for washing and disposal of infant excreta, but as children become older they may start to use sanitation facilities. Infant and child excreta are often highly pathogenic, due to peak diarrheal incidence in the 0.5–2 year age group and high incidence in under five-year-old children.

Monitoring of child excreta disposal usually requires either observation of child sanitation practices (e.g. using structured observation), or survey of female (or other) caregivers of young children *(see Indicator Table 1.1 Elimination of Open Defecation for further detail, including examples of survey questions used by sector organisations).*

Some survey questions on safe child excreta disposal require further refinement: for example, the SNV SSH4A question USAN10 'How do you dispose of the stools of children under the age of 3 years old?' includes a response option 'The children use a diaper' *(see Indicator Table 1.1 Elimination of Open Defecation, example 3 SNV SSH4A questionnaire for further detail).* An additional question is required to assess what happens to the soiled diaper (nappy), as disposable diapers may be dumped in the open, or combined with other solid waste; washable diapers may be rinsed at nearby water points (with the risk of faecal contamination of the water point or nearby environment). For instance, the JMP question XS5 'The last time [name of child] passed stools, what was done to dispose of the stools?' includes the response option 'Put/rinsed into toilet', which captures safe washing of the excreta or diaper *(see Indicator Table 1.1 Elimination of Open Defecation, example 2 JMP core questions: for further detail).*

The GSF outcome surveys included household survey questions (and rapid observations) on defecation and excreta disposal practices, which were supplemented by structured observation of defecation and child excreta handling practices *(see Indicator Table 1.1 Elimination of Open Defecation, example 4 GSF outcome surveys for further detail).*

Table 1.1 Elimination of Open Defecation (in M&E Indicator Framework document)

1. % people practising open defecation

2. % households (HH) practising open defecation

3. % unsafe disposal of child excreta

4. % HH with evidence of human faeces in compound

Example 1: r.i.c.e India survey question on individual sanitation practice

Example 2: JMP core and expanded household survey questions

Example 3: SNV SSH4A questionnaire

Example 4: Global Sanitation Fund (GSF) outcome surveys

Example 5: CONCERN Baby WASH guide module

Example 6: WHO WASH-NTD toolkit

5. Community: All ODF criteria verified in household visits

Example 7: Philippine Approach to Sustainable Sanitation (PhATSS)

6. National: % HH practising open defecation

7. National: % communities certified ODF

8. National: % districts/provinces certified ODF

Example 8: CLTS Real Time Monitoring Information System, MoH Kenya

Indicator Table 1.2 Elimination of Unimproved Sanitation Services

For M&E of the use of unimproved sanitation services it is necessary that the collected data allows for reliable differentiation between unimproved and improved sanitation facilities.

JMP (2018; see Table 3) monitoring definitions state that 'pit latrines with slab' should be classed as unimproved sanitation facilities if:

a. The slab only partially covers the pit.

b. The slab is constructed from materials that are not durable and easy to clean (e.g. sticks, logs or bamboo), even if they are covered with a smooth layer of mortar, clay or mud.

Monitoring of the following features is recommended to enable differentiation of improved and unimproved sanitation facilities:

i. Type of containment system: whether excreta enter a pit, tank, sewer connection or discharge directly to the open (field/drain/water) or into an open pit.

ii. Containment quality: whether excreta are visible or accessible, other than through the drophole or pan (e.g. any holes in slab, or other access points).

iii. Toilet slab material: whether concrete, wood, cement-covered, mud-covered, tiled etc. (to assess durability as per the current JMP criteria).

iv. Slab cleanliness: whether slab is currently clean (e.g. free from excreta, excreta smears or soiled cleaning materials), or appears easy to clean (i.e. either cleanable, sweepable or washable).

*See **Indicator Table 1.2 Elimination of Unimproved Sanitation Services** for further detail, including examples of survey questions used by sector organisations.*

The SNV SSH4A household survey (Indicator Table 1.2, example 2) uses functional criteria to determine whether household sanitation facilities are improved sanitation facilities (i.e. whether the facility hygienically separates human faeces from human contact) and meet the JMP criteria on complete and easy to clean slabs (SAN4 and SAN5A questions) and excreta containment in a pit or tank or transport off-site (SAN3A question). The SNV survey assumes that periodic surveys will confirm the durability and sustained use of the sanitation facility (thus does not check the toilet slab material). The SNV survey uses 'ask and observe' questions to verify household responses following observation of the sanitation facility and condition by the survey enumerator.

Table 1.2 Elimination of Unimproved Sanitation Services (in M&E Indicator Framework document)

1. % people using unimproved sanitation facilities

2. % HH using unimproved sanitation facilities

3. % children using unimproved sanitation facilities

Example 1: JMP core household survey question

Example 2: SNV SSH4A questionnaire

Indicator Table 1.3
Use of Limited Sanitation Services

The JMP currently assumes that shared use of improved sanitation facilities is more likely to result in unhygienic outcomes (and may have gender and equity effects), thus classes use of shared facilities as use of a limited sanitation service. However, in some settings and situations, there are few alternatives to the use of shared sanitation facilities (e.g. people living in rented accommodation with communal facilities). Furthermore, shared sanitation facilities can be clean and safely managed.

Three main types of sharing should be monitored:

a. Own toilet, but shared use with at least one other household.
b. No toilet, but shared use of a toilet owned by another household.
c. No toilet, but shared use of a public toilet.

Surveys should also assess the number of households (and people) that use a shared sanitation facility, and record whether these other sharing households are known to each other, as the number of people using the facility (and whether they are known to each other) is often a more useful indicator of the risk of unhygienic outcomes than the number of households (as use by four small households may work better than use by two very large households).

Assessment of the cleanliness of shared sanitation facilities is also important, as the main reason for counting the use of shared sanitation facilities as a limited (below basic) sanitation service is that the risk of unhygienic outcomes is higher in shared facilities than in private facilities. Where evidence of hygienic outcomes is available (i.e. that the facility is functional and clean, and shared by a relatively small group of people), this strengthens the argument for classifying use of the facility as a basic sanitation service.

*See Indicator **Table 1.3 Use of Limited Sanitation Services** for further detail, including examples of survey questions used by sector organisations.*

Table 1.3 Use of Limited Sanitation Services (in M&E Indicator Framework document)

1. % people using shared sanitation facilities

2. % HH using shared sanitation facilities

3. % children using shared sanitation facilities

Example 1: JMP core and expanded household survey questions

Example 2: SNV SSH4A questionnaire

Indicator Table 1.4
Universal Use of Basic Sanitation Services

JMP monitoring definitions state that toilets should be classed as improved sanitation facilities, the use of which is classed as use of a basic sanitation service, if:

a. The toilet is designed to hygienically separate human excreta from human contact, including wet sanitation technologies such as flush or pour-flush toilets connected to sewers, septic tanks, or latrine pits, and dry sanitation technologies such as dry pit latrines and composting toilets.
b. Septic tanks are designed to contain and treat excreta on site, with an outlet pipe that discharges effluent into a subsurface infiltration system, such as a soakpit or leach field.
c. Pit latrines have slabs that completely cover the pit, with a small drop hole, and slabs are constructed from materials that are durable and easy to clean (e.g. concrete, bricks, stone, fiberglass, ceramic, metal, wooden planks, or durable plastic). Slabs made of durable materials that are covered with a smooth layer of mortar, clay, or mud should also be counted as improved.

Monitoring of the following features is recommended to enable differentiation of improved and unimproved sanitation facilities:

i. **Type of containment system:** whether excreta enter a pit, tank, sewer connection, or discharge directly to the open (field/drain/water) or into an open pit.
ii. **Containment quality:** whether excreta are visible or accessible, other than through the drophole or pan (e.g. any holes in slab, or other access points).
iii. **Toilet slab material:** whether the slab is made of concrete, wood, or other materials, or is covered with cement, mud, tiles etc. (to assess durability as per the current JMP criteria).
iv. **Slab cleanliness:** whether the slab is currently clean (e.g. free from excreta, excreta smears or soiled anal cleansing materials), or appears easy to clean (i.e. either cleanable/sweepable or washable)

Individual practice should be monitored wherever possible, including separate measurement of toilet use by adults and children (or other child excreta disposal practices). The JMP extended household survey and SNV SSH4A household survey (Indicator Table 1.4, examples 1 & 2) include additional questions on the privacy, security, inclusion, and accessibility of household sanitation services.

*See **Indicator Table 1.4 Universal Use of Basic Sanitation Services** for further detail, including examples of survey questions used by sector organisations.*

Table 1.4 Universal Use of Basic Sanitation Services (in M&E Indicator Framework document)

1. % people using basic sanitation facilities

1. % people using basic sanitation facilities

2. % HH using basic sanitation facilities

3. % children using basic sanitation facilities

Example 1: JMP core and expanded household survey questions

Example 2: SNV SSH4A questionnaire

Example 3: Global Sanitation Fund (GSF) outcome surveys

Example 4: iDE Bangladesh Best Practice Guidelines

1. Community: 100% people use basic sanitation services.

2. Community: 100% HH use basic sanitation services

3. Community: Elimination of open defecation.

4. Community: Elimination of unimproved sanitation services.

5. Community: Elimination of limited (shared) sanitation services.

4. Community: 100% safe disposal of child excreta.

5. Community: 100% schools provide basic sanitation services.

6. Community: 100% healthcare facilities provide basic sanitation services.

Example 5: Philippine Approach to Sustainable Sanitation (PhATSS)

Example 6: JMP core questions for schools & HCFs

Detail on the monitoring of sanitation and hygiene in institutions (e.g. schools and health care facilities) can be found in the following JMP website and publications:

JMP WASHdata.org website: https://washdata.org/monitoring/methods/core-questions

JMP (2018a) Core Questions and Indicators for Monitoring WASH in Schools in the Sustainable Development Goals. Geneva: United Nations Children's Fund (UNICEF) and World Health Organization Joint Monitoring Programme for Water Supply, Sanitation and Hygiene.

JMP (2018b) Core Questions and Indicators for Monitoring WASH in Health Care Facilities in the Sustainable Development Goals. Geneva: United Nations Children's Fund (UNICEF) and World Health Organization Joint Monitoring Programme for Water Supply, Sanitation and Hygiene

Indicator Table 1.5
Use of Safely Managed Sanitation Services

JMP monitoring definitions state that the use of safely managed sanitation services requires:

a. Use of improved facilities that are not shared with other households; and

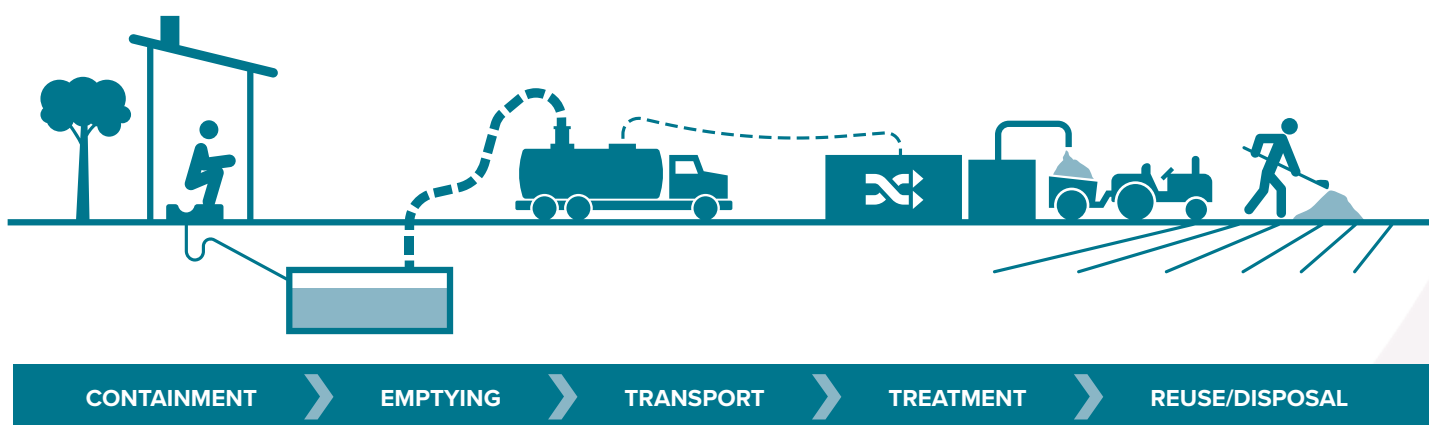b. Excreta are safely disposed of on site, or transported and treated off site.

| CONTAINMENT | > | EMPTYING | > | TRANSPORT | > | TREATMENT | > | REUSE/DISPOSAL |

Figure 3 Sanitation service chain (IRC)[10]

10 www.ircwash.org/blog/ushering-new-era-sanitation-value-chain-management-rajasthan.

