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A Review of Measures and Indicators for *Gender in WASH*

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Acronyms and Abbreviations

ARISE	Agency, Resources, and Institutional Structures for Sanitation-related Empowerment
DHS	Demographic and Health Surveys
EAS	Equitable Access Scorecard
GBV	Gender-based violence
GLAAS	Global Analysis and Assessment of Sanitation and Drinking-Water
JMP	Joint Monitoring Programme
MICS	Multiple Indicator Cluster Surveys
PMA	Performance Monitoring for Action
SDG	Sustainable Development Goal
UN	United Nations
UNICEF	United Nations Children’s Fund
WASH	Water, sanitation, and hygiene
WHO	World Health Organization

Background

The 2030 Agenda for Sustainable Development was established in 2015 to stimulate action across 17 Goals to enable sustainable economic, social, and environmental development. The Agenda prioritizes the need to achieve gender equality and the empowerment of all women and girls across all goals and associated targets.

Sustainable Development Goal (SDG) 6 aims to ‘Ensure availability and sustainable management of water and sanitation for all’, and Target 6.2 specifically calls for the need to be ‘paying special attention to the needs of women and girls’ in relation to sanitation and hygiene.¹

Across all associated Goal 6 targets, there is a need for measures and strategies to assess gender. The WHO/UNICEF Joint Monitoring Programme for Water Supply, Sanitation, and Hygiene (JMP) team is committed to improving how gender is monitored for targets 6.1 and 6.2 on drinking water and sanitation specifically. Both WHO and UNICEF are furthermore committed to ensuring cooperation and capacity-building in water, sanitation, and hygiene (WASH) (target 6.a), as well as supporting and strengthening the participation of local communities in improving water and sanitation management (target 6.b). These “means of implementation” targets and their monitoring can also be examined through a gender lens.

To this end, Emory University conducted a review of opportunities for enhanced monitoring of gender in relation to the SDG WASH targets (6.1, 6.2, 6.a, and 6.b) between June 2020 and June 2021.

The aims of the review were to:

1. Identify relevant dimensions of gender equality related to WASH;
2. Identify existing and potential data sources and tools for monitoring identified dimensions; and
3. Assess identified data sources and tools along dimensions to:
 - a. Identify critical gaps in existing data sources and measurement;
 - b. Identify opportunities to leverage existing data to increase the gender focus of ongoing monitoring efforts; and
 - c. Identify opportunities and approaches to collect new data to fill gaps and needs specific to gender.

Approach

The team used a phased approach to meet the stated aims in succession, with each phase building off those previously completed (See Figure 1).

Phase 1: Identification of relevant dimensions of gender equality related to WASH.

Based on an extensive review of literature describing the interplay between gender and WASH and foundational guidance documents on gender and equality from United Nations (UN) agencies,²⁻⁹ practitioners,^{10,11} donors,¹² and scholars,¹³⁻²⁰ we developed a conceptual framework for gender equality in and from WASH. The framework represents just one way of framing gender equality issues in WASH and primarily serves to guide the subsequent phases of this review (See Figure 2).

The conceptual framework was reviewed externally by experts in gender and/or WASH to confirm the dimensions of the conceptual framework and their relationships were valid. Feedback was incorporated to strengthen the conceptual framework and supporting text.

Phase 2: Identification of existing and potential data sources and tools for gender monitoring.

We conducted a search for tools and guidance documents that contained measures or indicators for assessing gender in WASH.

Phase 3: Assessment of identified data sources and tools.

We coded and sorted measures, items, and indicators from collated tools and guidance documents by dimension of the conceptual framework. For each dimension, relevant measures, items, and indicators were grouped by theme and then sorted by level of data collection (e.g. national vs. sub-national). Grouping and sorting allowed for identification of measurement gaps (3a) and opportunities (3b). Specifically, we identified a gap when dimension themes or sub-themes had limited or no measures available. We noted opportunities when we identified national-level data that was not yet leveraged for monitoring or reporting gender in WASH. The team produced briefs for each dimension that present the thematic groupings and the gaps and opportunities identified.

To strengthen the initial assessment, we held a succession of three, two-hour, virtual expert group meetings to share and discuss preliminary findings. Each meeting focused on a limited number of dimensions from the conceptual framework. We shared relevant dimension briefs a week prior to virtual meetings for expert review. Meetings introduced the aims of the gender and WASH review then separated participants into small groups to each discuss a single dimension and its supporting brief. We asked participants to identify missing dimension themes and tools, and to review and critique the gaps and opportunities initially identified. We also asked participants to share known opportunities to collect new data to fill gaps identified (3c).

Finally, to further synthesize findings, we collapsed information from the tables in the briefs into ‘traffic light’ tables to visually demonstrate which themes have measures available by WASH focal area: Water, Sanitation, Hygiene, Menstruation, or ‘General’ WASH. Cells corresponding to a dimension or theme were coded as follows: green indicates at least one theme (dimension-level) or sub-theme (theme-level) is measured by a national-level tool and at least one is measured by a sub-national-level tool; yellow indicates at least one theme (dimension-level) or sub-theme (theme-level) is measured by a national-level tool, but no sub-national tools; orange indicates at least one theme (dimension-level) or sub-theme (theme-level) is measured by a sub-national-level tool but no national-level tools; and red indicates that no tools exist to measure any themes (dimension-level) or sub-themes (theme-level).

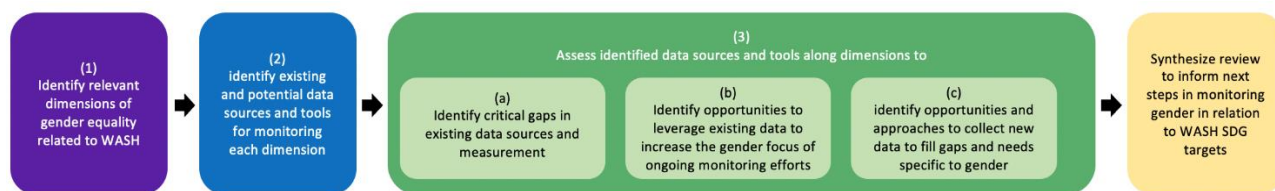


Figure 1: Phased Approach for Review of Measures and Indicators for Gender in WASH

Key Findings

Conceptual framework of dimensions of gender equality related to WASH

Grounded in the WHO (2011) definitions of gender equality, the conceptual framework includes four interrelated domains: *Ability to Meet Water, Sanitation, and Hygiene (WASH) Needs*; *Ability to Exercise Agency*; *Access to Resources*; and *the Multi-Level Enabling Environment* (See Figure 2).²¹

The conceptual framework shows the dynamic, reciprocal relationships between equal access to resources, agency, and the ability to meet basic needs, as well as how these elements operate within the broader enabling environment. To be able to meet their basic needs related to WASH, individuals must have access to a suite of WASH-related resources and the agency to exercise choice. In turn, women and girls’ ability to meet their needs influences their ability to equitably access resources and exercise their agency.

Further, the conceptual framework demonstrates that access to resources, ability to exercise agency, and ability to meet WASH needs can influence and be influence by WASH-related empowerment.

Finally, the enabling environment, which includes the social context, political context, economic context, and physical environment can influence each dimension and their relationships.

This framework draws from and is intended to complement more comprehensive and process-focused empowerment work. The domains included in this framework are considered necessary but insufficient preconditions for progress toward women’s WASH-related empowerment. Definitions for each dimension, initially drafted upon creation of the framework and later adapted based on expert feedback, are provided in Table 1.

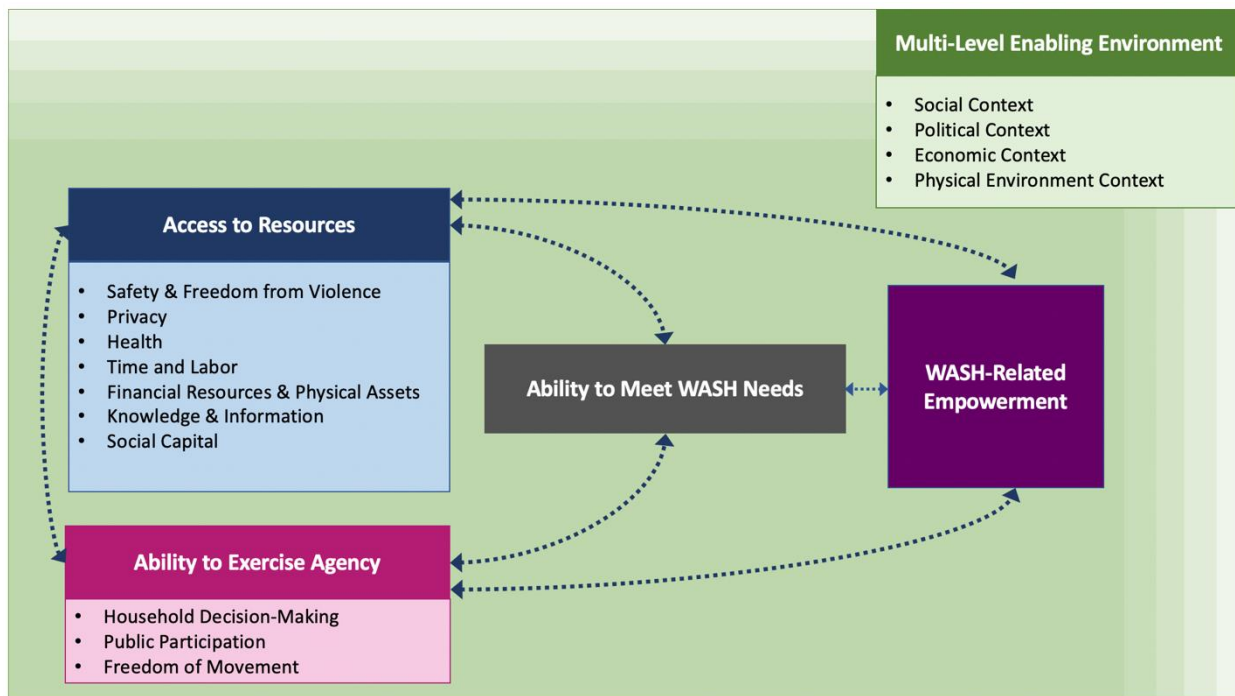


Figure 2: Conceptual Framework of dimensions of gender equality related to WASH.

