

Monitoring for sanitation and hygiene: An overview of experiences, issues, and challenges

Keynote paper for Topic 5 of “Monitoring Sustainable Service Delivery Symposium”, 9 to 11 April 2013, Addis Ababa, Ethiopia

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Abstract

This paper aims to give an overview of the current thinking and practices around monitoring the full spectrum of elements that make up sanitation and hygiene service delivery and use, including assessments of sustainability, service delivery and the sanitation chain, the enabling environment, equity, and behaviour.

Sanitation and hygiene are highly complex and need to be distinguished from water supply. The complexity justifies the need for thorough and sanitation-specific monitoring, to increase our understanding of why and how sanitation and hygiene services and practices increase or improve, and how to ensure sustainable change.

The paper will highlight four main trends in monitoring for sanitation and hygiene:

- 1) A shift from monitoring (infrastructure) outputs to (behavioural / quality) outcomes.
- 2) A diversification of monitoring aspects and actors, both as subjects and implementers of the monitoring.
- 3) A growing focus on monitoring sustainability and equity of outcomes and services.
- 4) A move towards systematisation and harmonisation, linking local level monitoring to national level systems.

These trends will become apparent through discussions of what gets monitored, including the sanitation and hygiene service chain, behavioural outcomes and impact, and the enabling environment; and of the process and specifics of monitoring certain aspects of sanitation and hygiene, including markets and technology, total sanitation, hygiene, and equity.

The paper highlights positive developments and progress in terms of the spread and quality of monitoring sanitation and hygiene, but also points out a number of remaining challenges. In general, the key challenges are around further identification, fine-tuning, systematisation and harmonisation of monitoring indicators, methodologies and systems that can be feasibly, affordably, and reliably implemented over time and at scale.

Keywords

monitoring, sanitation, hygiene, outcomes, sustainability, equity, harmonisation

Introduction

No sanitation and hygiene programme or policy would be complete without an inbuilt monitoring and evaluation element. But why do we monitor? As in any field, monitoring in the sanitation and hygiene sub-sector aims mainly to measure and ensure that inputs and activities lead to their intended results and outcomes; to adjust course where necessary; and to establish whether progress is being made towards a given goal.

This goal could be described in terms of the overall Millennium Development Goals (MDGs), specifically the target to halve, by 2015, the proportion of people without access to improved sanitation. As we will establish later, from this perspective monitoring is mainly numerical, infrastructure driven, and focused on household-level access.

Alternatively, the goal that the sanitation sector collectively works towards could be described as 'ensuring hygiene practices and sanitation service chains that sustain themselves, and are accessed and used by all'. This goal transcends the MDG target and arguably is closer to the goal most sector organisations have set themselves. But if this is the goal we work towards, monitoring should go much beyond the numbers and the access, to include assessments of sustainability, service delivery and the sanitation chain, equity, behaviour, and more. This paper, intended as input into the sanitation and hygiene topic stream of the "Monitoring Sustainable WASH Service Delivery Symposium" in April 2013 in Ethiopia, will attempt to give an overview of the current thinking and practices around monitoring this full spectrum of elements, and some of the complexities involved.

The paper will highlight four main trends in monitoring for sanitation and hygiene, which will become evident throughout the sections:

1. A shift from monitoring (infrastructure) outputs to (behavioural/quality) outcomes.
2. A diversification of monitoring aspects and actors, both as subjects and implementers of the monitoring.
3. A growing focus on monitoring sustainability and equity of outcomes and services.
4. A move towards systematisation and harmonisation, linking local level monitoring to national level systems.

Firstly though, why do we monitor sanitation and hygiene separately from water supply—while the W, S, and H in WASH are so inextricably linked? Despite huge efforts, it is now increasingly obvious that the sanitation related MDG will not be met by 2015, by quite some distance. There are many possible causes and reasons to explain this shortfall, mostly based on the understanding that sanitation is a 'messy, complex and complicated' field (Sparkman, 2012), where a multitude of actors operates in a scattered sector without clear institutional leadership and weak policy frameworks and capacity. Furthermore, where water supply is largely a communal service, sanitation, and hygiene are highly personal, a factor of behaviour, and mostly dealt with at a household or individual level. However, they impact on the whole community. It is exactly this complexity that further justifies the need for thorough and sanitation-specific monitoring, to increase our understanding of *why* and *how* sanitation and hygiene services and practices increase or improve, and how to ensure *sustainable* change.

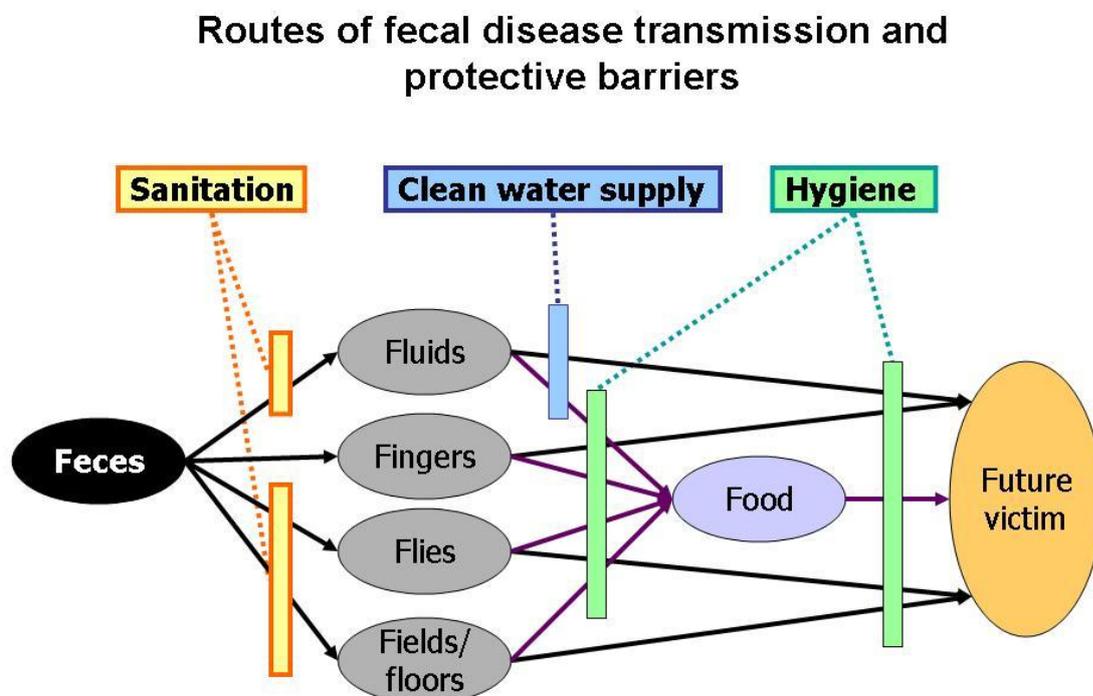
1. What to monitor?