This new sanitation service category requires that the entire sanitation service chain is monitored, including the following components:

- **Toilet (user interface)**
- **Containment system**
- **Emptying**
- **Transport**
- **Treatment**
- **Disposal**
- **Use**

Information on excreta emptying, transport, treatment, disposal, and use is not usually available from households, as many of these services take place off site. **Monitoring of service providers** (e.g. private emptying and transport services) **and local authorities** (e.g. operators of treatment and disposal sites) may be required to assess the use of safely managed sanitation services.

Monitoring of the following features is recommended to enable classification of the use of safely managed sanitation services:

i. **Safe containment:** whether any excreta are not safely contained (e.g. continuous liquid outflows; intermittent liquid outflows; washout or deliberate discharge of faecal sludge).

ii. **Safe emptying:** whether any excreta are emptied from the containment system; duration of excreta storage before emptying; whether any excreta are spilled during emptying; whether emptiers are adequately protected from contact with the excreta.

iii. **Safe transport:** whether any excreta are transported off site; whether any excreta are spilled or dumped during transport; whether transporters are adequately protected from contact with the excreta.

iv. **Safe treatment:** whether excreta are treated off site; whether any excreta are spilled or dumped at the treatment site; whether treatment is adequate and complete; whether treatment staff are adequately protected from contact with the excreta.

v. **Safe disposal:** whether excreta are disposed either on site or off site; and the type of disposal (buried in pit or trench or other; stored in open/closed containers; discharged offshore; dumped in open/field/drain/water; other).

vi. **Use:** whether excreta (either before or after storage, treatment or processing) are used as soil conditioner (e.g. surface or sub-surface application to food or non-food crops), for fish or animal feed, for production of biogas or solid fuel, or other uses.

vii. **Excreta storage time:** whether the excreta storage time ensures that pathogens are likely to be inactivated; whether other factors reduce the effective storage time (e.g. addition of solid waste that fills the containment system more quickly); whether the containment system has passed its 'safe emptying' time, after which its operation may become less safe (e.g. due to unsafe emptying in order to avoid safe emptying costs).

viii. **Risk of groundwater contamination:** whether excreta outflows from containment systems risk contamination of groundwater and nearby drinking water supplies (i.e. collection of information on soil type and transmissivity; minimum depth of groundwater table; average distance to groundwater extraction points; density of excreta containment systems with outflows).

Pit latrines should be classed as safely managed if the excreta are safely contained in the pit (i.e. no leaks, overflows or flooding out), and the pit is safely covered when full and replaced with a new pit. Excreta stored in unsaturated soil for more than two years are considered safe (as the pathogens are usually inactivated after this period of storage).

Septic tanks contain both solid and liquid excreta fractions, and generally have a continuous flow of effluent[11] out of the tank. The liquid fraction tends to have similar pathogen levels to the solid fraction, thus there is a significant risk of unsafe management if the effluent is not safely disposed to a subsurface soakaway (or trench field) that encourages infiltration of the effluent into the soil. Where pit latrines or septic tanks (or other sanitation facilities) leach liquids into the soil, the risk of groundwater contamination should be checked (see above).

The SNV Sustainable Sanitation and Hygiene for All household survey uses a classification flow chart (based on the survey responses) to classify each household toilet surveyed, including assessment of use of the toilet by all members of the household, safe management of the on-site sanitation services, and the risk of groundwater contamination from the on-site sanitation.

In rural areas, households may empty and transport their own faecal sludge, or may pay informal service providers for emptying, transport, and disposal services. In these cases, faecal sludge is often disposed within or nearby the community settlement. Where households report off-site sanitation services, additional surveys may be required including of:

- **Service providers**
- **Treatment providers**
- **Disposal providers**

Data on off-site services may come from household surveys (when households report the service providers used), or from other local government monitoring. Nonetheless, routine monitoring (e.g. at least annual checks) of these service providers is recommended to assess whether the off-site services are safely managed, and report the facilities and services that are safely and unsafely managed (with action to be taken to improve the unsafely managed services).

Estimates of the volume of excreta flows managed by these service providers should be combined with assessments of the safe management of these services to enable overall estimates of the proportion of off-site excreta flows that are safely managed.

Example 6 (in the indicator table) details selected indicators used by the Citywide Inclusive Sanitation (CWIS) initiative to assess the safe management of sanitation services. While the CWIS monitoring framework was designed for monitoring of sanitation services in urban environments, some of the indicators are useful for rural contexts with urban characteristics (given that there are few good examples available from rural programmes).

11 Liquid waste flowing out of the tank.

See Indicator Table 1.5 Use of Safely Managed Sanitation Services for further detail, including examples of survey questions used by sector organisations.

Table 1.5 Use of Safely Managed Sanitation Services (in M&E Indicator Framework document)

1. % people using safely managed sanitation facilities

2. % HH using safely managed sanitation facilities

3. % children using safely managed sanitation facilities (plus safe disposal of child excreta)

Example 1: JMP core and expanded household survey questions

Example 2: SNV SSH4A questionnaire

Example 3: iDE Cambodia FSM household survey

1. Community: 100% people use safely managed sanitation services

2. Community: 100% HH use safely managed sanitation services

3. Community: Elimination of open defecation

4. Community: Elimination of unimproved sanitation services

5. Community: Elimination of limited (shared) sanitation services

6. Community: Elimination of basic sanitation services

7. Community: 100% safe disposal of child excreta

8. Community: 100% schools provide safely managed sanitation services

9. Community: 100% healthcare facilities provide safely managed sanitation services

Example 4: Philippine Approach to Sustainable Sanitation (PhATSS)

1. District: Emptying and transport service providers

2. District: Treatment service providers

3. District: Disposal service providers

4. District: Excreta use service providers

Example 5: JMP draft questions for pilot surveys of emptying & transport service providers

Example 6: Citywide Inclusive Sanitation Safety Indicators

Indicator Table 1.6
Hygiene Services

The main hygiene services covered by the framework are:

a. **Handwashing with soap**
b. **Menstrual health**
c. **Environmental health**

Handwashing with soap

The JMP indicator for a basic hygiene service is the availability of a handwashing facility on premises with soap and water, which is usually assessed by rapid observation during a household survey (JMP 2018).

> **JMP monitoring definitions**
> *Handwashing facility*: fixed or mobile device designed to contain, transport, or regulate the flow of water to facilitate handwashing. Examples include sinks with tap water, buckets with taps, tippy-taps, and jugs or basins designated for handwashing.
>
> *Soap:* includes bar soap, liquid soap, powder detergent, and soapy water (N.B. ash, soil, sand, and other traditional handwashing agents are less effective and do not count as soap).

Handwashing was selected as the JMP indicator of hygiene services because the potential for faecal–oral transmission from hands is very high if good handwashing is not practised, particularly at critical times such as:

- **After defecation or handling faeces (e.g. cleaning infants, disposing of infant or child excreta, or cleaning or disposing of diapers or soiled clothes);**
- **Before handling food (e.g. before preparing or cooking food, before eating, before feeding infants or children);**
- **Before caring for someone who is sick (e.g. with vomiting or diarrhoea); and**
- **Before or after treating a cut or wound.[12]**

The measurement of handwashing is challenged by the complexities of human behaviour (Vujcic and Ram 2013). Handwashing is required at different times of the day (related to multiple different daily practices), often in several different places (e.g. kitchen, washing place, dining place, outside, toilet), and is affected by the knowledge, attitudes, skills, habits, and resources of the individual. Handwashing practice is highly variable over time and space and between individuals, and in summary, therefore, is hard to measure.

Direct observation is considered the best method of evaluating hand hygiene. Structured observation[13] can provide information on the frequency, intensity, and duration of the observed behaviours (Bentley et al. 1994), but is expensive and time-consuming (as it requires one well-trained observer per household observed), and is subject to reactivity (i.e. the act of observation can change the behaviour of the participants).[14]

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12 www.cdc.gov/handwashing/when-how-handwashing.html (accessed 15 March 2021).

13 Observation of households at a fixed time for a fixed period, with quantitative records of a small number of specific behaviours by individuals in the household.

14 Ideally, both participants and observers should be unaware of the target behaviour of the structured observation, and of any links to previous interventions, in order to blind them to the specific aim of the research. For example, in the SuperAmma handwashing programme both participants and observers were told that the research was a study of domestic water use (as described in Biran et al. (2014).

Self-reported handwashing behaviour can be collected from household surveys. However, self-reported behaviour is subject to desirability bias (i.e. the desire to respond in ways that will be viewed favourably by others), with self-reported handwashing behaviour often found to over-estimate actual practice (e.g. when compared with assessments made through structured observation) (Biran et al. 2008). For this reason, some form of validity check is recommended on self-reported data on handwashing behaviour (e.g. comparison of self-reported data with other handwashing measures, such as structured observation, or – at a minimum – with the observed presence of handwashing facilities with soap and water).

Proxy indicators measure conditions that are associated with the target behaviour, from which behaviour is inferred. For instance, the JMP indicator (availability of a handwashing facility on premises with soap and water) uses rapid observation to confirm whether appropriate handwashing materials are available at the household. But availability does not reveal whether, or how often, these materials are used to wash hands, or when hands are washed (i.e. at critical times with high contamination risk).

Few rural sanitation and hygiene programmes have the capacity or resources to undertake regular structured observations of handwashing at scale, which has led implementation agencies to use a range of combined measures (see box).

Composite measure for assessing handwashing with soap in Indonesia

In 2016, UNICEF Indonesia researched and developed a composite measure of handwashing with soap that could be assessed through a household survey (Cronin et al. 2016). The composite measure included: self-reported practice of handwashing; observed handwashing facilities and materials in the home; and an observed demonstration of handwashing by the household respondent.

While people who self-report handwashing tend to over-estimate practice, the composite indicator assumes that self-reported practice is likely to be more reliable if the household respondent has a handwashing place nearby with water and soap available, and can easily demonstrate how they wash their hands in this place (i.e. daily handwashing with soap at critical times requires that all of the materials are readily available in a nearby handwashing place, and suggests that it should be easy to demonstrate this regular and familiar practice). The household survey included a three-part composite measure:

1. **Household question: What do you usually use to wash your hands?** [without any prompt]
2. **Observation of indicated handwashing place: Availability of water and soap?**
3. **Observation of practice: Please demonstrate how you usually wash your hands?**

Study participants were only counted as practising handwashing with soap if all three conditions were met: a) they reported washing their hands with water and soap; b) water and soap were observed at the handwashing place; and c) the use of water and soap was observed during the demonstration of handwashing.

The UNICEF Indonesia study found that self-reported use of water and soap for handwashing was 71 per cent. The observed presence of water and soap at the handwashing place was very similar, at 70 per cent; and the use of water and soap during the handwashing demonstration was observed in 75 per cent of households. In this context, the proxy measure of the presence of a handwashing facility and materials matches the self-reported practice well. However, the composite measure (which required that a household met all three criteria) found that only 56 per cent of households practised handwashing with soap. While the validity of the composite measure was not assessed (as structured observation was not included in the study), the composite measure clearly resulted in a more conservative estimate of handwashing behaviour (i.e. reducing the estimate of the prevalence of handwashing with soap down from 71 per cent self-reported practice to 56 per cent estimated practice from the composite measure).

The UNICEF Indonesia study also examined when households washed their hands (through the household survey). The proportion of households who reported washing their hands with soap at critical times varied dramatically from 90 per cent who reported handwashing before eating, down to only 8 per cent who reported handwashing before feeding a child. In general, handwashing at critical times related to adult practices (e.g. 52 per cent after defecation, 55 per cent after eating), was reported to be much more common than handwashing at critical times related to children (e.g. 13 per cent after cleaning child faeces, only 8 per cent before feeding a child).

When a criterion for washing hands with soap at critical times was added to the composite handwashing indicator, the proportion of respondents that were found to practise handwashing with soap at each critical time was dramatically lower:

- 52 per cent practised handwashing with soap **before eating**
- 27 per cent practised handwashing with soap **after defecation**
- Only 7 per cent practised handwashing with soap **after cleaning child faeces**
- Only 4 per cent practised handwashing with soap **before feeding children**
- Only 2 per cent practised handwashing with soap at all four of these critical times.