Table 1: Definitions of Dimension in the Conceptual Framework by Domain	
Domain/Dimension	Definition
Ability to Meet WASH Needs	
Ability to meet WASH Needs	<i>Refers to women and men, boys and girls, and sexual and gender minorities experiencing equity of access to water, sanitation, and hygiene facilities, with their different needs and vulnerabilities accounted for and addressed.</i>
Access to Resources	
Safety & Freedom from Violence	<i>Freedom from interpersonal and gender-based violence, including women's freedom from both violent acts and threats of violence (both physical and sexual), coercion, harassment, or force when accessing and using sanitation and hygiene locations or water collection points</i>
Privacy	<i>An individual's ability to feel free from observation or being heard or disturbed by others¹ when accessing and utilizing sanitation locations and water sources, including for hygiene (e.g. menstruation, bathing) purposes.</i>
Health	<i>Includes physical, mental, and social well-being as they affect and are affected by WASH options and conditions. Health can be viewed as both an outcome of WASH, such as illness linked to unsafe water consumption, and as a resource for accessing WASH, such as the physical ability to walk to water points or sanitation facilities.</i>
Time & Labor	<i>Individuals' time and labor - paid or unpaid - spent on WASH-related tasks and activities and meeting their own WASH-related needs, as well as satisfaction with and control over the time and labor spent.</i>
Financial Resources & Physical Assets	<i>Individuals' control over economic resources and long-term stocks of value, such as land, for the purposes of meeting individual and household WASH needs.</i>
Knowledge & Information	<i>Individuals' knowledge and access to information related to water, sanitation, and hygiene, including WASH improvements and maintenance.</i>
Social Capital	<i>Individuals' membership in trusting and cooperative social networks that provide tangible (i.e., economic/material) and intangible (i.e., emotional and instrumental) support. This includes relationships or social ties with individuals or groups that help individuals access water, sanitation, and hygiene and complete WASH-related tasks and activities.</i>
Ability to Exercise Agency	
Household Decision-Making	<i>Individuals' opportunities to influence and make decisions about water, sanitation, and hygiene within their homes</i>
Public Participation	<i>Individuals' ability to participate in WASH-related public activities, including influencing decisions at a public level, participating in committees, assuming both formal (e.g. elected) and informal (e.g. positions of influence) leadership positions, and participating in WASH-related income-generating activities (IGAs), and the impact of WASH conditions and responsibilities on individuals' abilities to participate in public life.</i>
Freedom of Movement	<i>Individuals' autonomy to move freely both to access water, sanitation, and hygiene facilities, including accessing resources to meet menstrual needs, and without hindrance as a result of limited WASH access.</i>
Multi-level Enabling Environment	
Social Context	<i>Relationships, interactions, and inter-group dynamics and social rules (including social inclusion, social cohesion, social norms, and community solidarity) that may impact access to WASH.</i>
Political Context	<i>Legal structures, including laws and policies, budgets, and local leadership that can influence the realization of individuals' WASH-related rights and access.</i>
Economic Context	<i>Inclusive of both physical market places and market systems, an enabling environment in which individuals can access the goods and services that they need for WASH, as well as participate for economic benefit.</i>
Environmental Context	<i>The context in which individuals move and operate, which can be enabling in that it can provide individuals with safe, accessible conditions, or can pose a barrier to individuals' WASH access.</i>

Table 1: Definitions of Dimension in the Conceptual Framework by Domain

Identification of data sources and tools for gender monitoring

Seventy-four documents were identified and reviewed, with 50 included and coded: twelve are tools for national-level data collection; 32 for sub-national-level (including research and program) data collection; five are guidance documents; and one is aimed at governments and utilities (See Appendix 1:).

Assessment of measures and indicators from identified data sources and tools

Briefs were created to represent each of the 15 dimensions identified across the four domains of the conceptual framework. Each brief begins with a summary of key findings, followed by a table that includes identified measures related to that dimension, and concludes with key take-home messages, proposed opportunities for leveraging existing data and enhancing both small- and large-scale monitoring, and relevant considerations. The table in each dimension brief presents the identified measures or indicators by themes and sub-themes, noting also the data collection level (national, sub-national) and providing notes about the measures identified by tool. All briefs are in Appendix 2: [Ability to Meet WASH Needs](#) and provide a more comprehensive assessment than the summary provided below.

Table 2: Measures Available to Assess Each of the Identified Dimensions					
Dimension & Themes	Water	Sanitation	Menstrual Health & Hygiene	General Hygiene	General/ Other WASH
Ability to Meet WASH Needs					
Ability to Meet WASH Needs					N/A
Access to Resources					
Safety & Freedom from Violence					
Privacy					N/A
Health					N/A
Time & Labor					
Financial Resources & Physical Assets					
Knowledge & Information					
Social Capital					
Ability to Exercise Agency					
Household Decision-Making					
Public Participation					
Freedom of Movement					
Enabling Environment					
Social Context					
Political Context					
Economic Context					
Physical Environment Context					N/A
<p>Green: At least one dimension theme is measured by a national-level tool AND at least one is measured by a sub-national-level tool.</p> <p>Yellow: At least one dimension theme is measured by a national-level tool, but no sub-national-level tools measure the dimension.</p> <p>Orange: At least one dimension theme is measured by a sub-national-level tool, but no national-level tools measure the dimension.</p> <p>Red: No tools identified at any level to measure the dimension.</p>					

N/A: The given dimension does not include any themes (according to the conceptual framework) that are specific to the given WASH topic.

Table 2: Measures Available to Assess Each of the Identified Dimensions

As Table 2 illustrates, measures at the national or sub-national level exist for almost all of the identified dimensions and across all focal topic areas: water, sanitation, menstruation, and general hygiene. However, while measures from tools that collect data at the national level do exist in all domains, representation is scant, particularly in the ‘Ability to Exercise Agency’ domain. In addition, the topic area ‘General Hygiene,’ which includes bathing and handwashing, has the fewest measures from tools collecting data at the national level. However, there may be opportunities to adapt and test measures from tools collecting data at programmatic or sub-national levels to collect data at the national level. It is critical to consider which specific dimensions should be prioritized for adaptation and testing.

The sections that follow provide an abridged overview of key findings summarized from the dimension briefs by domain, including a summary of which dimensions and themes have measures, which do not, and notable opportunities to leverage existing or collect new data.

Ability to Meet WASH Needs

The *Ability to Meet WASH Needs* domain consists of just one dimension with six themes (see Table 3). Most nationally-representative items that assess the *Ability to Meet WASH Needs* dimension focus on the type, location, and distance of WASH facilities used (See Table 2). Other themes under this dimension include more measures at the national level for menstruation than any other topic area. Items that go beyond the presence of WASH infrastructure and attempt to measure accessibility, satisfaction, or female-friendly design are found in sub-national tools.

Critical gaps in measurement exist in the *Ability to Meet WASH Needs* domain, particularly related to general hygiene and satisfaction with WASH facilities. Specifically, there is no item to assess if households have access to a place for bathing at the national level, a need for all with specific implications for women related to privacy and safety²². An item to assess presence of a bathing location has been used at the sub-national level, and an association has been demonstrated between ownership of a household bathing location and women’s well-being, highlighting the importance of a bathing space not only for hygiene practice, but also for health.²³ Furthermore, we found no items at either the national or sub-national levels that assess the physical design and female-friendly design of hygiene locations for non-menstruation purposes. Finally, while items exist at the sub-national level to assess satisfaction with WASH facilities, no such items exist at the national level.

Importantly, the national-level Demographic and Health Surveys (DHS)²⁴ and Multiple Indicator Cluster Surveys (MICS)²⁵ tools capture household-level data and are not specific to an individual’s ability to meet needs, which may vary based on age, physical ability, health concerns, sex, and other characteristics. National-level surveys do not currently capture individual demographics in a way that enables understanding of if and how ability to meet WASH needs varies according to sex and gender, or by intersectional characteristics such as life stage, pregnancy, sexual identity, disability, or housing status (among others), all of which may present additional needs, barriers, or opportunities. While the surveys that capture WASH data may not be amenable to shifting from capturing household- to additional individual-level data, other tools—like the WHO Model Disability Survey or Disability Assessment Schedule,²⁶ for example, which measure prevalence of physical disabilities—could be analyzed in conjunction with existing data to determine if the WASH resources in an area sufficiently serve its varied populations.

Opportunities exist for leveraging existing national-level WASH data to further assess if needs are met. Specifically, while water is needed for all who menstruate, more water is needed for those who wash and re-use menstrual materials. DHS and MICS data can be leveraged to assess the proportion of women using reusable materials who do and do not have access to water at their household. Additional analyses can assess those who require more than 30 minutes to access water, identifying those who require the greatest work and time to meet their needs, and, potentially, those at greatest risk of not having their needs met during menstruation due to water access.