Most sanitation monitoring has historically focused on coverage in terms of household level access and facilities constructed. The key sanitation indicator of the World Health Organization (WHO)/United Nations Children’s Fund (UNICEF) Joint Monitoring Programme for Water Supply and Sanitation (JMP) has been whether households have access to ‘improved’ sanitation—the definition of which has been a subject of contention for the sector. For one, this definition has not given much scope to portray households’ movements up the proverbial ‘sanitation ladder’, although this is something JMP has tried to address to some extent in its latest report by including data on open defecation and use of public facilities (UNICEF, WHO, 2012).

Secondly, this coverage monitoring has not historically taken into account the equity and sustainability aspects of access, such as distance to the facility; time taken to wait for use of the facility; whether it is accessible at all times of the day and for all members of the family; whether people have to pay for its use and how affordable this is; whether facilities fall out or are no longer in use, and so on (Pezon et al., 2010).

Lastly, this monitoring focuses the mind almost exclusively on monitoring of sanitation, rather than hygiene. But sanitation, i.e., safe disposal of faeces, is only one (key) element of hygiene, which includes all actions that actively break the chain of infection (see Image 1). The biggest (child) killer to be averted by hygiene promotion in developing countries is diarrhoeal disease. It is widely acknowledged that the three key hygiene behaviours with most health impact in this respect are safe disposal of faeces, handwashing with water and soap or ash, and safe household storage of water to prevent (re)contamination.

Figure 1 The F-diagram



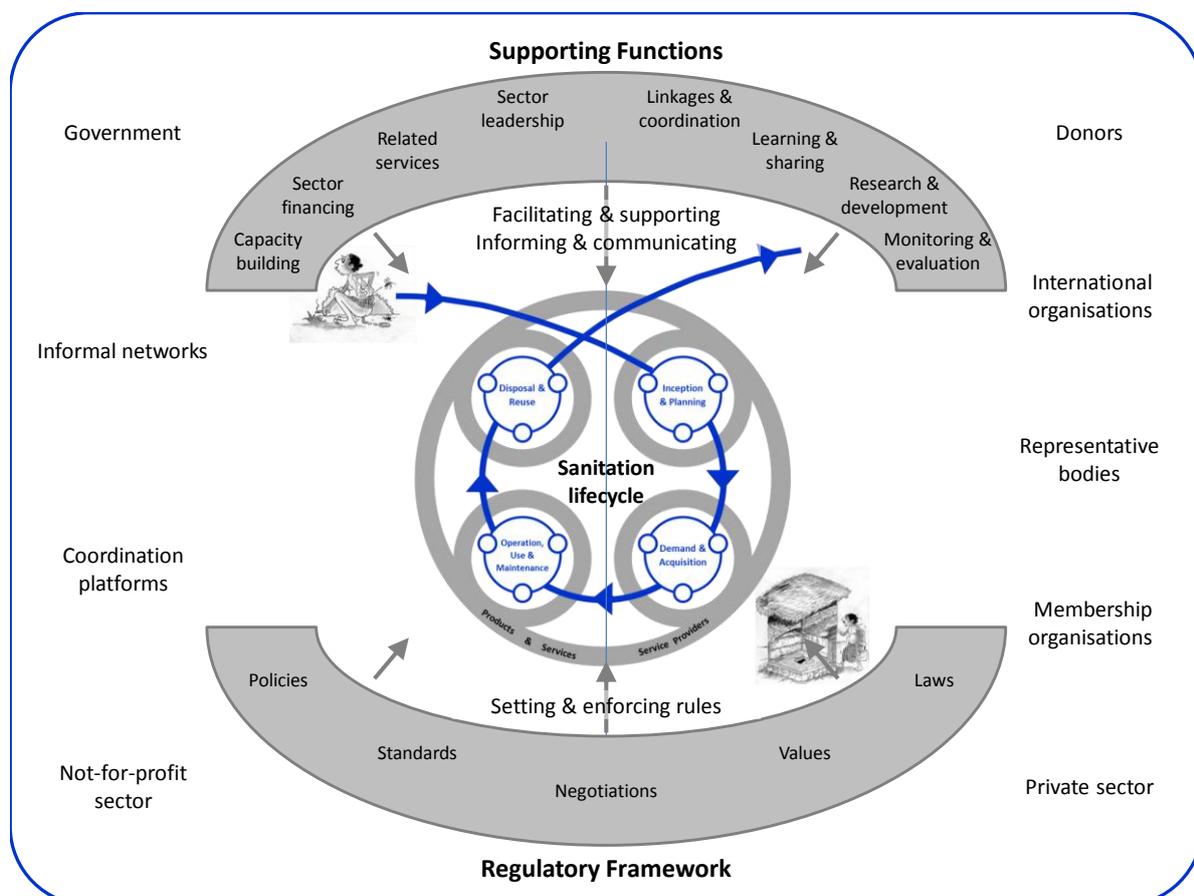
At a second tier are issues such as food hygiene, personal hygiene, and environmental hygiene. Ideally, sanitation and hygiene monitoring should focus on at least the three key behaviours, if not more. However, in practice most programmes have difficulty measuring just the sanitation aspects, let alone the remaining hygiene behaviours and practices. Reasons for this will be further discussed in section 4 on monitoring hygiene. This section on what to monitor will first take a closer look at the sanitation and hygiene service chain, behavioural outcomes and impact, and the enabling environment.