Monitoring an active demonstration of handwashing with soap and water (by the respondent household), as required by the UNICEF Indonesia composite measure (see box) is an important improvement on more passive observation of the presence of water and soap at a household handwashing facility.

Household surveys in West Africa underestimated handwashing practice because the survey enumerators observed a low presence of water and soap at handwashing facilities located close to sanitation facilities (Robinson 2016). However, further investigation revealed that most households had water and soap in the home (or kitchen) and either returned to the home to wash their hands, or took the

water and soap with them when using the toilet. Similarly, an evaluation of a CHC programme in Rwanda (using a cluster randomised control trial) found little improvement in the availability of handwashing facilities with water and soap at the end of the intervention (when assessed based on the presence of water and soap at a household handwashing facility); in contrast, the monitoring system assessed the use of soap for handwashing by asking a child from the household to demonstrate how they washed their hands (and then observing whether they fetched soap and water to wash their hands), and reported 99 per cent handwashing with soap by CHC members (despite only 61 per cent presence of handwashing facilities observed in the compound) (Waterkeyn et al. 2020).

Monitoring of handwashing with soap in the SNV SSH4A programme

The SNV Sustainable Sanitation and Hygiene for All (SSH4A) programme[15] adapted a similar composite handwashing indicator for use within the FCDO (formerly DFID) - supported WASH payment by Results programme, which included payments based on the population that had started practising handwashing with soap at critical times since the baseline *(see **Table 1.6 Hygiene Services**, example 2 for further detail of the indicators used)*.

The lessons from the SSH4A programme included that regular monitoring of handwashing practice highlighted ineffective hygiene promotion (and allowed it to be revised and improved); that handwashing practice changed significantly over time (not least because the simple tippy taps constructed by most households were not durable); and that monitoring of handwashing practice over several years revealed that sustained use of soap in handwashing facilities was hard to achieve in the low income programme contexts.

In the Mozambique SSH4A project, the first household survey of handwashing practice took place six months after the launch of the SSH4A hygiene promotion campaign in five districts of Nampula province. The project team had been confident that the handwashing promotion was well designed (based on formative research), but the survey found that there had been no change in the presence of handwashing facilities.[16] As a result, the hygiene promotion campaign was extensively revised, and a year later the household survey reported a 15 per cent increase in the presence of handwashing facilities (SNV 2020).

The presence of soap was another critical element of the SNV composite handwashing indicator, as soap was observed in only 25 per cent of households in the final 2020 survey, even though 86 per cent of households were aware of the two critical times for handwashing with soap as required by the indicator (before eating and after defecation). Therefore, monitoring and evaluation of handwashing practice need to be undertaken regularly (to provide feedback on response rates and changes in practice over time) and continue for several years after any intervention (to check on sustained handwashing behaviour).

The Water Supply and Sanitation Collaborative Council (WSSCC) implemented a series of outcome surveys in its Global Sanitation Fund (GSF) programmes in 2018 and 2019. These large-scale household surveys included handwashing questions (asked of both household heads and female caregivers), and structured observation of a smaller number of households. The results from the two survey instruments provided quite different information, and appeared to confirm that self-reported practice of handwashing was over-estimated *(see **Indicator Table 1.6 Hygiene Services, example 3** for further detail)*.

UNICEF recommends the use of an impact indicator to assess recent health status. A household survey can be used to collect data on the prevalence of illness during the 72 hours preceding the interview, which can then be used to compare health trends over time (and between treatment and control groups) in the target population. UNICEF recommends a three-day recall period, rather than the two-week recall period used in the MICS and DHS household surveys, because

recent evidence suggests that the shorter recall period is likely to be more efficient and reliable (Vujcic and Ram 2013: Annex 1). N.B. large sample sizes are required to detect (statistically significant) differences in disease outcomes, thus health impacts are usually only assessed by large, well-resourced programmes.

The analysis of health impacts is complex, with multiple factors that influence health outcomes either positively or negatively, including significant short- and medium-term variations in sanitation-related health outcomes due to wider climatic and demographic trends (e.g. higher diarrhoeal disease during rainy season or periods of flooding; cholera outbreaks related to periodic migration of infected groups). Expert epidemiologic and statistical guidance is advisable where health impacts are to be measured.

*See **Indicator Table 1.6 Hygiene Services** for further details on the main indicators recommended and examples of how different organisations monitor handwashing.*

15 https://snv.org/project/sustainable-sanitation-hygiene-all-results-programme.

16 Based on 2015 interview of the Mozambique SSH4A project team by the author.

Menstrual health

Menstrual hygiene management refers to the management of hygiene associated with the menstrual process. The JMP definition of menstrual hygiene management is:

Women and adolescent girls are using a clean menstrual hygiene management material to absorb or collect menstrual blood, that can be changed in privacy as often as necessary for the duration of a menstrual period, using soap and water for washing the body as required, and having access to safe and convenient facilities to dispose of used menstrual management materials. They understand the basic facts linked to the menstrual cycle and how to manage it with dignity and without discomfort or fear.
(JMP 2012)

UNICEF (2019) defines menstrual health and hygiene more broadly, encompassing menstrual hygiene management and the wider systemic factors that link menstruation with health, well-being, gender equality, education, equity, empowerment, and rights (e.g. accurate and timely knowledge; available, safe and affordable materials; informed and comfortable professionals; referral and access to health services; sanitation and washing facilities; positive social norms; safe and hygienic disposal; and advocacy and policy).

Monitoring of menstrual health is also part of SDG 6.2, which requires that 'special attention [is paid] to the needs of women and girls'. UNICEF recommends that four key elements are required in menstrual health programmes, and that each of these four 'pillars' (Chatterley 2020) should be monitored:

1. **Social support** (promotion of equitable gender norms, access to support, empowerment, reduced stigma and taboos).

2. **Knowledge and skills** (understanding of menstruation, sexual and reproductive health, and how to care for bodies during menstruation).

3. **Facilities and services** (for changing, washing and/or disposal of materials and clothing, and for handwashing and bathing in private, clean facilities with water and soap available).

4. **Materials** (for absorbing or catching menstrual blood, and supportive supplies such as underwear or laundry soap that are safe, acceptable, and accessible).

Further work is required to develop and strengthen reliable monitoring systems for menstrual hygiene and health. UNICEF recommends that a combination of quantitative and qualitative data collection methods should be used, with inclusion and participation (by menstruators) in the monitoring process.

Menstrual health should also be monitored outside the home, in schools, health care facilities and workplaces. Systematic data collection by national information systems can provide regular and consistent data on progress (Chatterley 2020).

*See **Indicator Table 1.6 Hygiene Services** for further detail and examples of menstrual health monitoring indicators used by sector organisations.*

Table 1.6 Hygiene Services (in M&E Indicator Framework document)

HANDWASHING WITH SOAP

1. Observed presence of a handwashing facility with soap and water

2. Practice of handwashing with soap at critical times

3. Prevalence of illness during the 72 hours preceding the interview

Example 1: JMP core household survey questions

Example 2: SNV SSH4A questionnaire

Example 3: Global Sanitation Fund (GSF) outcome surveys

Example 4: Community Health Club Household Inventory Monitoring Tool

MENSTRUAL HEALTH

1. Private place to wash and change

2. Use of menstrual hygiene materials

3. Exclusion due to menstruation

Example 5: UNICEF guidance for monitoring menstrual health and hygiene

Example 6: JMP core household survey questions for menstrual hygiene

Example 7: WaterAid Menstrual Hygiene Matters

Example 8: GSF outcome surveys

ENVIRONMENTAL HEALTH

1. Households with adequate solid waste management services

2. Households with adequate liquid waste management services

3. Households with safe drinking water management

4. Households with safe food hygiene

5. Households with safe personal hygiene

Example 9: Community Health Club Household Inventory Monitoring Tool

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For further guidance on **M&E of menstrual health,** consult the following materials:

Chatterley, C. (2020) *Guidance for Monitoring Menstrual Health and Hygiene.* New York: UNICEF

UNICEF (2019) Guidance on Menstrual Health and Hygiene New York: UNICEF

House, S., Mahon, T. and Cavill, S. (2012) *Menstrual Hygiene Matters: A Resource for Improving Menstrual Hygiene around the World* London: WaterAid

2.4 M&E framework: Equity and inclusion

Sanitation & Hygiene Services
Equity & inclusion
Sustainability
Process monitoring

A range of different M&E approaches and systems is required to assess equity and inclusion in rural sanitation and hygiene. Both qualitative and quantitative monitoring and evaluation are recommended to allow better assessments of equity and inclusion over time, including the capture and analysis of any negative outcomes and impacts, and the sharing of lessons with users and decision-makers, so that services can be made more equitable and inclusive.

Examining the direct outcomes of sanitation and hygiene interventions only tells part of the story. It is also important to undertake M&E designed to capture other impacts, including negative impacts such as exclusion, exploitation, coercion and corruption. M&E systems should assess whether service users are able to participate in, contribute to and influence decisions related to sanitation and hygiene services; whether these changes have empowered women and girls, or other disadvantaged and vulnerable people; and whether service users (particularly those with the lowest level of service) are satisfied with the services, and with their sanitation and hygiene outcomes.

In practice, M&E systems for sanitation and hygiene often collect only a small subset of disaggregated data on disadvantaged service users (which is often not sampled well enough to provide representative or statistically significant results). Sometimes these data are supported by longer term qualitative research, but this qualitative research is often at small scale and is generally not designed to combine with, or triangulate against, other M&E results. Equity and inclusion need to be more comprehensively integrated into existing M&E systems, with recognition that important results should be validated through the use of multiple frameworks, methods and tools, working together to provide a detailed understanding of the change process, and its limitations.

M&E is most useful and relevant when it is a systematic learning process, rather than just a response to reporting requirements (e.g. results that have to be reported to donors and governments). M&E for equity and inclusion should also provide information that encourages accountability to decision-makers and donors (upward accountability) and to service users (downward accountability). This type of M&E requires the use of processes that assess different perspectives on services and outcomes, and regularly shares insights from this learning with all of the key stakeholders.

WaterAid (2018) suggests the following steps to ensure an inclusive WASH sector:

- WaterAid staff and partners collaborate with marginalised groups and individuals to collect evidence on the barriers to WASH and address them.
- WaterAid partners support communities to use this evidence to engage decision-makers in WASH.
- The WASH sector, wider sectors and civil society work together to advocate for inclusive WASH as a human right.
- Decision-makers are aware of their responsibilities, and provide, monitor, and enforce inclusive WASH. They are held to account through effective systems.

At programme level, WaterAid assesses factors and characteristics that contribute to marginalisation or inequities in use of sanitation and hygiene services,[17] including the identification of people and groups with disadvantages or vulnerabilities, and assessment of barriers to the equitable use of these services (e.g. the barrier analysis tool described below). The following processes are recommended:

- **Situation analyses** that identify physical, social, and institutional barriers that different marginalised groups face in relation to rural sanitation and hygiene.
- **Baseline surveys** that include population data disaggregated by gender, age, disability, and health status.
- **Survey questions** about: menstrual health; accessibility for disabled people; attitudes to gender, disability, and age in relation to sanitation and hygiene; and about any groups in the area whose needs may be neglected (e.g. low class/caste, pastoralists, migrant workers, displaced people, sex workers, prisoners).
- **Monitoring indicators** that reflect targets for accessible facilities; reduced numbers of marginalised people who lack access; and increased participation, voice, and influence of marginalised people in sanitation and hygiene activities and institutions.

Any monitoring and evaluation of rural communities or systems should recognise that human diversity is an important feature of communities. Each community and each context will be different in some ways from all others, and the people, households, and groups within a community will also vary in many ways. Consequently, unless good information on marginalised and excluded groups is already available, **some sort of assessment is usually required to identify the main markers and factors that influence marginalisation in the area or context being monitored or evaluated.**

WaterAid has identified four **universal markers of marginalisation:**

- **Gender**
- **Age**
- **Disability**
- **Health Issues**

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17 Personal communication with author by Priya Nath, WaterAid (16 July 2020)

Furthermore, there are many other **context-specific marginalisation factors** to consider, including:

- **Place of residence**
- **Economic status**
- **Ethnicity or tribe**
- **Religion**
- **Class or caste**
- **Sexual orientation and gender identity**
- **Education level**
- **Landlessness**
- **Refugee or migration status**
- **Other local factors (e.g. social, cultural, or political minorities)**

Different aspects of a person's identity may overlap to affect experiences, for example their race, class, gender, age, health status, or disability status. This is called **intersectionality,**[18] and can mean that some people experience more discrimination or marginalisation. These issues help to explain why some groups of people remain hard to reach or are left behind by development processes. Identification of intersectionality may require disaggregation of monitoring data by several different factors at the same time.