Items from sub-national-level tools have already been developed to determine the presence of bathing facilities and perceived satisfaction with WASH facilities. These tools can be further tested in diverse locations (See Appendix 1:), and – if valid and reliable – added to national-level surveys like DHS, MICS, and Performance Monitoring for Action (PMA).²⁷

Table 3: Measures to Assess Ability to Meet WASH Needs					
Dimension & Themes	Water	Sanitation	Menstrual Health & Hygiene	General Hygiene	General/ Other WASH
Ability to Meet WASH Needs					N/A
Type, location, and distance of WASH facility used					N/A
Availability of locations that meet specific WASH needs					N/A
Physical accessibility and female-friendly design of WASH location					N/A
Ability to access WASH materials/resources as needed					N/A
Perceived quality and/or satisfaction with WASH location/materials					N/A
Hygiene practices	N/A	N/A			N/A
Key Green: At least one theme is measured by a national-level tool AND at least one is measured by a sub-national-level tool. Yellow: At least one theme is measured by a national-level tool, but no sub-national-level tools measure the dimension. Orange: At least one theme is measured by a sub-national-level tool, but no national-level tools measure the dimension. Red: No tools identified at any level to measure the theme. N/A: The given theme does not include any sub-themes (according to the conceptual framework) that are specific to the given WASH topic.					

Table 3: Measures to Assess Ability to Meet WASH Needs

Access to Resources

The *Access to Resources* domain includes seven dimensions, each with numerous themes (Table 4Table 5Table 6Table 7). Each dimension is described in individual briefs (See Appendices 3-9). Of the seven dimensions, only four have any themes that have national-level measures: *Safety & Freedom from Violence* (for menstruation only); *Privacy* (for sanitation and menstruation); *Time & Labor* (for water and menstruation); and *Financial Resources & Physical Assets* (for water and menstruation). No national-level measures were identified to assess any themes in *Health, Knowledge & Information, or Social Capital*. There were no national-level items identified for any of the dimensions or themes in the *Access to Resources* domain that focused specifically on general hygiene, such as body or hand hygiene.

Table 4: Measures to Assess the *Safety & Freedom from Violence* and *Privacy* Dimensions in the *Access to Resources* Domain

Dimension & Themes	Water	Sanitation	Menstrual Health & Hygiene	General Hygiene	General/ Other WASH
Safety & Freedom from Violence					
Perception of safety (i.e., feeling safe/fear when engaging in various WASH activities)	1	1			2
Perceived risk of physical/sexual/verbal abuse in the home or from one's family					3
Experiences of physical/sexual/verbal abuse in the home or from one's family					4
Experiences of physical/ sexual/verbal abuse at WASH facilities/ locations	1	1			N/A
Safety features of the physical environment / WASH infrastructure					N/A
Knowledge of how to report safety concerns	N/A	N/A	N/A	N/A	5
Sexual exploitation related to WASH	N/A	N/A	N/A	N/A	6
Privacy					N/A
Privacy to meet WASH needs					N/A
Impacts of lack of privacy	N/A				N/A
<p>Green: At least one theme is measured by a national-level tool AND at least one is measured by a sub-national-level tool. Yellow: At least one theme is measured by a national-level tool, but no sub-national-level tools measure the dimension. Orange: At least one theme is measured by a sub-national-level tool, but no national-level tools measure the dimension. Red: No tools identified at any level to measure the theme. N/A: The given theme does not include any sub-themes (according to the conceptual framework) that are specific to the given WASH topic.</p> <ol style="list-style-type: none"> 1. No direct measure but potential proxy via analysis of DHS, MICS items 2. Perceived safety when going to, speaking up in a WASH meeting 3. Perceived risk of GBV from family/household members related to WASH responsibilities/norms and participation in WASH committees/meetings/events 4. Experiences of GBV from family/household members related to WASH responsibilities/norms and participation in WASH committees/meetings/events 5. Awareness of existing mechanisms for reporting; Comfort with using reporting mechanisms, including belief in being listened to and lack of fear of reprisal 6. Experience of sexual exploitation related to WASH 					

Table 4: Measures to Assess the *Safety & Freedom from Violence* and *Privacy* Dimensions in the *Access to Resources* Domain

Within the *Safety & Freedom from Violence* dimension, seven themes were identified and a national-level measure was identified for only two of those themes, both related to menstruation: ‘perception of safety when engaging in various WASH activities’ and ‘safety features of the physical environment / WASH infrastructure’ (See Table 4 and Appendix 3: [Access to Resources: Safety and Freedom from Violence](#)) Most items identified are used for data collection at the sub-national level (for programs, projects, research). Among these, measures of safety (whether perceived or actual) tend to focus on safety while accessing WASH facilities/locations and largely overlook violence related to WASH responsibilities and norms or violence related to participation in WASH committees/meetings/events. No items were identified nationally or sub-nationally that capture safety pertaining to non-menstrual hygiene. However, the national-level PMA2020 item used for assessing menstruation-related safety could be tested for use by the DHS or MICS, particularly for countries beyond those included in the PMA’s scope. Further, the item could also be adapted and tested to assess safety related to water, sanitation, and other hygiene behaviors.

Within the *Privacy* dimension, two themes were identified; national-level measures were identified for only one of those themes (‘privacy to meet WASH needs’), specifically related to sanitation and menstruation (Table 4, Appendix 4: [Access to Resources: Privacy](#)). No national-level measures were identified for the theme ‘impacts of lack of privacy’ for which a sub-national measure was only identified for sanitation. Better measurement of privacy could provide data that is also relevant to other dimensions, including *Safety & Freedom from Violence* and *Ability to Meet WASH Needs*.

Within the *Health* dimension, eight themes were identified; no national-level measures were identified for any of the themes (Table 5, Appendix 5). Most sub-national tools focus on water, sanitation, and menstruation, particularly as they contribute to injury or mental health. Items assessing general hygiene and health are the most limited. Importantly, it is difficult to directly monitor the impact of WASH on health rather than the perceived, self-reported impact of WASH on health, particularly at scale. A more gender-sensitive understanding of how WASH impacts health could be possible if WASH studies reported sex-disaggregated outcomes.¹⁶

Within the *Time & Labor* dimension, five themes were identified, three of which have national-level measures: ‘time spent accessing/using WASH services/facilities’ (water only); ‘labor delegation for WASH-related chores’ (water only); and ‘control over time and labor spent on WASH activities’ (menstruation only) (Table 5, Appendix 6: [Access to Resources: Time & Labor](#)). Only tools at the sub-national level capture any information related to satisfaction with time or labor required for WASH and/or ability to access WASH at certain times/without delay. Items that cover aspects of control over time spent on WASH-related chores, such as opportunity costs and time constraints on public participation or leisure, were identified largely at the sub-national or programmatic level. No items directly assess control over time and labor, time available to participate in WASH-related initiatives, or perceived inequalities in labor delegation of WASH-related activities.

Within the *Financial Resources & Physical Assets* dimension, nine themes were identified with national-level measures identified for only two of those themes: ‘perceived affordability of WASH products, services, facilities’ (water only), and ‘impact of WASH conditions on financial resources/physical assets’ (menstruation only) (Table 6, Appendix 7: [Access to Resources: Financial Resources & Physical Assets](#)). Because DHS and MICS data are collected at the household level, they do not capture intrahousehold disparities in financial resources. Sub-national tools have been identified that capture financial resources for sanitation and menstrual hygiene, which could be tested and adapted for national monitoring. Non-menstrual hygiene is sparsely covered.

Table 5: Measures to Assess the Health and Lime & Labor Dimensions in the Access to Resources Domain					
Dimension & Themes	Water	Sanitation	Menstrual Health & Hygiene	General Hygiene	General/ Other WASH
Health					N/A
Perceived illness or experience of illness related to WASH conditions					N/A
Fear of harm from others while accessing WASH					N/A
Fear of injury while accessing WASH					N/A
Experience of injury while accessing WASH					N/A
Mental wellbeing related to WASH insecurity					N/A
Influence of WASH on social health					N/A
Experiences and consequences of employing WASH-related coping strategies	N/A		N/A	N/A	N/A
Impact of health on ability to access WASH					N/A
Time & Labor					
Time spent accessing/using WASH services/facilities					N/A
Time spent on WASH-related chores/maintenance	1				2
WASH-related labor					N/A
Labor delegation for WASH-related chores					N/A
Control over time and labor spent on WASH activities					N/A
Key Green: At least one theme is measured by a national-level tool AND at least one is measured by a sub-national-level tool. Yellow: At least one theme is measured by a national-level tool, but no sub-national-level tools measure the dimension. Orange: At least one theme is measured by a sub-national-level tool, but no national-level tools measure the dimension. Red: No tools identified at any level to measure the theme. N/A: The given theme does not include any sub-themes (according to the conceptual framework) that are specific to the given WASH topic. 1. No direct measure but potential proxy via analysis of DHS, MICS items 7. Time spent caring for dependents sick with WASH-related illnesses					

Table 5: Measures to Assess the Health and Lime & Labor Dimensions in the Access to Resources Domain

Table 6: Measures to Assess the *Financial Resources & Physical Assets* Dimension in the *Access to Resources* Domain

Dimension & Themes	Water	Sanitation	Menstrual Health & Hygiene	General Hygiene	General/ Other WASH
Financial Resources & Physical Assets	Green	Yellow	Green	Yellow	Yellow
Cost of WASH services/ facilities	Yellow	Yellow	Red	Red	N/A
Access to sufficient funds to access or improve WASH	Yellow	Yellow	Yellow	Red	N/A
Access to financial assistance including loans and subsidies	Yellow	Yellow	Red	Red	1
Perceived affordability of WASH products, services, facilities	Green	Yellow	Yellow	Yellow	N/A
Willingness to pay for WASH products, services, facilities	Red	Yellow	Red	Red	N/A
Distribution of WASH-related costs within the household	Yellow	Yellow	Yellow	Red	N/A
Control over resources for WASH access and improvements	Yellow	Yellow	Yellow	Yellow	N/A
Impact of WASH conditions on financial resources/physical assets	Yellow	Yellow	Green	Red	N/A
Earning an income from WASH	Yellow	Yellow	Red	Red	2
<p>Key</p> <p>Green: At least one theme is measured by a national-level tool AND at least one is measured by a sub-national-level tool.</p> <p>Yellow: At least one theme is measured by a national-level tool, but no sub-national-level tools measure the dimension.</p> <p>Orange: At least one theme is measured by a sub-national-level tool, but no national-level tools measure the dimension.</p> <p>Red: No tools identified at any level to measure the theme.</p> <p>1. Ability to or experience with taking financial assistance for WASH-related enterprise</p> <p>2. Income earned from any WASH activities</p>					

Table 6: Measures to Assess the Financial Resources & Physical Assets Dimension in the Access to Resources Domain

Within the *Knowledge & Information* dimension, three themes were identified; no national-level measures were identified for any of those themes (Table 7, Appendix 8: *Access to Resources: Knowledge & Information*). Sub-national items largely ask about knowledge and sources of knowledge related to menstruation, and identified tools are mostly aimed at capturing information from adolescent girls. No identified tools aimed to capture what men and boys know or understand about menstrual health and hygiene.