1.1 The sanitation and hygiene service chain

Whereas a snapshot in time of how many households have access to what level of service can certainly show some progress, ideally sanitation and hygiene monitoring systems should also ascertain whether *access* means *usage*, whether and how the progress is sustained, whether it affects all population groups equally, or what factors have contributed to this progress. For one, monitoring needs to focus on the entire sanitation and hygiene service chain.

Different strides are being made towards this. Sparkman, in his 2012 paper, describes a number of current approaches to sanitation monitoring by their principal focus. One approach is to focus mainly on sustainability and to assess the potential for any sanitation or hygiene practice or service to sustain itself over time, without additional external intervention apart from those providing the service in question. This involves looking at the entire sanitation chain to assess, for example, what happens when a pit fills up and who will come to empty it.

Figure 2 Regulatory framework



Taken from IRC paper on sanitation lifecycle approach, see <<http://www.irc.nl/page/72939>>

Note: work in progress.

In this respect, a useful concept that addresses the sanitation and hygiene service chain from a cost point of view, is provided by IRC International Water and Sanitation Centre’s life-cycle costs analysis and assessment methodology of proposed sanitation service levels, which takes into account both capital and operational expenditure over time, and aims to track service ‘reliability’ (Potter et al., 2011). While still a work in progress, a key accomplishment of this work has so far been to quantify what it costs to maintain a latrine for each year after its construction, therewith creating a much fairer picture of the cost of *sustainable* sanitation, beyond just building the toilet.

One key element of monitoring a *service* vs. monitoring a programme, is the need for recurrent monitoring of practices, services, and outcomes over time. But in a sector where most sanitation and hygiene interventions are still managed through programmes and projects rather than as services, systematic follow up and revisiting of outcomes over time happens too little, be it by donors, programmes, providers, or even governments themselves.

1.2 Behavioural outcomes and impact

Increasingly, sanitation and hygiene are understood to be functions of behaviour, and the key outcome of many sanitation and hygiene interventions is now defined as eliminating open defecation, and therewith changing individual and collective behaviours towards a situation where everybody uses a safe toilet and practices key hygiene behaviours, habitually. This focuses monitoring on *behavioural outcomes* of sanitation and hygiene interventions and services, over time. Such monitoring requires an improved understanding of what constitutes and impacts on (change of) behaviour. This is a complicated field and there are many different behaviour change models and frameworks (see for example Mosler, 2012 or Auger, in press), but in terms of what to monitor, one can generally identify elements that are *internal* to people, like knowledge, motivation, satisfaction and a sense of social norms, and one can identify *external* elements, such as presence of infrastructure, presence of incentives, and various environmental factors. In aid of its work on sanitation and hygiene behaviour change, WSP developed a framework that sums up these elements under Opportunity, Ability, and Motivation (WSP, 2010).

Figure 3: SANIFOAM behaviour change framework



Source: WSP, 2012

In practice, the elements that are easier to monitor, like presence of infrastructure or level of knowledge, may not tell us much about the sustainability and actual level of behaviour change. This is partly a function of the complicated nature of monitoring behaviours (versus monitoring presence of infrastructure), but also partly due to an underestimation of the complicated relationship between presence of infrastructure, knowledge of a behaviour, and the formation of habits to actually sustainably carry out that behaviour. Section 4 will further discuss the intricacies and challenges of monitoring behaviour change.

A further critical monitoring dimension is the *impact* of behavioural outcomes. Notwithstanding the need to measure impact in areas such as education, social status and overall level of development, ultimately and essentially, sanitation and hygiene are health interventions, designed to prevent transmission of diseases. But measuring the health impact of a particular hygiene promotion intervention is notoriously difficult and expensive, and there is a high risk of bias or external factors influencing the reliability of data collected through Randomised Controlled Trials and the like.

Many sector actors, practitioners, academics and sector agencies alike, now hold the view that for practitioners and government institutions running sanitation and hygiene promotion programmes or services, the focus should be on monitoring outcomes rather than impact. Programmes should measure whether their actions result in the intended behaviour change, and not attempt to measure the health impact of these behaviours.

1.3 The enabling environment

Sanitation and hygiene programmes and services do not operate in a vacuum, and there is growing realisation that the involvement of many different actors and processes taking place over time, have large impact on the success and sustainability of sanitation and hygiene service delivery attempts.

The Water and Sanitation Program (WSP) through its 2007-2010 Total Sanitation and Sanitation Marketing (TSSM) rural sanitation programme in three countries, developed a methodology to assess and monitor different elements of the enabling environment and found strong support for their hypothesis that countries with a stronger enabling environment made most progress in terms of their large-scale rural sanitation programmes (Rosensweig, Perez, and Robinson, 2012). Elements included in this assessment are:

- Policy, strategy, and direction
- Institutional arrangements
- Program methodology
- Implementation capacity
- Availability of products and services
- Financing and incentives
- Cost-effective implementation
- Monitoring and evaluation

Similarly, from 2008 onwards a group of institutions under the auspices of UN Water and led by WHO, has worked on the development of a sister-report to the JMP, the Global Annual Assessment of Sanitation and Drinking Water (GLAAS), to assess and monitor over time, issues such as government policies and institutions, investments of financial and human resources, foreign assistance, and the influence of these factors on performance (WHO, 2010, 2012). Whereas JMP measures 'outputs', GLAAS measures 'inputs'. While the number of countries participating in the GLAAS assessments is still growing and the indicators it uses are still under review, already it has started to provide policy makers at all levels with a "reliable, easily accessible, comprehensive global

analysis of the evidence to make informed decisions in sanitation and drinking-water” (GLAAS website).