Good M&E can help to:

1. **Identify who is marginalised.**
2. **Assess barriers to inclusion.**
3. **Check satisfaction with sanitation services, outcomes, and processes.**
4. **Encourage the delivery of more equitable and inclusive WASH services.**

*See **Indicator Table 2.0 Equity and Inclusion: Adequate and Equitable Services for All** for further detail and examples of monitoring indicators used by sector organisations.*

M&E of equity and inclusion should also consider broader, longer term outcomes and impacts that may not be captured by routine M&E of sanitation and hygiene, and which may require more qualitative monitoring and evaluation. As noted earlier, M&E systems should also examine:

- **Participation**
- **Empowerment**
- **Accountability**

*See **Indicator Table 2.0 Equity and Inclusion: Participation and Empowerment** for further detail and examples of monitoring indicators used by sector organisations.*

Disaggregation of M&E data and information (by the main markers and factors of marginalisation) enables checks on equity and inclusion in sanitation and hygiene services and outcomes, and on progress towards the SDG sanitation target, including the elimination of open defecation and elimination of inadequate sanitation services (e.g.

unimproved or limited services), and universal use of basic and safely managed services. Process monitoring (see Section 2.5) should also recognise equity and inclusion, with disaggregated indicators that report whether people from poor and marginalised groups participate in processes, receive support, or respond to activities.

It is not recommended that separate targets are set for results in pre-identified marginalised groups, unless these groups are clearly recognised as among the groups with the lowest and most inequitable sanitation outcomes and use of sanitation services. Universal use of basic and safely managed services and equitable outcomes should be the main targets in M&E systems, with disaggregated M&E data used to assess any differences in progress among the main marginalised groups identified in each specific context.

The M&E framework includes examples of household survey questions and tools that can be used to disaggregate household survey data *(in Indicator Table 2.0 Equity and Inclusion)*, including:

- **Example 1:** Multi-Indicator Cluster Survey (MICS6) questions on gender, age, religion, ethnicity, tenure & landlessness
- **Example 2:** Washington Group short set of questions on disability
- **Example 3:** Equity Tool (simplified approach to wealth assessment, for specific countries)

Given the wide diversity of communities and contexts in low-income settings, there is no single tool that can be recommended for identification of the most marginalised groups in any particular context. Usually a range of approaches is required including both qualitative and quantitative processes that assess differences in sanitation outcomes, use of services, and impacts. Where reliable government identification systems exist (e.g. for poverty or using other social protection criteria), monitoring systems should record any government classification of households, and compare it with other equity and inclusion data wherever possible. Most government systems are not designed for sanitation, thus data from these systems often needs to be overlaid with other criteria in order to refine it for use in sanitation systems.

Most equity and inclusion specialists suggest that community-based processes are the most effective way to identify marginalised people and groups, although these processes require careful facilitation to avoid the risk that local power relations and social networks influence the findings. Where community-based processes classify people differently from government systems, this information should be shared with the relevant government officials in order to strengthen and improve the government system, and encourage long-term alignment and harmonisation.

*See **Indicator Table 2.0 Equity and Inclusion: Equity and Inclusion Systems** for further detail and examples of monitoring indicators used by sector organisations.*

18 Ibid.

Table 2.0 Equity and Inclusion (in M&E Indicator Framework document)

ADEQUATE AND EQUITABLE SERVICES FOR ALL

1. Identification of main marginalised groups

2. Assessment of barriers to use of services

3. Disaggregated monitoring of marginalised groups

4. Satisfaction with sanitation outcomes and impacts

Example 1: MICS6 household questionnaire

Example 2: Washington Group short set questions on disability

Example 3: Equity Tool

Example 4: WSSCC EQND study

Example 5: GSF & SNV questions on equitable use & satisfaction with services

Example 6: WaterAid Barrier analysis tool

Example 7: Learning - most significant change over time

PARTICIPATION AND EMPOWERMENT

1. Are you always invited to participate in community meetings?

2. Does your participation make a difference to the meetings?

3. During meetings, do you get the chance to fully express yourself?

4. During meetings, do you feel that your ideas and opinions are considered or valued?

5. If possible, please provide examples of a result or action that can be attributed to an input or suggestion made by you during a community meeting?

6. Describe your level of participation in community activities?

7. Please list the community activities that you have taken part in during the past 3 months:

8. Describe your level of participation in community sanitation and hygiene activities?

9. Please list the community sanitation and hygiene activities that you have taken part in during the past 3 months:

Example 8: Plan Gender and WASH monitoring tool

Example 9: SNV SSH4A outcome indicators

Example 10: SEI Empowerment in WASH index

Example 11: Citywide Inclusive Sanitation Equity Indicators

EQUITY AND INCLUSION SYSTEMS

Example 12: 2018 WaterAid Australia Women's Empowerment and Gender Transformation Framework

Example 13: Mission East Inclusion evaluation checklist

2.5 M&E framework: Sustainability

| Sanitation & Hygiene Services |
| Equity & inclusion |
| **Sustainability** |
| Process monitoring |

Sustainable WASH services require sustainability in all of the sector 'building blocks' (sector, policy and strategy; institutional arrangements; sector financing; planning, monitoring and review; and capacity development). Good guidance on systems strengthening already exists (see Section 2.7), hence the focus of this section is on the systematic **monitoring and evaluation of the sustainability of sanitation services and outcomes.** This type of M&E is required to identify any decreases in levels of service over time (e.g. due to durability issues, or failures to repair and replace facilities when necessary), and any changes in outcomes over time (e.g. reversion to open defecation; unused handwashing facilities; or unsafe emptying and disposal of faecal sludge).

Rural sanitation and hygiene services have significant sustainability issues: low-cost facilities (e.g. pit latrines with unlined pits; tippy taps made from sticks and plastic bottles) can degrade and collapse quickly, particularly if not well maintained. Furthermore, people from poor and marginalised groups often build less durable facilities than other households, which means the risk of sustainability issues is often higher in these groups. As a result, sustainability monitoring of rural sanitation and hygiene services and outcomes should be systematic (e.g. planned and budgeted), and should include the collection and reporting of disaggregated data on poor and marginalised groups.

There are no fixed guidelines on the frequency or nature of sustainability monitoring and evaluation, as these parameters will depend on the monitoring capacity and resources available, as well as the level of monitoring detail that is required. Ideally, an annual process of sustainability checks is recommended (e.g. re-verification of ODF criteria on the anniversary of ODF achievement, as part of an ODF birthday celebration; or a scheduled series of sustainability checks that allows the local government to check sustained outcomes in each community every year). Some countries (e.g. the Philippines and Nepal) have adopted a phased approach to sanitation development, which is designed to drive the achievement of higher levels of community sanitation and hygiene outcomes, while also requiring that a sustainability check is made on previous collective outcomes before verification of the higher level. This approach allows each community to progress at its own pace, with some communities progressing to higher levels more quickly, while ensuring that the sanitation and hygiene development process does not prevent ODF status, and that sustainability checks are built into the M&E framework (Robinson and Gnilo 2016).

UNICEF uses sustainability checks to assess the sustainability of WASH facilities, services, and behaviours with a national, subnational, or programme-based scope (UNICEF 2017). Sustainability checks are designed to:

- **Assess and analyse the sustainability of sanitation facilities and services, and the sustainability of behavioural change and newly created social norms**
- **Assess the underlying factors influencing the likelihood of future sustainability.**
- **Provide information on key sustainability challenges and make recommendations to government and its sector partners.**

UNICEF ODF sustainability survey: In testing!

UNICEF has developed a pilot ODF sustainability survey that is designed to address some of the challenges in assessment of ODF status over time. The survey is designed to check ODF sustainability, and explore reasons behind any reversion to open defecation, using three main instruments:

- **Community survey.**
- **Rapid household observation survey (100% households).**
- **Household interviews where no toilet observed.**

The community survey uses key informants to assess whether everyone uses a toilet; describe the sanitation behaviour of any households that don't have toilets; suggest why some households are not using a toilet; and confirm whether the community has taken any action about the households that are not using toilets. The community survey ends with a transect walk to previous sites of open defecation (named by the key informants) to observe whether there is any evidence of open defecation at these sites or otherwise visible around the community.

The rapid household observation survey is a census survey (100% households) that observes whether a household toilet facility is evident at each house, and notes the toilet type and condition (and handwashing facility condition) if present. At households where no toilet is observed, a household interview is conducted (if an adult from the household is present) to assess whether the household usually uses a toilet facility, or practises open defecation; and, if they don't have a toilet or they practise open defecation, to understand how this situation arose (in a previously verified ODF community).

SNV monitored sustainability indicators (also referred to as outcome indicators) in its SSH4A programme (SNV 2019). The indicators were assessed through dialogue with the key stakeholders for each of the sustainability areas, using self-scored assessments, multi-stakeholder discussions, and focus group discussions. The SSH4A sustainability indicators covered four main areas:

- **Demand creation.**
- **Sanitation supply chains.**
- **Behaviour change communication.**
- **WASH governance.**

*See **Indicator Table 3.0 Sustainability** for further detail on sustainability monitoring, including examples of survey questions used by sector organisations.*

Table 3.0 Sustainability (in M&E Indicator Framework document)

SUSTAINABLE SANITATION SERVICES AND OUTCOMES

Example 1: UNICEF sustainability checks

Example 2: UNICEF ODF sustainability survey

Example 3: SNV sustainability indicators

2.6 M&E framework: Process monitoring

Sanitation & Hygiene Services
Equity & inclusion
Sustainability
Process monitoring

Process monitoring provides information on implementation quality and service provider performance. The monitoring methods and indicators vary depending on the implementation activities planned or the services provided. The main aims are usually to check:

- **Outputs achieved:** Whether activities are completed, or services provided.
- **Implementation fidelity:** Whether adequate training was provided and implementation processes were followed (i.e. whether any changes were made in the type of activity or service, or in the way in which it was implemented or provided).
- **Quality of implementation or services:** whether activities and processes were well implemented, and whether services were well delivered.

Process monitoring is particularly important in large and complex programmes, where multiple activities or services are provided across large areas. Significant variations can occur in the quality and performance of implementation when many different stakeholders are involved (e.g. hundreds of community-level promoters, facilitators, or service providers). Process monitoring generates feedback on variations in quality and performance, which allow those managing implementation or service delivery to identify and respond to weaknesses and challenges.

Process monitoring should be designed to capture the fidelity and performance of the most critical processes in the main implementation and service delivery systems. Large rural sanitation and hygiene programmes include multiple systems, which are likely to evolve and be strengthened over time, thus process monitoring should be designed to be agile and flexible, with the potential to revise methods and indicators to reflect the latest requirements of the main activities and services

Community-based approaches

The effectiveness of community-based approaches, like community Led Total sanitation (CLTS), is highly dependent on implementation fidelity (i.e. whether CLTS tools are used and whether processes are properly followed), on participation in the processes, and on the intensity and rapidity of follow up after the initial activities.

Four important CLTS process factors were identified by a recent study in Ghana (Harter, Lilje and Mosler 2019):

- **Attendance at the CLTS triggering meeting.**
- **Number of supportive community leaders.**
- **Participants' expectations of receiving an incentive.**
- **Number of follow-up visits.**

These CLTS success factors were proposed (among others) by a number of previous studies, and were confirmed through detailed research as the most significant factors of success in rural communities in Ghana.

*Potential indicators for CLTS process monitoring are presented in **Indicator Table 4.0 Process Monitoring** of the M&E framework.*

Market-based sanitation

Market-based sanitation interventions aim to strengthen the sanitation market, often through the development of sanitation products, services, and businesses. Users purchase products and services through sanitation markets, sometimes using some form of financial support (e.g. credit, loans, subsidies). As a result, the focus of M&E systems for market-based sanitation is often on business development, marketing, sales, and profits, rather than on changes in sanitation and hygiene outcomes and impacts in rural communities.

However, UNICEF notes that it is essential 'to promote and monitor equity within the expanded sanitation market, to ensure the poorest and most vulnerable are benefitting from increased access to basic sanitation services', and to build on existing sanitation and hygiene monitoring systems wherever possible (UNICEF 2020).