Within the *Social Capital* dimension, seven themes were identified; no national-level measures were identified for any of those themes (Table 7, Appendix 9: *Access to Resources: Social Capital*). Among the sub-national tools, sanitation is better covered than water, menstruation, or non-menstrual hygiene. Tools tended to overlook hygiene-related social support or focused hygiene-related items exclusively on menstruation-related social support. The theme most queried by measures is ‘social support for accessing WASH-related information,’ with items focused on best practices for safe water and sanitation as well as sources of information about menstruation.

Table 7: Measures to Assess the Knowledge & Information Dimensions in the Access to Resources Domain

Dimension & Themes	Water	Sanitation	Menstrual Health & Hygiene	General Hygiene	General/ Other WASH
Knowledge & Information					
Knowledge related to maintaining or improving WASH					N/A
Access to WASH-related information					1
Financial and market literacy					2
Social Capital					
WASH-related community groups					N/A
Social support to facilitate accessing WASH/tending to WASH needs					N/A
Social support to fulfill WASH-related responsibilities					N/A
Social support for accessing WASH information					3
Social support for improving WASH conditions					N/A
Social support to facilitate WASH-related decision-making and/or leadership					N/A
Perceived changes in social support as a result of WASH interventions or participation	N/A	N/A	N/A	N/A	4
<p>Key</p> <p>Green: At least one theme is measured by a national-level tool AND at least one is measured by a sub-national-level tool.</p> <p>Yellow: At least one theme is measured by a national-level tool, but no sub-national-level tools measure the dimension.</p> <p>Orange: At least one theme is measured by a sub-national-level tool, but no national-level tools measure the dimension.</p> <p>Red: No tools identified at any level to measure the theme.</p> <p>1. Access to information about and/or awareness of rights related to WASH</p> <p>2. Financial literacy and job skills to facilitate WASH-related income-generating activity</p> <p>3. Social support for accessing information about WASH service providers</p> <p>4. Changes in relationships as a result of participation in WASH-related meetings/events/initiatives or purchasing/installing WASH infrastructure</p>					

Table 7: Measures to Assess the Knowledge & Information Dimensions in the Access to Resources Domain

Ability to Exercise Agency

The *Ability to Exercise Agency* domain includes three dimensions, each with numerous themes (Table 8 & Table 9). Each dimension is described in individual briefs (See Appendices 10-12). Of the three dimensions, only one has a theme with a national-level measure—*Public Participation*—and it focuses on ‘general WASH.’ No national-level measures were identified to assess any themes in *Household Decision-Making* or *Freedom of Movement*, or to assess specific water, sanitation, menstruation, or general hygiene topics. Items from sub-national tools that assess each of the related dimensions could be adapted and tested for use in national-level surveys.

Within the *Household Decision-Making* dimension, five themes were identified with no national-level measures identified for any of those themes (Table 8, Appendix 10: *Ability to Exercise Agency: Household Decision-Making*). Sub-national tools captured themes related to water and sanitation better than menstruation and hygiene; several of these items could be adapted for use at scale in national-level surveys.

Table 8: Measures to Assess the <i>Household Decision-Making</i> Dimensions in the <i>Ability to Exercise Agency</i> Domain					
Dimension & Themes	Water	Sanitation	Menstrual Health & Hygiene	General Hygiene	General/ Other WASH
Household Decision-Making					
General household WASH decision-making	N/A	N/A	N/A	N/A	1
Control over decisions related to WASH purchases					N/A
Control over decisions regarding water source and sanitation and hygiene facility design, construction, and improvement					N/A
Control over decisions regarding water and sanitation and hygiene facility use, management, and maintenance					N/A
Control over WASH-related chore allocation within their households					N/A
Key					
Green: At least one theme is measured by a national-level tool AND at least one is measured by a sub-national-level tool.					
Yellow: At least one theme is measured by a national-level tool, but no sub-national-level tools measure the dimension.					
Orange: At least one theme is measured by a sub-national-level tool, but no national-level tools measure the dimension.					
Red: No tools identified at any level to measure the theme.					
1. Decisions/degree of input over general household decisions related to water, sanitation, and hygiene					

Table 8: Measures to Assess the *Household Decision-Making* Dimensions in the *Ability to Exercise Agency*

Within the *Public Participation* dimension, ten themes were identified covering many types and levels of participation; national-level measures were identified for only two of those themes, both related to ‘general WASH’: ‘participation in WASH-related IGAs’ and ‘impact of WASH conditions/responsibilities on ability to participate in public life (work, school, social activities)’ (Table 9: Measures to Assess the Public Participation and Freedom of Movement Dimensions Appendix 11: *Ability to Exercise Agency: Public Participation*). More items were identified that focused on water and sanitation than on hygiene. More items were also available at lower levels (e.g. community or group). Several sub-national tools aimed to capture not only

presence in WASH-related groups or organizations, but degree of participation and influence in groups. No items were found that measure ‘participation in high-level WASH positions or governance.’

Within the *Freedom of Movement* dimension, two themes were identified; no national-level measures were identified for either of those themes (Table 9, Appendix 12: *Ability to Exercise Agency: Freedom of Movement*). For the theme ‘ability to access WASH locations,’ no items were identified for accessing water or general hygiene; sub-national measures were identified for sanitation and menstruation only. Importantly, lack of access to water, sanitation, or hygiene may constrain individuals’ freedom of movement, such as limiting where they go or how far they are willing to travel. The Agency, Resources, and Institutional Structures for Sanitation-related Empowerment (ARISE) measures contain items related to such constraints for sanitation and menstrual needs²⁸ and could be adapted to assess constraints on movement due to water and hygiene access as no measures currently exist for these topics.

Table 9: Measures to Assess the Public Participation and Freedom of Movement Dimensions in the Ability to Exercise Agency Domain

Dimension & Themes	Water	Sanitation	Menstrual Health & Hygiene	General Hygiene	General/ Other WASH
Public Participation					
Opportunities for participation in WASH-related groups					1
Representation in WASH-related groups					2
Leadership in WASH-related groups					N/A
Voice/influence in WASH-related groups					N/A
Participation in WASH-related community activities/meetings					N/A
Leadership in WASH-related community activities/meetings					N/A
Voice/influence in WASH-related community activities/meetings					3
Participation in high-level WASH positions or governance	N/A	N/A	N/A	N/A	4
Participation in WASH-related IGAs					5
Impact of WASH conditions/responsibilities on ability to participate in public life (work, school, social activities)	N/A	N/A	N/A	N/A	6
Freedom of Movement					
Ability to access WASH locations					N/A
Ability to access WASH-related public life	N/A	N/A	N/A	N/A	7
1. Opportunities for participation in WASH-related groups or initiatives (unspecified) 2. Representation or membership in WASH-related group (unspecified) 3. Ability, comfort voicing WASH-related concerns (unspecified); degree to which these are listened to in community activities/meetings 4. Participation in ministries, NGOs, regulatory agencies or high-level careers for WASH infrastructure maintenance or creation					

- | |
|--|
| <p>5. Participation in WASH-related IGA or job training (unspecified)</p> <p>6. Impact of WASH conditions/responsibilities on ability to participate in work, school, social activities</p> <p>7. One item related to ability to access WASH-related meetings/events; No items related to ability to access WASH service providers</p> |
|--|

Table 9: Measures to Assess the Public Participation and Freedom of Movement Dimensions in the Ability to Exercise Agency

Multi-Level Enabling Environment

The *Multi-Level Enabling Environment* domain includes four dimensions, each with numerous themes (Table 10: Measures to Assess the Identified Dimensions in the). Each dimension is described in individual briefs (see Appendix 13: **Multi-level Enabling Environment: *Social Context***-16). Of the four dimensions, only one (*Social Context*) does not have any measures for any of the themes or topic areas from a national-level tool. Water and sanitation are well-represented, with measures for nearly all themes at the national, sub-national, or both levels. The most thematic gaps are for menstruation, particularly for the *Social Context* and *Political Context* dimensions.