This section has provided a first illustration of the key trends highlighted in this paper. Monitoring of sanitation and hygiene increasingly involves gathering information about a range of components, including access, use, behaviour, motivations, inputs, outcomes, and the enabling environment. In the next sections we will turn our attention more to the process and specific content of what is being monitored.

2. A shifting paradigm

In rough lines, over the decades sanitation and hygiene programming has moved from using supply-driven, infrastructure-focused approaches where government and support agents were the main ‘drivers’ of change, to a demand-driven, behaviour-focused approach where government and support agents facilitate communities’ own change processes and there is increasing scope for the private sector to respond to household demands. This presented a real paradigm shift, as it included changes in anything from approaches (from education to promotion; from supply to facilitation; ‘hardware’ to ‘software’; enforcement to encouragement, etc.), to roles and responsibilities of all those involved, and a more considered role for new actors such as the private sector. Alongside this paradigm shift, the monitoring methodologies and focus have had to change as well. For example, in order to understand and strengthen the various elements of the sanitation and hygiene service chain, many different actors need to be monitored, in terms of their roles and functions, the value they add, the problems they face, the support they need, the costs they incur, and so on. Currently, this is not yet common practice and it often presents interesting challenges.

2.1 Monitoring the market

For example, more than 35 countries in Africa are now implementing some form of Community-Led Total Sanitation (CLTS) (Thomas and Bevan, 2013), as are more than 15 countries in Asia. See section 3 on Total Sanitation for the specific monitoring challenges related to this. Often CLTS is combined with a sanitation marketing component, on the premise that when people’s demand for a certain service has been created or strengthened, in an ideal scenario the market will provide access to such services, therewith creating choice, competition, and providing services or infrastructure at a price level that matches the demand and households willingness to pay.

However for this to happen and for people’s access and use to change sustainably, many factors need to fall into place. Increasing understanding of these different factors requires new and different monitoring methodologies, focusing on new and different groups of actors beyond the household. Organisations such as iDE, Water & Sanitation for the Urban Poor (WSUP), Sanergy, and WaterFor People in recent years have been strengthening the local private sector and encouraging entrepreneurs to expand services to previously underserved populations. In order to monitor this type of programme, they have had to move beyond their previous household-level and end-user focus, to incorporate other assessment strategies such as business viability and enabling environment evaluations that give a more holistic view of the overall sanitation market health. See Water For People’s experience in Sparkman (2013).

2.2 Monitoring technology’s ‘soft side’

The general shift from more hardware to software focused approaches has been apparent in the development of monitoring methodologies and tools as well. Even technology-focused monitoring has been fitted with a sustainability lens, as illustrated by the recently developed WASHTech Technology Assessment Framework (TAF) which analyses WASH technologies, like certain toilet

types, along six dimensions using 18 indicators predicting potential success in introducing and then sustaining access and use of these technologies¹. This framework has underscored the importance of not only counting numbers of outputs with respect to new technologies, but also the “softer” elements of technology development such as how well it can be accepted and inserted into local markets and supply chains. Overall, it has further illustrated the range of factors that influence success and sustainability of sanitation and hygiene interventions.

2.3 Community ownership

Inevitably whichever monitoring and assessment tool is used, as part of the general paradigm shift it has now been accepted that (community and individual) ownership is one of the keys towards sustainability. It is therefore beneficial to develop and employ an inclusive and participatory approach to planning for increased ownership, of the process as well as of the outputs and outcomes, in programme and service delivery implementation as well as in monitoring & evaluation (M&E).

This includes activities that support the operation and maintenance of hygiene and sanitation facilities to facilitate individual and collective ownership and responsibility for facility maintenance; the promotion of community-based initiatives such as, for example, the creation of community and/or school sanitation and hygiene (or health) clubs, village cleaning days (arranged by community-based organisations (CBOs) or even residents themselves), community-based monitoring and evaluation, or local (market-based) cleaning businesses.

A key group of approaches built on community ownership of the *process* and with far-reaching implications for especially sanitation monitoring, is that of CLTS and its various adaptations, commonly referred to as Community Approaches to Total Sanitation (CATS). The growing need to monitor CATS and the complexities involved therein, greatly shape all four trends running through this paper.

3. Monitoring Total Sanitation

One key realisation or ‘trigger’ of CLTS is that while it is understood that use of sanitation is an individual decision, the decision whether or not to practice safe disposal of faeces has huge implications for the wider community environment, health, and wellbeing. “I am eating my neighbours’ shit!” is an often-heard realisation at successful CLTS triggering exercises. These community aspects of an individual issue have large implications for the programme and monitoring approach, as the way in which progress towards the outcome of reaching Open Defecation Free (ODF) status is tracked, becomes a key part of ensuring that outcome.

3.1 Participatory monitoring

The success of CLTS hinges on full community buy-in and motivation to change sanitation behaviours of everybody in the community, through communal triggering. Once ‘triggered’ a community will make an action plan laying out how and within what timeframe it intends to move towards becoming ODF, i.e., to ensure that everybody in the community has access to and uses a toilet, and in most definitions of ODF, also practices a number of key hygiene behaviours like washing hands with soap or ash at appropriate times (Thomas and Bevan, 2013). It then falls to the community itself (ideally with some outside support) to monitor its progress towards this goal, which often means that a sanitation committee is formed and members are mandated to monitor their fellow

¹ See for example: <<http://www.wsafrica.org/welcome/projects/washtech-burkina-faso.aspx>>

villagers. Other methods include using the children as whistle blowers (sometimes literally), or setting up a system of fines for those not adhering to the community plan and asking everybody to report such 'non-aligners' to the village chief or sanitation committee.