Process monitoring for market-based sanitation should track:

- **Increases in household awareness, intention, and motivation to invest in sanitation improvement.**
- **Effectiveness and sustainability of demand activation and promotional activities.**
- **Support provided by government.**

*Potential indicators for **market-based sanitation** process monitoring are presented in **Indicator Table 4.0 Process Monitoring** of the M&E framework.*

Sanitation finance

Sanitation finance is used to accelerate sanitation uptake, often with the aim of increasing access to and use of sanitation services by poor and marginalised groups. Sanitation finance is generally targeted at specific groups (e.g. households without toilets, or households from poor or marginalised groups), therefore process monitoring should track the households that utilise sanitation finance (disaggregated by wealth quintile and main marginalisation factors); check whether these households are in the target groups (i.e. whether the sanitation finance has reached the intended population); and check whether the sanitation finance resulted in improvements in sanitation outcomes (e.g. gains in the use of basic or safely managed sanitation services).

*Potential indicators for **sanitation finance** process monitoring are presented in **Indicator Table 4.0 Process Monitoring** of the M&E framework.*

Table 4.0 Process monitoring (in M&E Indicator Framework document)

COMMUNITY LED TOTAL SANITATION

1. Attendance at CLTS triggering meeting

2. Number of supportive community leaders

3. Agreed incentives provided at community level

4. Number of follow-up visits

5. Completion of all stages of CLTS process

MARKET-BASED SANITATION

1. Number and % HH that purchased improved sanitation facilities

2. Number and % HH with new purchased facilities that are fully installed

3. Number and % HH with new purchased facilities that are functional and in use

4. Number and % HH satisfied with their new sanitation facilities or services

5. Number and % people recalling demand activation messages

6. Number and % villages receiving direct promotional activities or product sales

7. Amount and % of local government budget allocated to market-based sanitation

Example 1: Water for People: Service Outcomes at Local Level

SANITATION FINANCE

1. Number and % of toilet subsidies provided to households from poor and marginalised groups

2. Number of financial support products for sanitation supplied to rural HH

3. Community support for toilet construction

4. Number and % HH gaining use of basic sanitation services through sanitation finance mechanisms.

5. Household investment in new (or upgraded) toilet facilities

6. Government investment in sanitation finance

2.7 M&E framework: Other areas

Guidance on the additional M&E areas (costs, systems strengthening, and impact evaluation) is beyond the scope of this document. Fortunately, good guidance is already available in most of these areas – for further references see below.

Cost tracking

M&E systems should examine programme (or intervention) costs, benefits, and impacts, to enable assessments of cost efficiency and cost-effectiveness (i.e. the unit cost of achieving specific sanitation and hygiene outcomes, and also, where appropriate, the cost to achieve specific public health benefits, such as DALYs averted). The level of the cost tracking and impact evaluation will vary significantly across programmes, with some programmes only undertaking basic cost tracking and simple assessments of the beneficial outcomes achieved, and others undertaking more detailed cost assessments and more rigorous impact evaluations (e.g. large programmes with research components).

*For further guidance on **M&E of costs for rural sanitation and hygiene**, consult the WaterAid Rethinking Rural Sanitation website (which includes guidance on costing developed by a UNICEF–WaterAid-Plan International joint initiative):*

https://washmatters.wateraid.org/sites/g/files/jkxoof256/files/guidance-on-costing-of-rural-sanitation-approaches.pdf.

IRC Life-cycle costs approach: costing sustainable services www.ircwash.org/resources/briefing-note-1a-life-cycle-costs-approach-costing-sustainable-service.

Systems strengthening

A systems approach is not a specific type of intervention. It is a way of working that recognises the complexity and inter-linked nature of the real world, and engages with this complexity by breaking down the challenges into more manageable and easy-to-understand areas (i.e. building blocks) that can support action, while retaining the 'whole system' perspective (Huston and Moriarty 2018).

In WASH, systems strengthening activities are designed to achieve strong national and local WASH systems that, in turn, aim to produce WASH services for everyone, realising improved health, increased school attendance, and better livelihoods.

IRC has defined nine building blocks of a WASH system (Huston and Moriarty 2018):

1. **Policy & legislation**
2. **Planning**
3. **Institutions**
4. **Finance**
5. **Infrastructure**
6. **Regulation & accountability**
7. **Monitoring**
8. **Water resources management**
9. **Learning & adaptation**

Most systems-strengthening programmes seek to identify the key building blocks in a particular context and prioritise the strengthening of those areas, with the intention that the other areas can be strengthened later, once capacity, resources, and political commitment have increased.

Monitoring and information sharing are central to progress towards the system strengthening goals. Only by being clear on the desired outcome, and constantly monitoring progress towards that goal, can stakeholders make the necessary adaptations to achieve it. In addition, monitoring helps multiple stakeholders align their thinking and understanding to more effectively achieve a collective vision (Huston and Moriarty 2018).

Given the importance of M&E, systems strengthening activities should seek to strengthen M&E systems. Furthermore, M&E systems should track progress in systems strengthening in all of the critical areas (i.e. data should be collected on how finance for rural sanitation and hygiene changes, and whether it matches subsector requirements), and attempt to assess how system strengthening affects sustained services, outcomes, and impacts.

No tested guidance or good examples of an effective "indirect results" framework, designed to assess the impact of high-level system strengthening activities on overall outcomes and results, were available when this guidance was finalised (hence no further guidance is provided in this area).

*For further guidance on **M&E of systems strengthening,** consult the following references:*

UNICEF (2016) *Strengthening Enabling Environment for Water, Sanitation and Hygiene (WASH):* Guidance Note. New York: UNICEF

IRC (2016) *Organizing Framework for Functional National WASH Monitoring And Evaluation Systems: Accelerating National and Subnational WASH Monitoring for Improved Asset Management and Service Delivery* **www.ircwash.org/ tool-subcategory/monitoring**

Huston, A. and Moriarty, P. (2018) *Understanding the WASH System and its Building Blocks: Building Strong WASH Systems for the SDGs.* The Hague: IRC Working Paper

Aguaconsult (2019) *Strengthening Sanitation and Hygiene in the WASH Systems: Conceptual Framework.* Welthungerhilfe, Sustainable Services Initiative

Aguaconsult (2020) *Strengthening WASH Systems: Tools for Practitioners.* Welthungerhilfe, Sustainable Services Initiative **www.susana.org/_resources/documents/ default/3-3839-7-1586443927.pdf**

Tillet, W., Huston, A. and Davis, S. (2020) *Strengthening Water, Sanitation and Hygiene Systems: Concepts, Examples and Experiences,* **https://aguaconsult.co.uk/projects/ strengthening-water-sanitation-and-hygiene-systems-concepts-examples-and-experiences-2/**

Rigorous evaluation of impact (especially health impact) is extremely complex and expensive. Most programmes do not assess impacts, and instead rely on previously proven links between (sanitation and hygiene) outcomes and benefits to argue that evidence of improved outcomes (from M&E systems) is likely to be associated with positive impacts. Where impact is assessed, mixed methods are recommended to triangulate and validate findings, along with the use of rapid or continuous evaluation (and feedback) to ensure that the findings are useful to the key sanitation stakeholders and are available to inform the design of any future interventions.

*For further guidance on **M&E of the impact of rural sanitation and hygiene,** consult the following references:*

SaniPath Exposure Assessment Tool **www.sanipath.org/ sanipath-approach**

WSUP (2016) M&E Guide London: Water and Sanitation for the Urban Poor

Kitchen facility at good income family home, Chifra, 4 Feb 2020. (Credit: Maria Gerth-Niculescu)

Monitoring and evaluation for rural sanitation and hygiene
Guidelines and framework

PART 3: M&E GUIDELINES

3.1 What should be monitored (and evaluated)?

Effective M&E of rural sanitation and hygiene requires assessment of a far wider set of outcomes, processes, and impacts than mere toilet counting. The 2030 SDG sanitation target requires that even low-income countries start to monitor the use of safely managed sanitation services, and examine equity and inclusion more closely in the drive towards universal use of basic services. Consequently, programmes and sub-national governments also need to develop, implement, and refine more progressive M&E processes and systems, which will inform the evolution and strengthening of national systems.

Different contexts and situations will have different M&E needs – there is no one size that fits all. The M&E processes outlined in this document will not be appropriate or feasible in all situations, perhaps due to scarce capacity and resources, or different priorities that require other assessment processes. Nonetheless, a good M&E system demands multiple frameworks, methods, and tools (designed to assess a range of different dimensions and aspects), working together in complementary fashion to provide a comprehensive understanding of the change process, and its limitations (Batliwala 2011).

M&E tools should also capture negative effects and reactions, and not just examine positive change – it is not enough to report that women and girls now have access to an improved sanitation facility if the toilet is in the wrong place or is difficult and unpleasant to use, or if it fails to provide privacy and does not facilitate menstrual health, or if the increased burden of collecting water for flushing the toilet and for washing hands, and the time spent cleaning the toilet, outweighs the benefit of access to an improved sanitation facility.

Quantitative data, which present 'hard' numbers as evidence of results, are often taken more seriously than 'soft' data, such as feedback on issues or problems, which are often treated as anecdotal and lacking in rigour (Batliwala 2011). However, some processes of change are complex and subtle, making them difficult to measure in numbers.

The most complete picture of change emerges when both qualitative and quantitative assessment tools are used – for instance, surveys that generate quantitative data on changes in awareness, participation, outcomes, and impacts, alongside qualitative methods like focus group discussions that describe how change happened. An iterative approach in the use of quantitative and qualitative assessment tools encourages validation, allows issues to be understood more fully, and results in more complete understanding and learning.[19]

But monitoring and evaluation also have costs. Not least being the time taken to process, analyse, and use all of the data or information collected. Web-based systems and mobile monitoring, which allow data to be uploaded directly to an internet-accessible database from a mobile phone connected to a data network, have greatly increased the efficiency of some forms of monitoring and evaluation (e.g. household surveys). Yet some carefully collected data never get reported and never get used.

[19] Iterative approach: using the learning from the first process to inform the design and implementation of the second process, with each subsequent process triangulating findings and deepening understanding of the key issues

Where monitoring data are not well used or scrutinised, the incentive for monitors to collect data reliably and regularly are greatly decreased. In contrast, where decision-makers review progress and performance data regularly, and follow up on discrepancies or poor performance, far greater attention is paid to the timeliness, reliability, and scope of monitoring processes.

Few systems allocate adequate capacity to the verification, analysis, and reporting of the monitoring (and evaluation) information. In many national systems, data are collected, but busy programme staff do not have the time or incentive to aggregate and process the data, or review progress and trends, or present these to the decision-makers who could enact changes that improve progress. For this reason, the budget and capacity allocated to the analysis and use of information on rural sanitation and hygiene must match the scope and scale of the M&E systems – where more data are demanded, the system budget and capacity has to be increased appropriately; and, conversely, where little budget or capacity are available, the M&E system should be kept simple.

M&E systems should be designed to collect, analyse, and report the information that practitioners and decision-makers consider essential. These two groups are likely to have different interests – practitioners will be more interested in the details, and in how processes are working, whereas decision-makers tend to be more interested in results – but both of their priorities are important, hence they need to be consulted and involved in the design of M&E systems. The other important group to consider and consult is the users of the services: these individual and community users often need information on service outcomes and service quality to hold local governments and service providers accountable, and it is important to remember that the end goal of all of these investments and activities is that people use safe and sustainable sanitation and hygiene services.

3.2 What tools and processes should be used?

The main aims are usually to check:

- **Routine monitoring visits** (inventory): regular collection of data, often passed up the monitoring chain from community volunteers (who are supposed to visit households and collect data) to local government or programme staff.
- **Household surveys:** a set of identical questions posed to all respondents (or groups) to track changes in outcomes and impacts, or assess attitudes, knowledge, behaviours, intentions, etc. Most surveys provide a list of closed questions (with a choice of possible responses) but open-ended questions can also be asked (although these are harder to process and use in large surveys) (University of Oxford 2014). Surveys often include observation of some features (e.g. 'ask and observe' type questions).
- **Focus group discussions:** discussions with groups of internal or external stakeholders to explore perceptions and opinions about specific questions, issues or changes. Requires skilled facilitators, and good planning (to avoid group power dynamics preventing people from speaking up).

- **Structured observation:** continuous observation and recording of household sanitation and hygiene practices by an observer over several hours. Structured observation has been found more reliable than self-reported practice, but is an expensive and intensive process that also suffers from reactivity (due to the presence of the observer).
- **Community-wide assessments:** such as the community transect walks used in some ODF community verification processes.
- **Secondary information:** not all information has to be collected directly; there are multiple sources of information that can be useful to M&E of rural sanitation and hygiene (e.g. collection of population and clinical health data; use of government poverty markers).