Within the *Social Context* dimension, five themes were identified; no national-level measures were identified for any of these themes (Table 10, Appendix 13: **Multi-level Enabling Environment: *Social Context***). There were no identified items for menstrual or non-menstrual hygiene under most themes. Importantly, with the exception of some norms-related items, the social context items identified by the review are not gender-specific. To capture gendered differences, analysis requires disaggregation to understand sex- and gender-related differences. Discrimination on the basis of gender can be intensified by discrimination on the basis of other social identities or positions. The UN Women report on Gender Equality in the 2030 Agenda for Sustainable Development provides a number of common forms of discrimination, which can compound the discrimination experienced by women and girls, including sexual orientation and gender identity, immigration status, family status, religion, geography, income, HIV status, marital status, race/ethnicity, origin or nationality, caste, age, ability, and indigenous status.^{2,8} Analyses could leverage existing data concerning context-relevant forms of discrimination to identify intersectionalities salient for WASH access.

Within the *Political Context* dimension, five themes were identified; national-level measures were identified for four of the themes (Table 10, Appendix 14: **Multi-level Enabling Environment: *Political Context***). Strong coverage of the *Political Context* at the national level is largely attributable to the Global Analysis and Assessment of Sanitation and Drinking-Water (GLAAS) tool.²⁹ Political context tools such as GLAAS or the Equitable Access Scorecard (EAS)³⁰ deviate from most tools included in this review as they are meant to be deployed at the government – rather than household – level. Non-menstrual hygiene is well-covered at the national level for this dimension, unlike in other dimensions.

Within the *Economic Context* dimension, four themes were identified; national-level measures were identified for all four of the themes (Table 10, Appendix 15: **Multi-level Enabling Environment: *Economic Context***). However, none were identified for menstruation or general hygiene. No items were identified on affordability of WASH infrastructure such as water points, latrines, or handwashing stations.

Within the *Environmental Context* dimension, three themes were identified; national-level measures were identified for all themes and overall, the dimension is well-covered at both national and sub-national levels across water, sanitation, and both menstrual and general hygiene (Table 10, Appendix 16: **Multi-level Enabling Environment: *Environmental Context***). Several items are also included in the *Ability to Meet WASH Needs* domain.

Table 10: Measures to Assess the Identified Dimensions in the Multi-Level Enabling Environment Domain					
Dimension & Themes	Water	Sanitation	Menstrual Health & Hygiene	General Hygiene	General/ Other WASH
Social Context					
Social harmony					N/A
Shared goals					N/A
Group solidarity					N/A
Social inclusion	N/A	N/A	N/A	N/A	1
Norms					N/A
Political Context					
Laws and policies for WASH-related rights					N/A
Budgeting and resource targeting for vulnerable populations and gender-sensitive WASH					N/A
Capacity for WASH programming and service provision					2
Governance structures for diverse participation					N/A
Local leadership					N/A
Economic Context					
Presence and use of WASH options					N/A
Affordability/cost of WASH options					N/A
WASH-related employment and job market	N/A	N/A	N/A	N/A	3
Access to credit or subsidies			N/A	N/A	N/A
Physical Environment Context					N/A
WASH location and type					N/A
Physical accessibility of WASH location					N/A

Functionality and characteristics of WASH infrastructure					N/A
1. Perceptions of or experiences with discrimination due to social identity that impacts access to or participation in WASH. 2. Technical skills, awareness, clear responsibilities, time, and human resources to implement gender-sensitive WASH (unspecified) policies or programs at governmental, local, institutional, or service provider levels 3. Supply and demand of WASH job market; Women's involvement in WASH-related employment or enterprise.					

Table 10: Measures to Assess the Identified Dimensions in the Multi-Level Enabling Environment Domain

Opportunities to Leverage Existing Data

Our review revealed several opportunities to leverage existing data for analysis and reporting related to gender and WASH. Table 11 summarizes select opportunities for leveraging existing data, with further opportunities and information provided in each of the dimension briefs (Appendix 2: [Ability to Meet WASH Needs-16](#)). Notably, most of the identified analysis opportunities can be undertaken with the publicly available Demographic and Health Survey and Multiple Indicator Cluster Survey data, both of which are implemented in numerous countries globally and with regular frequency. We have highlighted a few examples of how data may be leveraged in the text that follows.

Regarding the *Ability to Meet WASH Needs* domain, we have identified opportunities related to those who menstruate and use reusable materials. All who menstruate require access to water for personal washing, but those using reusable materials may require more water to wash their materials. Analysis can be undertaken using DHS data to understand the proportion of those using reusable materials who do not have access to a water source in their household or compound. Additionally, among those who do not have water access at their household access, further analyses can be carried out to discern the proportion who need to travel greater than 30 minutes to gain access. An important limitation is that DHS asks specifically about drinking water, and thus it is possible that the drinking water source is not the same source used for washing materials. Still, the drinking water source may be used as a proxy and may provide initial insights about whether those who use reusable materials face barriers to meeting their water needs.

For the *Ability to Meet WASH Needs* domain, we also have identified opportunities related to those who experiences challenges with self-care. Specifically, MICS asks if individuals have challenges with self-care, which includes bathing and washing. Among those who experience difficulty, analysis can be undertaken to also discern what proportion of these individuals may be further hampered by not having access to household water or sanitation facilities. Data would need to be presented in a disaggregated manner to enable comparison by sex. Details about this analysis are also presented in the *Health* brief (Appendix 5: [Access to Resources: Health](#)).

In the *Resources* domain, we identified analysis opportunities related to three dimensions: *Safety & Freedom from Violence*, *Time & Labor*, and *Financial Resources & Physical Assets*. While WASH-specific measures related to *Safety & Freedom from Violence* are limited, the DHS could be leveraged for further analysis using non-WASH items. For example, the DHS has several non-WASH safety items, including perceived neighborhood safety and experience of violence. Analysis could be used to determine the proportion of those who perceive their neighborhoods to be unsafe yet need to access water and sanitation outside of the home. In addition, analysis can be carried out to determine risk of violence and sanitation type, as has been done with DHS data from India and Kenya.^{31,32} (Multiple additional opportunities for analysis are noted in Appendix 3: [Access to Resources: Safety and Freedom from Violence](#)).

For the *Time & Labor* dimension, both DHS and MICS directly measure absolute time spent collecting water as well as who usually collects water, which can be used to assess differences in time spent on water collection by sex. This analysis will not indicate how individuals feel about time spent collecting water or their roles in water collection; however, it will be able to demonstrate time burden and responsibility and time use trends (Appendix 6: *Access to Resources: Time & Labor*).

There are limited analysis opportunities related to the *Agency* domain. However, the DHS does have several questions related to general *household-decision making*, which could be leveraged. Specifically, the DHS asks about who in the household makes decisions about small and large purchases. Exploratory analyses could investigate if there is any association with women’s household decision making power and household access to sanitation or water facilities.

Table 11: Opportunities for Leveraging Existing Data to Assess and Report Gender in WASH	
Dimension	Identified Opportunities
Ability to Meet WASH Needs	
Ability to meet WASH Needs	Ability to meet water needs among those using reusable menstrual materials (DHS/MICS): <ul style="list-style-type: none"> The proportion of women using reusable materials that do and do not have access to water at home The proportion of women using reusable materials without water at home who travel over 30 min. for water
	Ability to meet water and sanitation needs among those experiencing difficulty with selfcare (MICS): <ul style="list-style-type: none"> The proportion of those indicating difficulty bathing who do not have household water or sanitation access.
	Extent that WASH facilities meet the needs of those with disabilities: <ul style="list-style-type: none"> WHO Model Disability Survey or Disability Assessment Schedule measure prevalence of physical disabilities. These data can be used in conjunction with DHS/MICS data to estimate the proportion of the population in need of accessible water, sanitation, and hygiene facilities and the proportion that actually have access ²⁶
Access to Resources	
Safety & Freedom from Violence	Differences in experiences of safety and violence among those with / without water & sanitation (DHS): <ul style="list-style-type: none"> Among women who do not feel it is safe to walk in their neighborhoods after dark: <ul style="list-style-type: none"> The proportion who do not have access to a sanitation facility at home. The proportion who do not have access to a water facility at home. Odds of experiencing violence among: <ul style="list-style-type: none"> Those practicing open defecation compared to those who are not³² Those with a sanitation facility in the home compared to those without Those with a source of water in home/at home compound compared to those without³¹
Time & Labor	Identification of who collects water and absolute time spent collecting water (DHS/MICS): <ul style="list-style-type: none"> Gender differences in responsibility for and time spent on water collection
Ability to Exercise Agency	
Household Decision-Making	DHS items on how income is spent and who makes decisions on major household purchases may be leveraged to discern who has decision-making power for major and minor WASH purchases. <ul style="list-style-type: none"> Identify associations between who has decision-making power over major purchases and likelihood of having a water or sanitation facility at the house
Multi-level Enabling Environment	
Social Context	Disaggregate data by various social markers of identity, in addition to sex, to understand inequalities: <ul style="list-style-type: none"> Discrimination on the basis of gender frequently intersects with discrimination on the basis of other social identities or positions. Analyses could leverage existing data concerning context-relevant forms of discrimination to identify intersectionalities salient for WASH access.³³
Political Context	Assess existence of gender-relevant WASH laws and policies (GLAAS): <ul style="list-style-type: none"> Assess presence of policies, budgeting, human resources, and monitoring to extend water, sanitation, and drinking water to vulnerable groups (including women, elderly people, people living with disabilities, and internally displaced persons, among others) Assess presence of laws governing engagement with water users and community, and if those laws specifically elicit women’s participation

Table 11: Opportunities for Leveraging Existing Data to Assess and Report Gender in WASH

In the *Multi-level Enabling Environment* domain, opportunities exist related to the *Social Context* and the *Political Context* dimensions. The primary recommendation in regard to the *Social Context* dimension is to leverage existing data in MICS, DHS and other data sets to enable further disaggregation by social other identifiers in addition to sex, as is possible and relevant for varied contexts. Further disaggregated analyses can be carried out in addition to other recommendations previously noted. For example, analysis that identifies the proportion of women who do not feel safe to walk in their neighborhood at night and do not have access to household sanitation (*Safety & Freedom from Violence* domain), could further stratify findings by women's age, neighborhood, caste (as appropriate) etc., to further identify if specific groups are more vulnerable.