There have however been voices questioning the 'political correctness' of such peer pressure-based approaches to post-triggering monitoring, especially in terms of excluding or drawing attention to those not able or willing to align with the new norm. Often these are the same people who were already socially excluded, such as the elderly, the disabled, people from minority ethnic groups, or female-headed households. The counter-argument by CLTS proponents and many natural leaders, chiefs, and WASH committee members of triggered communities, is that communities that have been successfully triggered have pro-actively put in place these self-monitoring mechanisms and have done so in a participatory manner, agreed upon by all involved, and that their appropriateness can only be judged by those involved.

It is clear that monitoring methods that employ participatory approaches need careful design. If done correctly with support of well-trained facilitators, validity and objectivity of data arising from participatory monitoring approaches are achieved through a process of cross checking. In approaches such as CLTS and MPA (Methodology of Participatory Assessment), local groups quantify qualitative information with the use of rating scales, mapping and many other tools (Sijbesma, 2010). Data drawn from this process of quantification can be used to address immediate problems and to compare progress between communities, making it possible to potentially manage change better.

3.2 Verification and certification

What becomes more poignant with the spread of CLTS, is the issue of verifying or validating ODF claims, and the role played herein by local government or other institutions such as health extension services. This speaks to the need for greater systematisation and harmonisation of monitoring. Generally, as a first step, communities declare themselves ODF. This then needs to be verified and ultimately certified by an external body, ideally government, often either with state or national-level representation. However a key challenge that is appearing is that of capacity and resources to make the required field visits to verify and later on certify that each self-declared village is indeed ODF, let alone to ensure follow-up visits to verify the sustained ODF status of said community.

Especially in situations where communities' ODF status is incentivised, e.g., through awards or financial contributions, transparent and truthful recording is essential. A number of countries and organisations are working on developing different monitoring and verification mechanisms, linking internal self-monitoring to external verification systems. For example, the work done in Uganda with Plan International where local government and community structures jointly apply a three-phased monitoring system, after which monitoring data are fed up via district to national level to update a CLTS data base. This way, CLTS monitoring has fostered participation, learning and flexibility (Namwebe, 2013).

Such a joint approach averts a key risk. A key characteristic of a transparent and truthful verification system has to be its impartiality, which can be hard when the implementing agency is also the monitor. With the spread of Total Sanitation, it is becoming increasingly common for local governments to be tasked with implementing programmes to achieve ODF. In a drive to meet their targets or to access funds, these institutions may be under pressure to over-report success. Furthermore, such monitoring easily regresses to focusing just on outputs (e.g., number of toilets built), rather than on outcomes (e.g., sustained behaviour change).

National governments need to be supported to develop transparent data collection methodologies and systems that feed into central databases for use in analysis, reporting and management. Kumar and Singh describe the challenge in India's rural sanitation programme to develop an 'effective and robust monitoring system (that is) timely, cost-effective, credible and tracks relevant indicators which feedback into program implementation'. A proof of concept using mobile phones to track both sanitation outputs (toilets) and outcomes (behaviour change) was undertaken, with promising results (Kumar & Singh, 2013).

3.3 Measuring sustainable change or sustainably measuring change

The ultimate goal of any sanitation and hygiene promotion approach including CLTS and its various adaptations, is to ensure sustainable change. This requires systems and methodologies to ensure, and then monitor, that communities who have achieved ODF status remain in fact open defecation free, and ideally move on to a situation where everybody has access to and uses improved sanitation facilities and habitually practices key hygiene behaviours. Work is underway by a number of agencies to define and identify the key determinants of sustainability, as well as the various monitoring aspects of sustaining ODF (Thomas & Bevan, 2013). Some key factors mentioned include development of a consistent ODF protocol, the introduction of a time-lag between ODF reporting and certification, and "leveraging the ODF protocol to yield enhanced health outcomes over time, such as handwashing with soap and safe disposal of children's faeces which can easily be incorporated into the triggering process and which are key elements of the definition of maintaining an ODF environment".

Behaviour is not stagnant or stable, people can start adopting certain behaviours but then regress again, moving 'up and down' the ladder. A key element of measuring sustainability therefore has to be how to measure progress or change over time, but in such a way that the repeated monitoring itself does not become an interfering or biasing factor. It is a key struggle of many organisations in the sector to identify monitoring indicators and methodologies that can be feasibly and affordably implemented over time and at scale and will provide reliable data on the level and sustainability of sanitation and hygiene behaviour change of any given community, household, or individual.

4. Monitoring hygiene

Monitoring hygiene behaviours is difficult. Effective monitoring of hygiene promotion interventions and services and of hygiene practices may require different approaches from sanitation monitoring. Nevertheless, hygiene is often included in the definition of ODF status, or of Total Sanitation (Thomas & Bevan, 2013). Since CLTS and ODF monitoring are, as previously described, strongly community-driven, this implies that these communities will also monitor hygiene behaviours. It is questionable in how far such monitoring will deliver reliable data on, for example, handwashing with water and soap at critical times or safe collection and storage of water without recontamination.

Many programmes have routinely measured knowledge and exposure to health messages (by recall) as proxy indicators for practice. But as the Focus, Opportunity, Ability, Motivation (FOAM) framework in Section 1.2 already illustrated, there are many other factors besides knowledge that influence behaviour. With regards to effective programming, this points to a need for stronger formative research and qualitative monitoring to understand drivers and motivations and revisit them over time. But key challenges remain.