Ideally, M&E systems should utilise a mix of these different assessment methods, with different tools and processes used at different times to provide a comprehensive picture of change and enable learning. In particular, routine monitoring should be supported by periodic monitoring or evaluation (e.g. annual sample surveys) and qualitative processes to validate findings and encourage improvements in large-scale processes.

Use of periodic household surveys to strengthen government systems

The SNV Sanitation and Hygiene for All (SSH4A) programme used periodic household surveys (implemented using Akvo mobile monitoring) to provide more reliable data on sanitation and hygiene outcomes, which were then used to identify weaknesses and strengthen the routine monitoring systems used by government. In the Ethiopia SSH4A project, local governments were involved in implementing the periodic household surveys, and were presented with the survey results for discussion at the end of each household survey process.

In the initial years of the project, the local governments tended to reject the SSH4A survey results, arguing that any discrepancies were due to sampling errors and suggesting that the routine monitoring data collected by local governments were more reliable. SNV would then suggest visits to any localities where the survey data and routine monitoring data differed, to examine the discrepancies. In almost every case, after visiting, the local governments agreed that the household survey results were reliable, and that the routine monitoring data had some weaknesses. In this way, over time, the government came to appreciate the household survey process, worked to reduce the discrepancies between the two M&E systems, and became interested in implementing a similar online monitoring system.[20]

Monitoring of the use of safely managed sanitation services has highlighted a particular monitoring challenge – the need to monitor safe management along the sanitation service chain, including the management of on-site sanitation facilities over time, and the management of emptying, transport, treatment, and disposal services. These management actions occur at different times during the lifespan of a sanitation facility, and may be undertaken by different people, e.g.

20 Based on 2017 interviews by the author of the Ethiopia SSH4A project team and of local government officials working in the project area.

household, neighbours, informal service providers, formal service providers, or local authorities. As a result, monitoring systems need to be designed to collect data from the household about how sanitation services are managed over time (e.g. what happens when latrine pits are flooded, or become full), and also from service providers and local authorities about what happens to faecal sludge after it has been removed from latrine pits or septic tanks. Collecting and combining these data is challenging, as service providers may overlap and may be reluctant to report the full extent of services and income.

There are some changes, particularly macro-level changes such as improvements in social inclusion and empowerment, that can only be reliably assessed over much longer periods than the usual 3–5 year programme duration. Therefore, M&E frameworks should also consider the processes and resources required to track these slower societal changes, and ensure that some thought is given to how these longer-term processes will complement the other M&E processes being used, and how the findings from the various processes will be combined and effectively used.

3.2.1   Routine monitoring

Most government monitoring systems rely on routine monitoring visits to collect household level data on rural sanitation and hygiene progress. Usually, community volunteers (or government extension workers) are tasked with updating sanitation monitoring data on a weekly, monthly, or quarterly basis. These data are then passed to a local government official, or to programme staff, who are responsible for aggregating the data collected in that area, and either producing a report, or passing the data along the monitoring chain for further aggregation and reporting.

This type of routine monitoring system is used for national (and programme) monitoring of sanitation outcomes in many low-income countries. Unfortunately, it is challenging to collect sanitation data from every rural household in a country, which means that these data are often unreliable (as there are few incentives for data collectors to visit every household in every period; the time allocated to the work is often insufficient; and there are rarely verification systems in place to check data quality and reliability, e.g. through spot checks). There are also significant challenges in ensuring timely reporting (as there may be many thousands of data collectors working in thousands of communities, with varied constraints on their time) and in aggregating the data – particularly where periodic data reports are partial (i.e. only from some households in some communities) and paper-based.

Efforts are increasingly being made to strengthen routine monitoring systems, including the introduction of monitoring using mobile phones (either 'feature phones', which send data in SMS messages, where the data network is limited; or smartphones where data can be more easily uploaded to web-based systems), and the processing and reporting of sanitation data through national monitoring information systems (MIS). However, most recent experience (see box) suggests that it is difficult to get national monitoring systems (in low-income countries) to provide reliable, timely and detailed information on rural sanitation and hygiene services and outcomes, so other monitoring systems and approaches should also be considered (where information on outcomes and services is currently weak or absent).

A number of different approaches have been taken to national monitoring of rural sanitation and hygiene outcomes. As additional information are required on the quality and use of sanitation and hygiene services, the use of mobile monitoring and WASH MIS has increased.

Shazia Qasim, 24, in front of the washroom in her home in the village of Chaoni, District Muzaffargarh, Province Punjab, Pakistan, December 2017. (Credit: WaterAid/ Sibtain Haider)

National monitoring systems for rural sanitation and hygiene

Kenya CLTS real-time MIS: in 2015, the Ministry of Health in Kenya established an online MIS for the reporting of ODF status. Paper forms are completed by community health workers, aggregated by local health officials, and eventually entered into the system at county level. The MIS provides a useful summary of national ODF progress, but some counties struggle to make timely data entries, little household data are available, and the system is not designed to monitor post-ODF progress.[21] Furthermore, UNICEF continues to pay for the hosting and support of the national MIS, with only limited contributions from the government.

Mauritania BADAM Akvo MIS: DGIS supported the Ministry of Water and Sanitation in Mauritania (through a UNICEF programme) to set up an Akvo FLOW-based MIS. The system allowed for community level data collection using smartphones, with regional data quality checks and reporting on ODF, household sanitation, and handwashing facilities. Unfortunately, the government was unable to continue to fund the database hosting when the DGIS programme finished, which resulted in the data no longer being accessible. UNICEF is currently supporting the ministry to develop an Access database that will enable use of the previous Akvo database through a more simple and lower cost system.

Mali SANIYA MIS: UNICEF supported the development of a national system centred on CLTS and ODF outcomes, which includes a number of progressive indicators (e.g. child excreta disposal, post-ODF outcomes, equity indicators). The system is paper-based, with upload of data by regional administrators (after validation checks e.g. review of ODF certificates or official declarations by local governments), although mobile-phone-based data uploading is currently being piloted in several communes. The WASH sector in Mali is 90% financed by development partners, thus sustained finance for the MIS remains a challenge (particularly since decentralisation in 2020, as some local governments lack capacity and resources) despite strong demand from the government for this information. The main lesson learned is the importance of defining who collects what for whom, and consideration of the capacity available for sustainable operation and maintenance of the system.

Cambodia WASH MIS: the Ministry of Rural Development (MRD) in Cambodia previously supported an unsuccessful attempt to develop a national system using mobile monitoring, which resulted in a strong aversion to the introduction of high-technology monitoring solutions. In 2019, the MRD coordinated with other national stakeholders to develop a simple Excel-based WASH monitoring system that collected data only on core indicators.

Nigeria WASH Norms Survey: UNICEF supported the government to implement the first annual (nationally representative) WASH survey in 2018. The WASH Norms survey produced reliable data on WASH outcomes, which proved valuable to the government. The survey was expanded in 2019 to collect additional data on water quality and handwashing practice, with 20% finance from the federal government. The survey was cancelled in 2020 (due to the COVID pandemic) but is being 100% financed by the federal government (with technical support from UNICEF) in 2021. Given the size of Nigeria, the survey process is lengthy and expensive, so future survey rounds are envisaged every two to five years.

3.2.2 Household surveys

Household surveys provide an alternative method of monitoring (or evaluation) with more control over the process and reporting. In the past, household surveys used paper forms, which survey enumerators completed by hand, and which then had to be entered into survey databases and processed to produce results. The management of paper survey forms is an expensive and time-consuming process. However, increasingly, household surveys are implemented using smartphones loaded with the survey application and questionnaire, allowing data to be entered directly into the smartphone (which automates the survey skip codes, thus speeding up the process) with the data uploaded to an online database as soon as the interview is completed (subject to the availability of a data network). The smartphone survey process allows the survey data to be checked, interrogated, and used almost immediately, which reduces costs and improves the utility of the data. In addition, the markers that can be attached to the smartphone survey data (e.g. time stamps, GPS coordinates, photographs) provide detail and facilitate checks to improve data quality and reliability.

The downside of household surveys is that they are often sampled – that is, a sample of the population being monitored are randomly (or purposively) selected for survey, in order to reduce the cost of the assessment. Samples are generally designed to be representative of the target population (and to produce statistically significant results) but sample size is often constrained by the survey budget. Sampling introduces a large number of additional variables that influence the survey results, including: the survey design, the sample size selected, the process used to select households randomly, the reliability of the survey team (in applying the processes agreed), the quality of the enumeration (i.e. whether the questions are asked correctly, and the responses are well reported), the reliability of the data processing and data cleaning, the reliability of any population estimates,[22] or the way in which the results are aggregated, analysed, and reported.

All too often, household survey results are taken at face value – the numbers appear convincing, and people rarely think to question whether the data are valid, representative, or reliably reported. In particular, baseline surveys are rarely checked or verified in any detail, despite being critical to any estimate of progress. Baseline surveys may be undertaken in a hurry, at the start of a programme or planning period, before resources, capacity, and processes are fully available or developed, and without much scrutiny or quality control. As a result, checks are required to ensure that baseline surveys report reliable baseline data, and that data (or other information) have not been omitted that will later be required to estimate progress and results.

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21 UNICEF Kenya is currently supporting the Ministry of Health to revise and update the realtime MIS.

22 Where the survey is designed to generate data representative of the larger population, the findings from the sample survey are usually applied to the larger population

DFID WASH Payment by Results programme (2014–2020)[23]

The DFID WASH Payment by Results programme included three separate programmes implemented by consortia of international NGOs and local partners. All of the results were verified by teams of independent consultants before payments were made by DFID. In one of the programmes, an early payment was linked to successful completion of the baseline household surveys. As a result, the survey designs, implementation, and reporting had to be checked and verified by the independent verification team before the payment could be made.

In one country project, the baseline household survey reported only 2 per cent access to improved sanitation. While this baseline access was lower than expected, the survey design, implementation, and results looked good – survey responses, GPS coordinates, and toilet photographs were provided, and all seemed to be in order. However, a field spot check (in a few randomly selected survey communities) by the verification team found toilets in households where the baseline survey reported no toilets (which suggested that the survey was under-estimating sanitation access).

Further investigation (by the international NGO) revealed that the regional health authority had taken the lead in the enumerator training process, and had instructed the enumerators not to collect data on any toilets that did not meet the newly agreed regional criteria for an improved toilet. Unfortunately, neither the NGO team nor the health officials supervising the survey work realised the implications of this change, which meant that households with unimproved toilets were marked as having no toilet, and that no data on these unimproved toilets were collected (because the skip codes in the smartphone survey app jumped all of the questions on toilets following the 'no toilet' response).

The international NGO decided to re-implement the entire household survey, and retrained the survey enumerators. The repeat survey reported 23 per cent baseline access to improved sanitation, compared to the 2 per cent baseline access reported in the first survey, which would have resulted in a 21 per cent increase in the access gains since baseline estimated by any later surveys (due to the deduction of only 2 per cent baseline access, instead of the real 23 per cent baseline access).

In the end, this issue did not change any of the payments made by DFID – the international NGO achieved all of the sanitation targets agreed (even with the higher baseline access figure), and funded the repeated household survey itself. However, this example illustrates the importance of checking household survey processes in detail, and verifying survey data before using the reported results.

3.2.3 Focus group discussions

A focus group discussion (FGD) is a qualitative research method and data collection technique in which a selected group of people discuss a given topic or issue in-depth, with facilitation from a professional, external facilitator. The FGD process assumes that the group processes activated during an FGD help to identify and clarify shared knowledge among groups and communities, which would otherwise be difficult and time-consuming to obtain through individual interviews. FGDs allow good facilitators to solicit the participants' shared views, as well as their differences, through open discussion and reflection (Van Eeuwijk and Angehrn 2017).

FGDs can vary in size, but generally have 4–12 participants, either of natural groups (people who belong to a pre-existing group, e.g. family, co-workers, older people, women's self-help groups, people with disabilities, etc) or expert groups (people with particularly good and broad knowledge and experience of the research topic).

FGDs are more difficult to organise at scale, as good facilitators are required (who may not be available in sufficient numbers to conduct multiple FGDs in different places); and the qualitative outputs are usually more difficult to process and analyse at scale than the largely quantitative data collected by a household survey.