Finally, for *Political Context*, the revised GLAAS tool may enable various analyses (once data is collected) to assess the existence of gender-relevant WASH laws and policies around the globe.

Opportunities for Strengthening Large- and Small- Scale Monitoring

Across all dimensions in each domain, we have identified opportunities to strengthen both large- and small-scale monitoring. We specifically consider the monitoring gaps identified in the review process and present potential solutions for filling those gaps. Potential solutions including scaling existing items, adapting existing items, or developing and testing new items. The tables below summarize identified solutions for strengthening both large-scale monitoring (Table 12: Opportunities for Large Scale Monitoring; Table 13) and small-scale monitoring (Table 14; Table 15).

For large-scale monitoring, we identify one opportunity for scaling a pre-existing item previously used in a large, nationally-representative survey. Specifically, we recommend an item related to perceived safety from the PMA2020 (Performance Monitoring and Accountability) survey. We provide recommendations for adapting existing items from national-level tools across 10 of the dimensions and for adapting existing items from sub-national-level tools across 5 of the dimensions. We identified the need to develop and test new items across eight dimensions.

We have found that pre-existing tools should be leveraged for adapting and informing development of new items for large-scale monitoring. All recommendations for adapting national-level tools come from the DHS, Equitable Access Scorecard (EAS), MICS, The Living Standards Measurement Survey (LSMS), and PMA2020. Recommendations for adapting or developing items also draw from numerous sub-national tools, demonstrating that preliminary thinking around these dimensions has already been undertaken and that some of these identified measures may be well suited for use at a scale once adapted and tested. Identified tools that have items that may be adapted include: The Agency, Resources, and Institutional Structures for Sanitation-related Empowerment Scale (ARISE); The Empowerment in WASH Index (EWI); The Household Care Survey Questionnaire-Women's Time Allocation and Division of Tasks AND Men's Behavior and Division of Tasks (OXFAM); The Household Water Insecurity Experiences Scale (HWISE); The Menstrual Health Seeking Behaviors Questionnaire (MHSB); Menstrual Insecurity Scale (MIS), The Menstrual Practices Needs Scale (MPNS); The Menstrual Practices Questionnaire (MPQ); Odisha Water Concerns Module (Odisha -WCM), The Sanitation Insecurity Scale (SI); The SWE Gender Toolkit (SWE); WASH-Gender Equality Measure (WASH-GEM); and The UNESCO WWAP Toolkit on Sex-Disaggregated Water Data (WWAP) (See Appendix 1: for full list of and information on tools). Additional details about recommendations are in corresponding dimension briefs (Appendix 2: [Ability to Meet WASH Needs](#)

For small-scale monitoring, we identify opportunities to scale pre-existing items in 13 dimensions, to adapt existing items in 12 dimensions, and recommend developing and testing new items in three dimensions. Identified tools with items that can be leveraged for scaling, adaptation, and development include: The Agency, Resources,

and Institutional Structures for Sanitation-related Empowerment Scale (ARISE); Empowerment in WASH Index (EWI); Baseline survey on menstrual hygiene management (MHM) in school at Tigray, Amhara, SNNPR and Oromia regional state, Ethiopia; The Menstrual Practices Needs Scale (MPNS); The Menstrual Practices Questionnaire (MPQ); The MHM of Adolescent Schoolgirls and Nuns Survey; The Sanitation Insecurity Scale (SI); The SWE Gender Toolkit (SWE); The UNICEF Guidance for Monitoring MHM; The UNESCO WWAP Toolkit on Sex-Disaggregated Water Data (WWAP); WASH-Gender Equality Measure (WASH-GEM); and WaterAid’s COVID-19 MTRA. Additional details about recommendations are in corresponding dimension briefs (Appendix 2: [Ability to Meet WASH Needs](#))

Table 12: Opportunities for Large Scale Monitoring: Ability to Meet WASH Needs and Resources Domains	
Dimension	Identified Opportunities
Ability to Meet WASH Needs	
Ability to Meet WASH Needs	<p>Adapt existing items from nationally representative tools:</p> <ul style="list-style-type: none"> MICS data captures if there is soap or a soap substitute available at handwashing stations; items such as toilet paper or water might be needed at sanitation locations. Adapt and test these resource questions for sanitation. <p>Develop and test new items:</p> <ul style="list-style-type: none"> To assess access to a facility for personal hygiene/ bathing (other than hand washing).
Access to Resources	
Safety & Freedom from Violence	<p>Scale existing items from nationally representative tools:</p> <ul style="list-style-type: none"> Test item from PMA2020: ‘While managing your menstrual hygiene, was this place [sanitation facility] safe?’ <p>Adapt existing items from nationally representative tools:</p> <ul style="list-style-type: none"> Adapt existing DHS/MICS item ‘During your last menstrual period, were you able to wash and change in privacy at home?’ to capture privacy and safety independently. (e.g., During your last menstrual period, was the place you washed and changed at home...private? (y/n) ...safe? (y/n)?) <p>Adapt existing items from sub-national tools to test at scale:</p> <ul style="list-style-type: none"> Items from existing sub-national tools (ARISE and SWE), particularly related to safety when accessing sanitation location and water points, respectively, may be adapted and tested for use in national-level surveys <p>Develop and test new items:</p> <ul style="list-style-type: none"> To assess if bathing location is (inside or outside home/compound), to enable additional analyses (See SI).
Privacy	<p>Adapt existing items from nationally representative tools:</p> <ul style="list-style-type: none"> Questions on perceived privacy for changing menstrual materials (DHS, MICS), could be adapted and tested for sanitation facilities and in relation to hygiene. <p>Develop and test new items:</p> <ul style="list-style-type: none"> While some questions exist to determine if a space is private or not, questions could be developed to identify how lack of privacy affects ability to use locations when needed, and what coping strategies may be adopted.
Health	<p>Adapt existing items from sub-national tools to test at scale:</p> <ul style="list-style-type: none"> Items from existing sub-national tools (ARISE, MPNS, SI, HWISE) may be used/adapted for national-level surveys, depending on health-related priorities. <p>Develop and test new items:</p> <ul style="list-style-type: none"> To assess perceived relationship between illness and WASH practices/options To capture relationship between particular health conditions (e.g., disabilities, pregnancy, etc.) and ability to access WASH facilities/resources
Time & Labor	<p>Adapt existing items from nationally representative tools:</p> <ul style="list-style-type: none"> Revise items related to absenteeism during menstruation (see PMA2020) <p>Adapt existing items from sub-national tools to test at scale:</p> <ul style="list-style-type: none"> To assess time spent accessing sanitation and time spent accessing hygiene (ARISE, SI, MPQ) To measure perceived control over or satisfaction with time required to access water, sanitation, and hygiene (e.g., ARISE items assess agreement with statements like “it takes too much time to access and use sanitation facility”) <p>Develop and test new items:</p>

	<ul style="list-style-type: none"> To assess perceived inequality of labor spent on WASH-related activities
Financial Resources & Physical Assets	<p>Adapt existing items from national tools to test at scale:</p> <ul style="list-style-type: none"> The WWAP has been utilized as a national monitoring tool in many countries and includes a variety of items related to perceived affordability, satisfaction with cost, and willingness to pay for various WASH services (with a focus on water). <p>Adapt existing items from sub-national tools to test at scale:</p> <ul style="list-style-type: none"> Standalone items from ARISE may be useful for assessing control over funds related to sanitation at national levels, and may be adapted to be relevant to water and/or hygiene.
Knowledge & Information	<p>Adapt existing items from sub-national tools to test at scale:</p> <ul style="list-style-type: none"> The MHSB has been widely validated; items from this tool - concerning access to information related to menstrual hygiene - may be strong candidates for use in global monitoring tools. Items from ARISE and EWI measure knowledge related to maintaining or improving water and sanitation conditions and could be tested at scale and/or adapted to measure knowledge related to maintaining or improving hygiene conditions
Social Capital	<p>Develop and test new items:</p> <ul style="list-style-type: none"> Concerning social support to access and improve WASH (see MIS, SI, Odisha -WCM, and ARISE items that measure some - but not all - sub-themes under these themes) Concerning social support to facilitate WASH-related decision-making and leadership (see ARISE items that measure familial support for attending meetings, organizing initiatives, taking leadership roles in sanitation-related organizations; more work would be required to adapt these items for water and hygiene related purposes and/or broaden these items to deal with WASH-related decision-making and leadership overall)

Table 12: Opportunities for Large Scale Monitoring: Ability to Meet WASH Needs and Resources Domains