For example, monitoring of handwashing behaviour change generally presents challenges in terms of reliability and feasibility. To monitor practices, some projects continue to rely on self-reporting, that is, asking people to report on their own sanitation and hygiene practices, which often results in highly optimistic findings. Demonstrating this Curtis, Danquah, et al. (2009) showed that self-reports

on hand washing with soap resulted in findings that were two to three times higher than findings drawn from household observations. Household observation is a monitoring practice that examines ways by which a particular practice is carried out by household members. As household observations require for researchers or field workers to visit the study site, carrying this out is often very costly. Also, it risks bias as people may behave differently when they feel they are being observed. A third and cheaper (but more limited) approach to measuring practices makes use of indicators by conducting spot checks of physical conditions. During spot checks, several questions are addressed, including: Do toilets show signs of use? Are they clean? Are materials for hand washing organised and used? Is stored water protected?

The Public-Private Partnership on Handwashing with Soap (PPPHW) recommends that programmes use a mix of both reporting and observation, and use spot checks and proxy indicators such as whether people have knowledge of critical times to wash hands; whether they can demonstrate good handwashing with soap or ash; and (by observation) whether the handwashing station has evidence of use. Other tools such as pocket voting, where community members cast secret ballots regarding their behaviours, may also help mitigate self-reporting bias. Unfortunately, with multiple methodologies resulting in slightly different results, it remains a challenge to understand which is the most accurate result.

In general, there is a great lack of reliable data on the occurrence, effectiveness and outcomes of hygiene promotion around the world. Recently and through concerted efforts of especially UNICEF, Demographic Health Surveys (DHS) and Multiple Index Cluster Surveys (MICS) have incorporated proxy indicators around handwashing with soap or ash, which will make it possible to track progress over time and between countries. A first analysis of these new data is about to be published by UNICEF.

5. Monitoring equity

While many programmes have historically taken the household to be the ‘lowest level unit’ in terms of monitoring, it is important to go beyond this and monitor access and use with a true equity and inclusion lens, both in terms of who is *being* monitored, and who is *doing* the monitoring. This includes a focus on the here and now, in terms of unpacking who in a household, community, region or country truly has access, but it also includes monitoring of change and impact over time, as social and cultural change often takes a long time to take hold.

Equity involves “recognising that people are different and require specific support and measures to overcome the specific impediments that stand in the way of their being able to access and use services sustainably, in this case safe sanitation and hygiene practices”. For this to happen, “equity will need to be woven into the fabric of every investment, every supervision mission, every reward and every audit” (Patkar and Gosling, 2011).

Inadequate sanitation and hygiene impacts disproportionately on the poorest households and particularly on very young children, who are more exposed and more susceptible to sanitation-related health risks. Data and analysis have shown that mere concentration on covering the big numbers will only serve to increase the gap between the haves and the have-nots. But better identification of the poorest and most marginalised groups and transparent targeting of efforts and finances is impossible without proper data. What doesn’t get measured can’t get targeted (South Asian Conference on Sanitation (SACOSAN), 2012).

Monitoring for equity in sanitation and hygiene has two main prongs:

- At the local level, identifying excluded groups and assessing the barriers they face in accessing and using hygienic toilets and practicing hygienic behaviours.
- At the provincial, state and national level, developing systems with disaggregated data (by poverty quintile, by gender, by age, etc.) to target those who are hardest to reach and have the highest need, with targeted financing and with appropriate rewards and sanctions, and to track changes at all levels.

In general when looking at development, excluded groups are those that suffer from ‘asset poverty’, but also those who are shut out or disadvantaged for social reasons. Specifically in sanitation and hygiene, the groups most systematically excluded or disadvantaged are women and girls, disabled people, the elderly, those living in informal settlements or urban slums, and those living in far away, hard to reach areas. For women and girls, exclusion may mean being left out of the decision making about constructing latrines or handwashing stations; being denied access to safe toilets even where they do exist; or a lack of access to menstrual hygiene management tools and knowledge. For disabled people, exclusion may mean an inability to physically access a toilet or reach the handwashing facility.

A useful concept to monitor these different types of exclusion and vulnerability, is to take a life-cycle approach to access, use, appropriateness of certain services at different times in a persons’ life or for different groups (Patkar and Gosling, 2011).

Above all, monitoring for equity and inclusion requires involvement of the end-users, in the design of the programme as well as in the monitoring methodologies and indicators used. For example, in terms of gender, there is a need for both women and men to be involved in identifying indicators to monitor change and impact over time, and in the feedback process. This may require separate processes for the two groups, for example through separate focus group discussions or use of adapted questionnaires, or by ensuring that household observations or discussions about sensitive topics, for example on menstrual hygiene management, are carried out by female enumerators where this is more appropriate. An example of a specific monitoring methodology taking such an equity angle is the NEWAH Participatory Assessment developed in Nepal based on the Methodology for Participatory Assessment (MPA), to ensure a gender and poverty focus in their rural water and sanitation programmes (James et al., 2004).

A final positive development to note, is the JMP-led process of formulating post-2015 WASH targets and corresponding indicators to feed into the global Post 2015 process. The process has so far led to an agreement on including, in addition to targets around safe sanitation and drinking water supply, targets and indicators around handwashing with soap and around access to menstrual hygiene facilities. Inclusion of this last indicator was arguably in preference over a host of other hygiene behaviours with strong WASH linkages and similar disease transmission risks. Its inclusion points to a stronger focus on equity in the sector, and a renewed understanding that equity needs to be the lens through which sector progress is assessed. To this end, equity is proposed as a key concept in the process of formulating the proposed post 2015 WASH targets and corresponding indicators. So far agreement has been reached to include targets and indicators to systematically measure progressive reduction in inequalities over time².