SNV SSH4A focus group discussions

SNV implemented a large-scale focus group discussion process to assess sustainability indicators across the nine country projects in its DFID-supported SSH4A programme. In each round of sustainability indicator assessment (more or less annually), more than 300 FGDs were facilitated (in four different phases, to enable quality facilitation, and to allow time for reporting on the findings across eight different sustainability indicators).

A preparation visit was made by the facilitator before the FGD to notify the households selected (as these were usually selected from household survey data collected earlier in the year), agree the date and time of the FGD, and organise the process. Each FGD involved 6–12 participants, and used a common set of questions (for each sustainability indicator) to ensure that the discussions covered roughly the same issues and topics.

At the end of the process, the facilitator asked the participants to score the sustainability indicator against a pre-determined ranking scale (0–4), and make recommendations for how the sustainability indicator (e.g. SI7: Influence of women in rural sanitation and hygiene programme activities) could be improved. The scoring process allowed SNV to combine and aggregate FGD results across larger areas, to obtain a rough idea of progress in each area.

In reviews of the FGD process, the SNV country project teams emphasised that the main value of the process was not the numeric scores generated, but the detailed qualitative learning about sanitation, hygiene, and governance issues and changes as perceived by different groups, and the recommendations received from service users (including people from marginalised groups) on how interventions and services could be improved.

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23 From personal experience of the author, who was lead verifier on one of the DFID WASH Payment by Results programmes from 2014 to 2020.

3.2.4 Structured observation

Structured observation is direct observation of a household at a fixed time for a fixed period, with quantitative data collected on a number of selected behaviours. Structured observation is usually undertaken simultaneously by a large team of trained observers, with multiple households observed at the same time by the observation team in order that the observations are made under similar conditions.

Structured observation provides detailed information on the frequency, intensity, and duration of the observed behaviours (Bentley et al. 1994), but is expensive and time-consuming as it requires one well-trained observer for each household observed. Structured observation is also subject to reactivity (i.e. the act of observation can change the behaviour of the participants),[24] with the risk that household members act in ways that they perceive will be viewed favourably by others.

See **Indicator Table 1.1 Elimination of Open Defecation, example 4** and **Indicator Table 1.6 Hygiene Services, example 3** for examples of how the GSF outcome surveys used structured observation to monitor sanitation and hygiene outcomes.

3.2.5 Community assessments

Some outcomes and impacts need to be assessed at community level, through processes that are different from the household surveys and focus group discussions discussed above. Assessment of collective outcomes is an important part of rural sanitation and hygiene, particularly as communities and local governments push for the elimination of unsafe sanitation practices (e.g. open defecation, use of unimproved and shared sanitation services), and work towards universal use of basic and safely managed sanitation services.

Many low income countries already have an ODF community verification process, designed to check whether a particular community has met the agreed ODF criteria. These ODF verification processes usually involve inspection of a random sample of households, and a transect walk around the community (including to any previous sites of open defecation) to observe whether open defecation appears to have been eliminated.

Assessments of a collective outcome, such as an ODF community, require a slightly different approach to assessments of household outcomes. Household surveys are usually based on a relatively small sample of households in a large number of communities (e.g. DHS household surveys often sample only 10–15 households in each community; some health surveys use a 30 x 30 two-stage cluster sampling approach, with 30 households sampled from 30 communities or clusters). This process assumes that the random sampling works well, and that the aggregation of household results from a relatively large number of communities results in a sample that is representative of the wider population (e.g. at district or programme level). However, much higher sample sizes would be required to provide a statistically significant result at community level. In addition, the exceptions in an ODF community (e.g. any

households that continue to practise open defecation) tend to be concentrated in people and households from particular marginalised and high-risk groups that are small in number, and may not be detected by even relatively large sample sizes (e.g. some ODF verification processes recommend sampling 10–30 per cent of all households).

In a small number of communities, a community assessment can be used to identify households that don't have or use latrines, people that are reported to continue to practise open defecation, and specific groups that are at high risk of either not having or using facilities, or not being able to maintain services (e.g. groups such as widows, female-headed households, chronically poor people, disabled people, and older people). A community assessment should then include the following:

- **Visits to 100 per cent of households reported to practise open defecation.**
- **Visits to most (50–100 per cent) of the pre-identified high-risk households.**
- **A random sample of the rest of the households (e.g. 10–25 per cent sample).**
- **Transect walk to open defecation sites (allowing identification of any other high-risk households observed during the transect walk).**

This type of community assessment greatly increases the chances of detecting any households that practise open defecation, or whose sanitation services are unimproved or unsafely managed, hence it strengthens the ODF verification process and increases learning on why some people do not achieve, or sustain, the use of basic or safely managed sanitation services. However, this process is complex and relatively time-consuming, as it requires a facilitator able to convene community key informants and rapidly elicit information about high-risk people and groups, and a visit team able to survey all of the selected households. As a result, this type of detailed process is used more for evaluation than for monitoring.

Community Leave No One Behind (CLNOB)

UNOPs and the Sanitation Learning Hub has developed a practitioner handbook on the Community Leave No One Behind (CLNOB) approach piloted through the second phase of Swachh Bharat Mission-Grameen programme in India. CLNOB uses a participatory mapping of households to identify those who have not been reached by previous sanitation improvement activities, those who may need assistance and support, and those whose toilets require improvement to ensure safe management and accessibility for use by all.

The process is rapid and practical, using Gandhigiri principles of empathy and gentle persuasion to facilitate improvements, revive a committee of natural leaders to manage and monitor the process, and encourage local leaders and influencers to support the process. (Shukla and Verma, 2021)

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24 Ideally, both participants and observers should be unaware of the target behaviour of the structured observation, and of any links to previous interventions, in order to blind them to the specific aim of the research, e.g. in the SuperAmma handwashing programme both participants and observers were told that the research was a study of domestic water use (Biran et al. 2014).

3.3 Sampling for household surveys

Random sampling of households

Random sampling of households is critical to the accuracy of sample surveys (which are designed so that the mean survey estimate of a value is close to the true value in the underlying population). The survey design usually assumes that households are randomly sampled, thus any variation from a random sample is likely to increase the chance that the survey estimate is further from the true value. Appropriate sample sizes should be used to ensure target groups are adequately represented. Resources for designing and selecting the sample are available from the UNICEF MICS programme, including a sample size calculator and a sample design guide.[25]

Two main approaches are used for random sampling of households within rural communities:

- **Interval or systematic sampling (without household lists).**
- **Simple random sampling (with household lists).**

In the first case, the total number of households in the community is divided by the cluster size (number of households to be sampled in this community) to generate a sampling interval: if we want to sample 20 households from a community containing 100 households, then the sampling interval would be 5. Where no reliable list of the households in the community exists (as in many countries and contexts), the first household is randomly selected by the survey team, with every fifth household then surveyed (e.g. the enumerator continues around the community, counting 4 households from the last interview, and each time interviewing the fifth household encountered).

Where a reliable list of households in the community exists, simple random sampling can be used (preferably in advance, by someone who does not know the community or local area). Random number generators are used to select households from the list, and these named households are located and surveyed.

Both approaches have weaknesses. However, where no reliable household lists exist, there is generally little alternative to interval sampling.

The main issues with interval sampling are that:

- **The full extent of the community (including sub-communities) may not be apparent, or may be deliberately hidden from the survey team (e.g. if marginalised or excluded groups live outside the community centre).**
- **Settlement patterns may limit sampling in some areas of the community (as enumerators tend to follow lines of housing, and may be reluctant to search out separate clusters of housing)**
- **Enumerators tend to start sampling in the centre of the community (e.g. after meeting the community leadership in a central location), and often over-sample households in central locations (e.g. along main roads).**
- **Remote households may be omitted from the sample.**

The risk in interval sampling is that some households or sub-communities may be excluded from the sample. There is a tendency for these households and sub-communities to be located in more distant and hard-to-reach areas (which enumerators are often less willing, or have less time, to visit), which means excluded households may have lower than average sanitation outcomes, and that the data collected from this community will over-report sanitation outcomes. Smartphone surveys now provide a way of checking sampling patterns using GPS data (see following section on **verification checks on sample surveys**).

Systematic random sampling from a household list increases the chance that the households are randomly selected. However, this approach is dependent on the reliability and completeness of the household lists. In some countries, household lists are politically controlled, thus may omit some households (e.g. from opposition political parties, or from minority ethnic, religious, or cultural groups). More frequently, household lists are not regularly updated, and fail to account reliably for any changes in population e.g. new adult, migrant (in or out), refugee, seasonal, or abandoned households. Good household survey systems should include a process, prior to the survey, to check the current total population and update and validate household lists in each community (e.g. by comparison with the most recent routine sanitation monitoring data, and through checks with other sources of population data).

*See this London School of Hygiene & Tropical Medicine website (on epidemiology in conflict-affected populations) for some simple guidance on household surveys: **http://conflict.lshtm.ac.uk/page_20.htm***

Sample frames

Most large household surveys use a form of cluster sampling, using multi-stage sampling at different population levels to reduce the logistical challenges of random sampling from a large population. In rural areas, the clusters are usually villages (or sub-villages, if typical village size is very large), and there may be another level of sampling at a higher level of administrative unit (e.g. four out of eight districts might be sampled, with 25 villages randomly sampled from each district, and 20 households surveyed in each of the randomly selected villages: 4 x 25 x 20 = 2,000 households).

The sampling process requires that sample frames are prepared at each level of sampling. A sample frame is a list of all the items in the population – that is, a list of all the districts in the area of the survey; a list of all the communities in each district; and, where available, a list of the households in each community. These sample frame lists are then used to randomly select the districts (or other administrative unit), communities, and households to be sampled.

In some low-income countries it can be difficult to find up-to-date lists of the communities located in each administrative unit (e.g. ward, sub-district, district), particularly where people live in small communities, and there is some seasonal migration or mobility. Common problems include: new communities missing from lists; abandoned communities still listed; seasonal movements not recognised (e.g. large fishing, herding, and harvesting camps); and failure to report changes in the boundaries of administrative units (e.g. new districts formed, district merged, villages transferred from one district to another etc).

25 https://mics.unicef.org/tools

Where communities (or administrative units) are missing from sample frames, they cannot be sampled by household surveys, which may impact on the survey results. As noted previously, households and communities in marginal situations (with lower than average sanitation outcomes) are often the ones missing from official lists, which means that their exclusion will result in over-estimation of sanitation outcomes. Checks on the reliability and completeness of sample frames can be an important way to reduce non-sampling errors (see *following section on **verification checks on sample surveys***).

Disaggregated monitoring data

Disaggregation of M&E data and information enables checks on equity and inclusion in sanitation and hygiene services and outcomes, and on progress towards the elimination of open defecation and inadequate sanitation services (e.g. unimproved or limited services) and the universal use of basic and safely managed services.

*See **Section 2.4 Equity and Inclusion** and **Indicator Table 2.0 in the M&E indicator framework** for further detail and examples of how to disaggregate monitoring and evaluation data.*

One of the key challenges in the generation of useful disaggregated data on rural sanitation and hygiene is around the representivity and statistical significance of these data. When the disaggregated data are from a sample survey, there is a risk that the sample size (number of households surveyed) may not be sufficient to produce statistically significant results for disaggregated groups.

The sampled households are usually randomly selected, which means that the chances of surveying households containing people from some of the smaller marginalised groups (e.g. people with disabilities) may be low. When only a small sample of a particular disaggregation category is available, any results may not be statistically significant[26] – for example, if 1,000 households are surveyed from 50 communities, and only 15 of the surveyed households contained a person with disability (slightly below the average 2 per cent disability rate in this particular country, due to the random sampling), and only 10 of these households reported toilet use, then it appears that sanitation use in this group is 10/15 = 67 per cent. Sanitation use by households in the population containing a disabled person might be much lower (say only 40 per cent), but the small sample selected disabled households from communities with higher than average sanitation coverage, which gives the impression of higher toilet use.

There is a significant risk that disaggregated data from household surveys may be misleading, particularly where the variation of the result in the underlying population (e.g. sanitation use by people with disabilities) is high. There are two main solutions to this problem:

a. **Increase the survey sample size (so that disaggregated results are more likely to be statistically significant).**

b. **Undertake separate surveys (with purposive sampling) for marginalised groups that form only a small proportion of the population.**

There are cost considerations to both of the proposed solutions. In some cases (e.g. disaggregation categories with

relatively large populations), increasing the sample size of an existing household survey to an appropriate level may not result in a large increase in the cost of the survey. However, where the marginalised group is a small and critical group, such as people with disabilities, it may be cheaper and more effective to implement a separate survey that is designed to assess outcomes, use of services, and participation and empowerment among the target group. This approach has the added benefit of allowing more targeted equity and inclusion questions to be included, without increasing the duration of the main household survey.