Table 13: Opportunities for Large Scale Monitoring: Ability to Exercise Agency and Multi-Level Enabling Environment Domains	
Dimension	Identified Opportunities
Ability to Exercise Agency	
Household Decision-Making	<p>Adapt existing items from sub-national tools to test at scale:</p> <ul style="list-style-type: none"> To assess feasibility and relevance of items from sub-national tools (ARISE, EWI, WWAP, Oxfam, WASH-GEM) for use in tools administered in nationally representative surveys. <p>Develop and test new items:</p> <ul style="list-style-type: none"> To capture decision-making for WASH facility management, chores, and purchases
Public Participation	<p>Adapt existing items from nationally representative tools:</p> <ul style="list-style-type: none"> Modify non-WASH-specific items from the LSMS to capture “free service or participate in community work or meetings” ...[related to water, sanitation, or hygiene in your community] in addition to free service for other community issues. <p>Adapt existing items from sub-national tools to test at scale:</p> <ul style="list-style-type: none"> Modify non-WASH specific items from IDM to capture extent to which “you are able to raise [WASH] issues in your community that you feel strongly about” Test items at scale that capture leadership in WASH-related groups or community activities/meetings (see ARISE items that measure leadership in sanitation groups/initiatives and WWAP, which measures leadership in water resource institutions)
Freedom of Movement	<p>Adapt existing items from nationally representative tools:</p> <ul style="list-style-type: none"> Consider adapting non-WASH-specific items that have been used to assess freedom of movement more generally at a national level (IHDS-2 Women’s Questionnaire: Mobility and DHS). <p>Adapt existing items from sub-national tools to test at scale:</p> <ul style="list-style-type: none"> Test items from ARISE related to freedom of movement to access sanitation facilities and meetings/events, and items related to constrained freedom of movement due to limited sanitation access; could also adapt ARISE’s sanitation-related items to capture freedom of movement related to water and hygiene
Multi-level Enabling Environment	
Social Context	<p>Adapt existing items from nationally representative tools:</p> <ul style="list-style-type: none"> Consider expansion of ‘demographics’ or ‘personal and household characteristics’ modules in existing large-scale monitoring efforts to enable analysis of the impacts of intersectional social position/identity (e.g., gender, age, sexuality, caste, etc.) on WASH access. <p>Develop and test new items:</p> <ul style="list-style-type: none"> To assess how social context impacts hygiene-related issues (particularly those not related to menstruation) and how these issues are addressed within the social context.
Political Context	<p>Adapt existing items from nationally representative tools:</p> <ul style="list-style-type: none"> Modify and test existing items from the EAS related to water and sanitation to assess the political context around hygiene. <p>Develop and test new items:</p> <ul style="list-style-type: none"> To measure key aspects of the political context pertinent for delivering gender equitable WASH services across country contexts.

Economic Context	<p>Develop and test new items:</p> <ul style="list-style-type: none"> To assess affordability and access to credit for WASH infrastructure needs
Environmental Context	<p>Adapt existing items from nationally representative tools:</p> <ul style="list-style-type: none"> Specify “physical accessibility” for JMP Household and MICs items related to access to water source Include other disability considerations in JMP Household item about reasons for inability to access sanitation (e.g. incontinence) and include similar items related to hygiene locations

Table 13: Opportunities for Large Scale Monitoring: Ability to Exercise Agency and Multi-Level Enabling Environment Domains

Table 14: Opportunities for Small Scale Monitoring: Ability to Meet WASH Needs and Resources Domains	
Dimension	Identified Opportunities
Ability to Meet WASH Needs	
Ability to meet WASH Needs	<p>Adapt existing items from school settings:</p> <ul style="list-style-type: none"> Test and validate tools designed to measure menstrual experiences in school settings with adaptations made to ensure appropriateness for non-school populations. <p>Scale existing items:</p> <ul style="list-style-type: none"> Include items related to satisfaction with WASH facilities (ARISE, SI, and WWAP). Include items related to access to handwashing facilities including soap and water (WASH-GEM, COVID-19 MTRA)
Access to Resources	
Safety & Freedom from Violence	<p>Scale existing items:</p> <ul style="list-style-type: none"> To assess safety and freedom from violence related to sanitation (ARISE, WASH-GEM) and safety when accessing water points (SWE). <p>Develop and test new items:</p> <ul style="list-style-type: none"> To assess safety of location used for general hygiene needs, supplementing existing items related to safety of locations used for menstrual hygiene.
Privacy	<p>Adapt existing items:</p> <ul style="list-style-type: none"> Adapt items from ARISE, MPNS, and/or WASH-GEM to assess the full breadth of menstrual needs, including privacy needs. <p>Develop and test new items:</p> <ul style="list-style-type: none"> Develop or adapt items (such as those from ARISE) to assess privacy related to water access. Testing of items should assess relevance, since privacy for water access may be more context-specific than privacy for sanitation or hygiene needs.
Health	<p>Scale existing items:</p> <ul style="list-style-type: none"> Use items from the ARISE, MPQN, SI, or WASH-GEM to assess the influence of water, sanitation, hygiene, or menstruation on stress/mental health. To assess how people cope with lack of access to satisfactory WASH (ARISE and SI). <p>Adapt existing items:</p> <ul style="list-style-type: none"> From ARISE, MPQN, or the Sanitation Insecurity measure to assess stress/mental health related to water and hygiene.
Time & Labor	<p>Scale existing items:</p> <ul style="list-style-type: none"> To monitor satisfaction with time spent accessing sanitation facilities or meeting menstruation-related needs (ARISE). To measure suppression of sanitation needs or delaying meeting sanitation needs (ARISE; Sanitation Insecurity measure). <p>Adapt existing items:</p> <ul style="list-style-type: none"> To measure suppression or delaying of meeting water and hygiene needs. To measure time burden of WASH-related chores, building on the qualitative WWAP.

Financial Resources & Physical Assets	<p>Scale existing items:</p> <ul style="list-style-type: none"> To assess (in)ability to access preferred water or sanitation source due to cost (ARISE). To incorporate gender-sensitive measurement of dependence on others and control over money for sanitation-, water-, and menstruation-related purposes (ARISE and EWI).
Knowledge & Information	<p>Scale existing items:</p> <ul style="list-style-type: none"> To measure general WASH- (Empowerment in WASH Index, WASH-GEM), water- (EWI and WWAP), and sanitation-related knowledge (ARISE). Items from ARISE should be tested for rural settings. <p>Adapt existing items:</p> <ul style="list-style-type: none"> To measure knowledge related to hygiene (ARISE).
Social Capital	<p>Scale existing items:</p> <ul style="list-style-type: none"> To assess social support for access to information about WASH providers and support for fulfilling water-related chores and the presence of water user groups (EWI). To assess sanitation-related social capital (ARISE). ARISE items should be tested in rural settings. To assess comfort addressing community leaders about WASH-related problems (ARISE, WASH-GEM) <p>Adapt existing items:</p> <ul style="list-style-type: none"> To measure themes across the social capital domain related to water and hygiene (ARISE).

Table 14: Opportunities for Small Scale Monitoring: Ability to Meet WASH Needs and Resources Domains

Table 15: Opportunities for Small Scale Monitoring: Ability to Exercise Agency and Multi-Level Enabling Environment Domains	
Dimension	Identified Opportunities
Ability to Exercise Agency	
Household Decision-Making	<p>Scale existing items:</p> <ul style="list-style-type: none"> To assess household-level influence over decision-making related to water (EWI, WASH-GEM) and sanitation (ARISE, EWI, WASH-GEM). To assess control over household WASH expenditures (ARISE, EWI). To assess decision-making for sanitation-related improvements (ARISE). <p>Adapt existing items:</p> <ul style="list-style-type: none"> To assess decision-making for water- and hygiene-related improvements (ARISE).
Public Participation	<p>Scale existing items:</p> <ul style="list-style-type: none"> To assess opportunities for participation and representation in water user groups and voice in community water planning (EWI; pro-WEAI). To measure participation in sanitation- (and some hygiene-) focused groups, activities, and meetings (ARISE). <p>Adapt and test existing items:</p> <ul style="list-style-type: none"> To assess participation in rural setting for sanitation- and hygiene-focused groups, activities, and meetings, and to assess participation in water-related activities (ARISE).
Freedom of Movement	<p>Scale existing items:</p> <ul style="list-style-type: none"> To assess freedom of movement to meet sanitation and menstruation needs (ARISE). To assess constraints to freedom of movement related to limited sanitation facilities (ARISE). Consider WASH-specific additions to the pro-WEAI used by Sinharoy et al. in India,³⁴ a survey in Bangladesh,³⁵ the Household Level Empowerment tool.³⁶ <p>Adapt and test existing items:</p> <ul style="list-style-type: none"> To assess freedom of movement to meet menstruation-related needs in addition to changing materials, such as acquiring materials or pain management resources, washing and drying reusable materials, or disposing of materials (ARISE). To assess freedom of movement to meet water- and hygiene-related needs (ARISE). To assess constraints to freedom of movement related to community participation, including WASH-related organizations (WASH-GEM) To assess constraints to freedom of movement related to insufficient water access (ARISE).
Multi-level Enabling Environment	
Social Context	<p>Scale existing items:</p> <ul style="list-style-type: none"> To measure aspects of the social context that may influence access to sanitation and participation in sanitation-related activities (ARISE). To differentiate between behaviors adopted due to individual preference and those driven by family/community expectations (EWI, WASH-GEM). To measure community perceptions on gendered division of WASH-related responsibilities (ARISE, WASH-GEM) <p>Test and adapt existing items:</p> <ul style="list-style-type: none"> Test ARISE items related to social factors that may influence sanitation access in rural settings and adapt if

	needed.
Political Context	<p>Scale existing items:</p> <ul style="list-style-type: none"> To assess local leadership related to WASH (ARISE and EWI). To gather qualitative information about water- and sanitation-related policies and governance (WWAP). <p>Adapt existing items:</p> <ul style="list-style-type: none"> To assess local leadership specific to water and hygiene and for rural settings (ARISE). To gather qualitative information about hygiene-related policies and governance (WWAP).
Economic Context	<p>Scale existing items:</p> <ul style="list-style-type: none"> To measure affordability of menstrual materials (Ethiopia-SNV, UNICEF-MHM, MHM-Schoolgirls and Nuns), water (ARISE, WWAP), sanitation (ARISE), and hygiene materials (COVID-19 MTRA). <p>Adapt existing items:</p> <ul style="list-style-type: none"> To assess affordability of consumable sanitation materials (e.g. toilet paper).
Environmental Context	<p>Adapt existing items:</p> <ul style="list-style-type: none"> Related to characteristics of menstrual hygiene locations for locations used for hygiene at times other than during menstruation. <p>Develop and test new items:</p> <ul style="list-style-type: none"> More specific items related to accommodations for people living with disabilities, such as physical features like ramps or bars. To ask about both natural environmental factors, climatic/seasonal factor, and factors related to population and building density that may affect WASH access.