² WHO and UNICEF JMP: Proposal for consolidated drinking water, sanitation and hygiene targets, indicators, and definitions, December 2012. See <<http://www.wssinfo.org/post-2015-monitoring/overview/>>

6. Harmonisation of monitoring systems and data

National government agencies, UN agencies, donors, NGOs, and service providers may all be using different methodologies and approaches to data collection and analysis, different definitions and indicators, or different data sources to monitor progress in terms of sanitation and hygiene. This has caused discrepancies between, for example, national government data and JMP data and been a source of much confusion and frustration. According to the 2010 JMP report the main cause of this is institutional fragmentation (UNICEF,WHO, 2010). Lack of coordination can result in the duplication of efforts or contradictions between figures produced by different national agencies. This in turn affects the reliability of global estimates that are themselves based on national surveys and censuses (SACOSAN, 2012).

6.1 The global level

Harmonisation of monitoring systems and data requires coordination and agreement both at the global level and within countries. At the global level, JMP itself has taken a lead role in coordinating various collaborative processes intended to lead to more harmonised systems, definitions and indicators, supported by regional processes towards effective performance monitoring of sanitation and hygiene such as that proposed by the Inter-Country Working Group (ICWG) of the South Asian Conference on Sanitation (SACOSAN); and by the global process around the formulation of post-2015 targets and indicators.

6.2 The national level

At the national level, harmonisation means alignment between community, project or local level monitoring systems and national systems for data processing, analysis and reporting, in order to ensure oversight, facilitate comparison and ensure good planning, targeting and financing. This also includes a clear division of roles and responsibilities and a balanced approach to data collection, analysis and reporting, to avoid incessant monitoring and reporting pressure impeding actual implementation and progress.

Different countries are making strides towards this through government-led collaboration between ministries, national statistics bureaus, UN agencies, international and national NGOs, academic institutions and so on, and some of these experiences have already been described above (e.g., Namwebe, 2013). Another example is the work currently on-going in Tanzania, where the government in collaboration with sector partners such as UNICEF, WSP, and the Global Sanitation Fund (GSF) is developing a harmonised national monitoring and data management system. In Burkina Faso, attempts to merge government and NGO initiatives to monitor sanitation facilities in terms of cost and coverage have been on-going on the back of IRC International Water and Sanitation Centre's (IRC) WASHCost project and the government's own development of a monitoring dashboard.

In an international GSF learning event of the Water Supply and Sanitation Collaborative Council (WSSCC) in September 2012, participants from implementing agencies, sub-grantees, government and support agencies recommended a number of ways in which large-scale sanitation and hygiene programmes such as those funded by the GSF, UNICEF or bilateral donors, could support national M&E. It was agreed that ultimately the aim should be to create harmonised national M&E frameworks and indicators so that all programmes and local governments would use and feed into the same monitoring database. In the mean time, it was suggested among others that:

- ✓ Programmes should review their programme indicators based on the national M&E strategy and locally defined indicators.

- ✓ Programmes should consider including in their programme plans, support to national government in the development and management of data base systems, at the national and local levels.
- ✓ Programmes should support government M&E systems to better incorporate and capture data on behaviour change.
- ✓ Programme M&E plans should include a clarification of roles to pinpoint key areas where the different players, government and non-governmental, can rely on each other's work and competencies.
- ✓ More training or presentation materials should be provided to create a uniform understanding between all those involved in monitoring, from collection to compilation to analysis.
- ✓ Programmes could add value to the sector and national M&E systems by increasing the understanding of factors that support usage and maintenance of latrines, and develop appropriate indicators to monitor these factors.

In summary

Having attempted to provide an overview of current thinking, practices and challenges in monitoring sanitation and hygiene, this section will briefly summarise the key trends, and formulate some key challenges to take forward.

These challenges require further attention, research and concerted action by sector actors in order to further strengthen the effectiveness, feasibility, and value of monitoring in sanitation and hygiene. It is hoped that the “Monitoring Sustainable WASH Service Delivery Symposium” will be a starting point for further discussion and tackling of some of these challenges.

1. Shift from monitoring (infrastructure) outputs to (behavioural/quality) outcomes

In keeping with a sector paradigm shift and a growing appreciation of the importance of behaviour change, the focus of monitoring is shifting more and more away from counting numbers and focusing on infrastructure, towards monitoring the outcomes of interventions in terms of access and use, and lasting behaviour change.

Monitoring behaviour (change) presents a number of challenges related to its complicated nature—combining infrastructure, knowledge, motivation, behaviour, habit formation. and more. When measuring complex behaviour change processes such as handwashing with soap or habitual use of toilets, programmes should combine a mix of monitoring methodologies and processes, such as self-reporting, observation, spot checks and proxy indicators in order to obtain accurate information. On-going developments in ICT applications for monitoring may provide assistance in this respect.

Overall, the key challenge remains finding feasible, affordable and reliable methodologies and systems to monitor qualitative and quantitative aspects of behavioural outcomes at scale.

2. A diversification of monitoring aspects and actors, both as subjects and implementers of the monitoring.

Both the desire to monitor the entire service delivery chain as well as the strong sector focus on Total Sanitation have influenced the content of what gets monitored, the actors being monitored, and the way different actors engage in the monitoring itself:

- The way in which progress towards the outcome of reaching Open Defecation Free (ODF) status is tracked in CLTS and CATS, is a key part of ensuring that outcome. Participatory

monitoring is key in catalysing and sustaining change, not only in CLTS type approaches, but in other sanitation and hygiene development strategies as well.

- Sanitation marketing has added a new dimension to monitoring, requiring it to focus on issues such as business viability, consumer sentiment, as well as the broader enabling environment.
- A growing understanding of the positive impact of an enabling political, institutional, and social environment on the success of sanitation and hygiene interventions has spawned a number of approaches assessing and monitoring various elements of this enabling environment.