Where cost constraints prevent the use of larger sample sizes nor separate surveys, any disaggregated survey results that are based on a small sample size should be flagged (with the number of people or households surveyed in each category clearly reported) so that anyone using the results is aware of the potentially large margin of error associated with these results.

3.4 Verification checks

Some form of data verification and validation process is important to all M&E systems. The old adage 'rubbish in equals rubbish out' holds true, whatever sophisticated technology is used to collect, upload, and report the information. A robust verification and validation system can significantly improve data quality and reliability, not least because systematic application of verification and validation checks means that monitors know someone is looking over their shoulder, and that there is a good chance that any mistakes or mis-reported data will be spotted and addressed.

Verification checks are particularly important in sample surveys, where they can be used to improve the design, sampling, implementation, analysis and reporting. These surveys are often the main way in which programme results are measured and reported yet, despite the complexity of the process and the significant potential for errors in the various survey processes, there are – in many countries and programmes – few checks on the accuracy and reliability of these surveys.

Internal (by the implementing agency), external (by independent bodies) and user verification processes are recommended. Internal verification checks strengthen the survey process, helping to identify common problems and errors early in the process, which encourages improved survey training, closer supervision of survey processes, and more reliable work by survey teams. External verification checks professionalise the survey process, helping to identify risks within survey systems, with systematic checks used to identify weaknesses and spot errors that might affect results. User verification processes allow communities and service users the chance to review the information being reported on their services and outcomes, providing some downward accountability (for example, the 2009–2013 World Bank Nepal Rural Water Supply and Sanitation Project included community social accountability audits facilitated by independent consultants, through which the data and design for each community water supply and sanitation scheme were presented back to the community for review and comment, and any complaints about the process were collected).

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26 Statistically significant results provide confidence that they are not attributed to chance, or to sampling error (which is driven by the size of the sample and the variation of the result in the underlying population).

The following survey verification checks were developed for independent verification of household survey results (implemented using the Akvo FLOW smartphone survey application) from the 2014–2020 SNV SSH4A programme. Many of these verification checks were later adopted by SNV in its internal quality assurance process for the SSH4A performance monitoring system, and are suitable for use in other survey situations:

1. **Sample frame checks:** including telephone checks with local government officials to check whether any villages were excluded from the sample frame.

2. **Cluster sample checks**: to confirm that any changes in the communities or number of households to be sampled in each administrative unit (provided in advance of the survey) could be justified. Replacement villages should be matched with villages removed from the sample (e.g. due to conflict or natural disasters, such as flooding), and over- or under-sampling in any community or area should be explained.[27]

3. **Field spot checks:** resurvey of a sample of surveyed households in some randomly selected survey communities, to see whether the same results are found (any discrepancies should be checked for evidence of systemic errors).

4. **Toilet photograph checks:** examination of photographs of household toilets (uploaded with the survey records) to check that survey responses and toilet classification matches the toilet in the photographs.

5. **Map checks:** reviews of whether the sampling pattern visible in selected survey communities (using the GPS coordinates of the household survey points plotted on satellite images of the community) aligns with the agreed protocol for random household sampling.

6. **Baseline survey comparison:** check that the survey area in the baseline survey is the same (or similar), and that the survey results are comparable.

7. **Data consistency checks:** review of the planned, actual, and final number of survey households; of survey records that have been removed or altered (including justification and review of any removed or altered records); and any other information provided on data cleaning, processing, and analysis.

8. **Re-calculation of survey results:** review of any population data (including population projections), and recalculation of the results (to check for arithmetic or other errors).

Some of these checks were made on small samples in order to make the verification process relatively quick and efficient. The checks were designed to provide triangulation through a number of quality checks – where all of the verification checks were passed, the overall result was verified; where some verification checks were failed or partially failed, further checks were made (to check on the extent and severity of the problems or issues exposed), and the implementing agency was asked to explain any discrepancies from the reported survey results. This systematic process resulted in significant strengthening of the survey process, and greatly increased the confidence of all of the stakeholders in the verified survey results.

3.5 Who should undertake M&E?

Even where there are strong M&E systems, learning from them tends to remain within implementation agencies or, at best, is shared with donors. Practitioners often fail to build and advance a shared knowledge base about what works and what doesn't, or to identify those who are not being reached by services, and generally don't take the time to share their experiences with others, who could both learn from them and add their own insights (Batliwala 2011).

M&E can be extractive – designed to produce information for donors, sector organisations, and, sometimes, for governments. Insufficient effort is made to ground-truth findings by sharing and discussing them with marginalised groups and the communities whose lives are being reported on. Furthermore, M&E can sometimes involve questionable ethics and the possibility of misleading and exploiting people – for example through requiring participation in lengthy processes of uncertain benefit to the participants.

The involvement of communities and marginalised groups in the design, implementation, reporting, and use of M&E information can strengthen the M&E processes (as they are likely to become more relevant and appropriate) and increase the benefits (through participant validation, feedback, and additional insights on the M&E findings). As the equity and inclusion literature suggests, there should be 'nothing about us without us' (House, Ferron and Cavill 2017)!

Large-scale routine monitoring requires significant capacity at household and community level. In most low-income countries, this capacity is provided either by community volunteers (such as community health volunteers, or members of a community sanitation and hygiene committee) or by government extension workers (such as health extension workers, community midwives, or local government workers and officials). These community or local government monitors pass the monitoring information up to higher level programme or government officials, where it is eventually aggregated and reported on.

Routine monitoring by community volunteers and extension workers should not be too demanding, as the monitoring work is only one part of the duties of these volunteers and extension workers, thus it should be complemented by periodic monitoring by people who are paid to undertake any more complex and time-consuming assessments that may be required.

But M&E should not be relegated to something on which only a fixed percentage of the budget is spent. If we don't know where we are, what is working and what is not, whether services are safely managed and equitable, and whether impacts are positive – then the chances of reaching our goals are extremely limited, however much is spent on implementation, follow up, and learning activities.

27 Probability proportional to size sampling is often used, wherein the population of each primary sampling unit (e.g. district) determines the proportion of the total sample size that is sampled from the sampling unit. Any change in the size of the sample in this sampling unit will alter the weighting of the result, thus needs to be minimised (and carefully justified and checked where there is no alternative).

3.6 Who should respond (to M&E questions)?

It is also important to consider who is being asked the questions, and why. Intra-household variations in sanitation and hygiene behaviour can be significant, with knowledge of the sanitation and hygiene practices of each member of the household not always held equally. For instance, women who remain in the household and care for younger and older family members are generally better informed on household sanitation and hygiene practices than men who spend the day working away.

As a result, some questions, such as those around child toilet use and infant excreta disposal practices, are best asked of those who care for children in the household. Similarly, questions about other members of the household are best asked of people who remain in the household and observe everyone's sanitation and hygiene practices.

M&E processes should also avoid stigmatisation. M&E practitioners should find safe ways to communicate with and involve people who may be excluded and marginalised, so that they are not further stigmatised or made more vulnerable to violence. M&E processes should also ensure confidentiality and respect people's right to privacy, particularly where people are at risk of stigmatisation or marginalisation. Sensitive information should not be displayed on public maps or documents, and informed consent should be obtained before the disclosure or use of any personal information.

The 2016 European General Data Protection Regulation (GDPR) means that any personal data collected must be securely and privately stored, and protected from unauthorised disclosure or use.

3.7 How should (M&E) questions be asked?

It can be difficult and expensive to mobilise resources for M&E. A mix of tools and methods is required that are feasible within the constraints of time, capacity, and resources, and tailored for use by the monitors or evaluators (e.g. translated into local languages using simple and appropriate terms).

M&E tools and methods should also be tested to make sure that the language and phrases used in survey questions and qualitative tools are easily understood, and generate valid and reliable responses. For instance, all of the household survey questions included in the JMP core questions for household surveys are tested in the field in several different countries and contexts, then extensively reviewed and refined by panels of researchers and survey experts before finally being accepted for inclusion in the list of core survey questions (JMP 2018).

For further general information on the choice, type and use of M&E indicators see Reed (2012).

Household survey question that reduces desirability bias

The Research Institute for Compassionate Economics (r.i.c.e) in India recently undertook some research on the way in which survey questions were used to measure open defecation practice in India (Vyas et al. 2019). The research contrasted the results from a household survey that asked the JMP core survey question: 'What kind of toilet facility do members of your household usually use?'[28] with the results from a survey that asked an individual question developed by r.i.c.e: 'The last time [name of household member] defecated, did [name of household member] defecate in the open or use the latrine?'

This individual question was preceded by a priming statement: 'I have seen that some people defecate in the open, and some people use the latrine. Now I want to ask about where you and your family members defecate.' The response options included 'latrine'; 'open'; and 'somewhere else'. The research postulated that, because the priming statement and the behaviour question mention both open defecation and latrine use, they are balanced between the two different behaviours and could reduce social desirability bias. The surveyor asked household members who were present during the interview about their own behaviour, and then asked the main respondent (in most cases an adult female member of the household) to report on the behaviour of family members (aged five or older) who were not present.

The two surveys included 1,215 households who were asked the individual question and 1,216 households who were asked the household question, with 94–95 per cent latrine ownership in both groups (of which around 80 per cent appeared to be in use in both groups). In response to the individual question, 32 per cent of individuals reported the practice of open defecation, compared to only 12 per cent of those asked the household question. The different question and survey approach resulted in a 20 per cent difference in the reported open defecation rate.

The r.i.c.e research paper suggests that a carefully worded individual question is likely to capture significantly more (self-reported) open defecation than a household question, and notes that questions on individuals could easily be incorporated into a typical household survey, adding only around two minutes to the survey time. The r.i.c.e individual question on open defecation is included in Table 1.1 of the M&E framework.

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28 With the following response options: flush to piped sewer system; flush to septic tank; flush to pit latrine; flush to somewhere else; flush to don't know where; ventilated improved pit latrine or biogas latrine; pit latrine with slab; pit latrine without slab or open pit; twin pit or composting toilet; dry toilet; and, no facility or uses open space or field.

3.8 Design M&E systems for use and learning

Finally, M&E systems need to be designed for use and for learning. M&E findings are of little use if they are not readily accessible and easily understood, or do not match the interests of key stakeholders (decision-makers, practitioners, and service users).

Tips for M&E for learning:[29]

- **Be strategic and prioritise:** the information provided by M&E systems should not exceed the absorptive capacity of its users, and deliberate choices need to be made about what data and what learning will contribute most to development objectives.

- **Focus on openness:** discuss M&E challenges and unexpected outcomes with partners and other stakeholders, and aim to learn from these experiences.

- **M&E should foster both learning and accountability:** make sure that M&E evidence is useful for those implementing activities, as well as holding service providers accountable to service users and governments (or other clients).

- **Encourage collaboration on M&E:** generate buy-in from key stakeholders and share findings early; align M&E systems and avoid duplication.

- **Timeliness is critical:** design and implement M&E activities to provide timely information that can inform decision-making, and influence policy and practice (during the life of the programme or services, rather than afterwards).

- **Consider using digital technologies:** digital technologies can greatly speed up and enhance data collection, processing, and reporting. But without demand for, and use of, the M&E findings, even the best systems will not result in better services or outcomes (as many failed examples attest).

- **Organise regular learning events:** be systematic about the capturing and sharing of learning, and involve service users and stakeholders in the design, implementation, and reporting processes. Regular learning events encourage predictability and confidence in M&E information, particularly peer-to-peer 'horizontal learning' activities.

M&E systems need to be progressive and flexible so that they can evolve to meet new sector needs and priorities, without exceeding the capacities and resources of the government systems responsible for rural sanitation and hygiene services. And where national systems take time to adapt and evolve, the benefits of new M&E approaches and indicators should be demonstrated through either programme or subnational systems, with these lessons then shared to advocate for change at national level.

WSSCC local partner, Centre For Behaviour Change and Communication (Gladys Abuta) meets with Public Health Officers at the Naivasha Sub County Public Health Office in Nakuru County. The team shows different styles of commodes available to the elderly and disabled. (Credit: Jason Florio)

29 USAID Learning Lab, https://usaidlearninglab.org/qrg/me-learning (accessed on 26 March 2021).

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