Challenges remain around further development and adoption of methodologies to monitor the different aspects and actors; around building widespread capacity to perform quality monitoring; and developing systems to both display and ensure the linkages between the various actors and elements of the service chain.

3. A growing focus on monitoring sustainability and equity of outcomes and services

In light of the widely sought-after goal of ensuring hygiene practices and sanitation service chains that sustain themselves and are accessed and used by all, sustainability and equity are key considerations for monitoring.

This includes efforts to measure the cost-effectiveness and the self-sustaining capacity of the sanitation service chain, efforts to monitor sustainability of ODF and other hygiene behaviours, and efforts to measure acceptability, accessibility, affordability, and safety of services for all different people at all different stages of life.

Systematic application of an equity lens to service delivery, programme implementation and monitoring is a long way off. There is a tremendous need for better identification of the poorest and most marginalised groups and for transparent targeting and measuring of efforts and finances.

Furthermore, there is a need for systematic follow-up and revisiting of outcomes, change and impact over the years, both to ensure sustainability and equity and inclusion, as social and cultural change often takes a long time to take hold. Donors, governments and support agents need to plan and budget for systematic long-term follow-up and revisiting, but this is rarely done.

A huge challenge remains. Despite large commitments, policies, and strategies on Total Sanitation, governments still lack the capacity and resources to ensure sufficient follow-up to achieve, verify, validate and maintain ODF, and move onwards to self-sustaining demand and service delivery for all. It is a key struggle to identify monitoring indicators and methodologies that can be feasibly, affordably and reliably implemented over time and at scale and will provide accurate data on the level and quality of access to services and hygienic behaviours of any given community, household or individual.

4. A move towards systematisation and harmonisation, linking local level monitoring to national level systems.

There is a growing recognition of the need for more harmonised M&E systems, globally and nationally. And, global processes like the JMP-led process towards development of WASH specific indicators to feed into the post-2015 target setting process, can be very helpful.

But national government agencies, UN agencies, donors, NGOs, and service providers still too often use different methodologies and approaches to data collection and analysis, different definitions and indicators, or different data sources to monitor progress in terms of sanitation and hygiene. The incentives to consolidate and harmonise are not yet recognised strongly enough.

Furthermore, large data gaps still exist on sanitation and hygiene promotion effectiveness, on practice and behaviour, on inclusion and need, service delivery models and costs, to name but a few.

More emphasis within the sector should be placed on the importance of monitoring sanitation and hygiene, the sharing of best practices, collaboration to avoid duplication, and the demonstration of the usefulness of monitoring results with respect to achieving and sustaining beneficial outcomes, for all.

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Annex A: Summary program for Theme 5 Monitoring for sanitation and hygiene

Session 1

Setting the scene: Sanitation & hygiene monitoring

Tuesday, 9 April

14:00 -15:30

1. Keynote: Monitoring for sanitation and hygiene: An overview of trends and challenges - Carolien van der Voorden, WSSCC
2. Monitoring national WASH policies and sector reform for a sustainable large scale rural sanitation program - Eduardo Perez, WSP
3. Monitoring CLTS across Africa: Experiences from Plan's Pan-Africa Programme - Amsalu Negussie, Plan International

Session 2

Monitoring for sustainable open defecation free status

Tuesday, 9 April

16:00 -17:30

1. Developing and monitoring protocol for the elimination of open defecation in Sub-Saharan Africa – Ann Thomas, UNICEF
2. Natural leaders energising change in villages to attain and sustain open defecation free status : A case study of plan Malawi impact areas – Mulanje and Lilongwe districts (traditional authorities Juma and Njewa) - Daniel Kapatuka, Plan Malawi
3. Extension agent reorganisation into a 'Block' system for CLTS implementation and monitoring in Salima and Zomba Districts, Malawi – Ashley Meek, Engineers without borders
The role of local government and community structures in community-led total sanitation (CLTS) monitoring - Mary Namwebe, Plan International

Session 3

Financial monitoring to assess the cost-effectiveness of sanitation and hygiene interventions

Wednesday, 10 April

11:00 -12:30

1. Hygiene cost effectiveness analysis: The methodology and application in Mozambique - Alana Potter, IRC
2. Results from the hygiene cost effectiveness application in Burkina Faso - Juste Nansi, IRC
3. Results from the hygiene cost effectiveness application in Ghana - Kwabena Nyarko, Kwame Nkrumah University of Science and Technology

Session 4**Monitoring behaviour-change outcomes for sanitation & hygiene at scale and for all****Wednesday, 10 April****14:00 – 15:30**

1. Equity and Inclusion in sanitation and hygiene: Applying an equity lens to monitoring - Archana Patkar, WSSCC
2. Participatory performance monitoring of sanitation and hygiene services at scale in Bangladesh - Mahjabeen Ahmed
3. You manage what you measure: Using a mobile to web MIS to strengthen outcome monitoring in rural sanitation - Ajith Kumar, WSP

Session 5**Markets, technology, and toolkits: Viability and sustainability****Wednesday, 10 April****16:00 – 17:30**

1. From beneficiaries to businesses: Monitoring for sustainability in market-based approaches to sanitation - David Sparkman, Water For People
2. Using the Technology Applicability Framework (TAF) tool for Urine Dry Diverting Toilet (UDDT); technology evaluation and recommendations for sustainability in Burkina Faso - Yacouba Coulibaly, WSA
3. Toolkit for monitoring and evaluating household water treatment and safe storage programmes - Ryan Rowe, UNC

Session 6**Monitoring handwashing behaviour change****Thursday, 11 April****11:00 – 12:30**

Various partners of the Public-Private Partnership on Handwashing with Soap (PPPHW) come together in an expert panel to discuss key issues and challenges related to monitoring handwashing behaviour change:

- Orlando Hernandez, FHI360
- Jelena Vujcic, Buffalo University
- Ann Thomas, UNICEF