Table 15: Opportunities for Small Scale Monitoring: Ability to Exercise Agency and Multi-Level Enabling Environment Domains

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Appendices

Appendix 1: Tools and Guidance Documents Included in Review

Tools and Guidance Documents Included in Review					
Tool/Document Name	Short Name	Creator	Year	Data collection level	Target for monitoring
African Ministers' Council on Water's (AMCOW) Country Status Overviews (CSOs)	AMCOW CSO	AMCOW	2011	National	Household
Agency, Resources, and Institutional Structures for Sanitation-related Empowerment Scale	ARISE	Sinharoy, S. S., Conrad, A., McManus, S., Patrick, M., & Caruso, B	2019	Regional	Household
Baseline survey on menstrual hygiene management (MHM) in school at Tigray, Amhara, SNNPR and Oromia regional state, Ethiopia.	Ethiopia-SNV	SNV	2014	Program	Schools
Baseline surveys on menstrual hygiene management (MHM) Interventions in schools in Indonesia	MHM-Indonesia	UNICEF	2016	Program	Schools
Core questions and indicators monitoring WASH in health care facilities in the Sustainable Development Goals	Core HCF	WHO/JMP/UNICEF	2018	National	Health care facilities
COVID-19 MTRA	COVID-19 MTRA	WaterAid	2021	Program	Households
Data collection field manual: formative research on MHM in Udaypur and Sindhuli Districts of Nepal	MHM-Nepal	WaterAid	2016	Program	Schools
Demographic and Health Survey- Phase 8	DHS8	DHS	2019	National	Households
Egyptian Labour Market Panel Survey-Subsistence and Domestic Work	ELMPS	CAPMAS (Egypt)	2012	National	Households
Empowerment in WASH Index	EWI	SEI	2020	Program	Individual, household, and community
Equitable Access Scorecard	EAS	UNECE	2013	National	Households, Schools
Expert Review of JMP MH	JMP Expert Review	JMP	2020	-	-
Gender and WASH Monitoring Tool	GWMT	Plan Australia	2014	Programs/regional	Government, communities
Gender Equality & Social Inclusion Index for WASH	GESI	Welthungerhilfe	2017	Programs	Households
Gender Scan Methodology	GWA-GSM	GWA	2011	Organizations/governments	Utilities/Governance
Gender-Responsive Water, Sanitation, and Hygiene: Key elements for effective WASH programming	GR-WASH	UNICEF	2017	-	Households, Schools
Global Analysis and Assessment of Sanitation and Drinking-Water	GLAAS	UN Water	2018	National	Government
Global Early Adolescent Survey	GEAS	WHO, JHU	2011	Regional	Schools

Global Sanitation Fund Outcome Assessment Analytical Guide	WSSCC	WSSCC and Univ at Buffalo	2018	Program	Households, Schools, Health care facilities
Her WASH WaterAid DFID MHM project in Pakistan	WaterAid DFID	WaterAid/DFID	2019	Program	Schools
Household Care Survey Questionnaire-Women's Time Allocation and Division of Tasks AND Men's Behavior and Division of Tasks	Oxfam	Oxfam	2014	Regional	Household
Household Water Insecurity Access Scale	HWIAS	Tsai et al.	2016	Regional	Household
Household Water Insecurity Experiences	HWISE	HWISE-RCN	2019	Regional	Households
Human Opportunity Index	HOI	World Bank	2014	National	Households
Human Resources Capacity Gap Study	HRCG	IWA	2014	National	Workforce
India Human Development Survey: Water, Fuel, and Energy Use	IHDS-2	National Council of Applied Economic Research, New Delhi (NCAER) and the University of Maryland	2011	National	Household
Individual Deprivation Measure	IDM	Australian National University, International Women's Development Agency and the Australian Government through the Department of Foreign Affairs and Trade.	2016, under revision	Program	Household
Individual Water Insecurity Experiences	IWISE	Gallup	2020	National	Households
Intergenerational Transmission of Gender Attitudes: Evidence from India	ITGA	Diva Dhar, Tarun Jain, Seema Jayachandran	2018	Regional	Schools
International Benchmarking Network for Water and Sanitation Utilities	IBNET	World Bank	2005	National	Connections'; unclear whether the connections are institution or HH-level
International Classification of Activities for Time Use Statistics	ICATUS	UN Statistics	2019	National	Individual
JMP Datasets (Healthcare facilities)	-	WHO/UNICEF	2019	National	Healthcare Facilities
JMP Datasets (Schools)	-	WHO/UNICEF	2019	National	Schools
Living Standards Measurement Survey	LSMS	World Bank	1980	National	Households
Malawi WASH and Disability Survey	LSHTM	LSHTM/Centre for Social Research, University of Malawi/Centre for Excellence in Water and Sanitation, Mzuzu University/WEDC	2014	National	Households
Menstrual Health Seeking Behaviors Questionnaire	MHSB	F. Darabi, M. Yaseri, A. Rohban, and F. Khalajabadi-Farahani	2018	Regional	Schools
Menstrual Insecurity Scale	MIS	Caruso, B. A., Portela, G., McManus, S., & Clasen, T	2020	Regional	Schools, Households
Menstrual Practices Needs Scale	MPNS	Hennegan, J., Nansubuga, A., Smith, C., Redshaw, M., Akullo, A., & Schwab, K.J.	2020	Regional	Multiple

A Review of Measures and Indicators for Gender in WASH. (2021). Caruso, BA. Salinger, A. Patrick, M., Conrad, C., & Sinharoy, SS.

Menstrual Practices Questionnaire	MPQ	Hennegan, J., Nansubuga, A., Akullo, A., Smith, C., & Schwab, K.J.,	2020	Regional	Multiple
MHM Matters	MHM Matters	WaterAid		-	Multiple
MHM of Adolescent Schoolgirls and Nuns	MHM - Schoolgirls and Nuns	School Health and Nutrition Division (SHND), Department of School Education, Ministry of Education & UNICEF	2018	National	Schools
Mining and Utilities Statistics Database	MINSTAT	UNIDO	2014	National	Workforce
Monitoring water, sanitation and hygiene (WASH) and related infection prevention and control (IPC) in delivery rooms	WASH-IPC	JMP	2019	-	Hospitals/delivery rooms
Multiple Indicator Cluster Surveys	MICS	WHO/UNICEF	2020	National	Household and individuals, including men, women, and children
National Family Health Survey India	NFHS	Ministry of Health and Family Welfare, India	2016	National	Households
Odisha Water Concerns Module (unpublished)	Odisha-WCM	Emory	2014	Regional	Households
One WASH National Programme of Ethiopia	OWNP	DFID	2019	National	Households, Schools, HCFs
Optimizing household survey methods to monitor the Sustainable Development Goals targets 6.1 and 6.2 on drinking water, sanitation and hygiene: A mixed-methods field-test in Belize	Khan	Shane M. Khan, Robert E. S. Bain, Karsten Lunze, Turgay Unalan, Bo Beshanski-Pedersen, Tom Slaymaker, Richard Johnston, Attila Hancioglu WHO, UNICEF, BU	2017	Regional	Household
Performance Monitoring and Accountability 2020	PMA 2020	BMFG/Johns Hopkins	2013	National	Household; HCFs
Power vs Money: Alternative Approaches to Reducing Child Marriage in Bangladesh, a Randomized Control Trial	PvM	Nina Buchmann, Erica Field, Rachel Glennerster, Shahana Nazneen, Svetlana Pimkina, Iman Sen	2018	Regional	Communities (six sub-districts)
Programme for International Student Assessment	PISA	OECD	2018	Program	Schools
Ready to Measure	Data2X	Data2X	2015, 2017	-	Various
Sanitation Insecurity Scale	SI	Emory	2017	Regional	Households
Service Provision Assessment	SPA	WHO/DHS Program	2008	National	Healthcare facilities
Should Aid Reward Performance? Evidence from a Field Experiment on Health and Education in Indonesia	Olken	Benjamin A. Olken, Junko Onishi, and Susan Wong	2014	Regional	-
Social Capital Assessment Tool	SOCAT	World Bank	2002	Program	Households, Communities, Organizations
Standards in school toilets - a survey questionnaire	Barnes	Barnes & Maddocks	2002	Program	Schools
Steptoe and Feldman Neighborhood Disorder (in ARISE)	Steptoe & Feldman	Medical Research Council	2001	Regional	Households
SWE Gender Toolkit	SWE	Safe Water Enterprise Alliance	2021	Program	Household

The evaluation of a sanitation intervention on sanitation-related emotional and psychological well-being among women and girls in Bihar	3ie-Bihar	3ie	2019	Program	Household
The Support for Analysis and Research in Africa	SARA	WHO and USAID	2011	National and subnational	Healthcare facilities
Toolkit for Mainstreaming Gender in Water Operations	Mainstreaming Gender in WASH	World Bank	2016	-	Multiple
Uganda National Panel Survey-Non Market Labour Activities	UNPS	Uganda National Statistical Bureau	2014	National	Households
Understanding and addressing equality, non-discrimination and inclusion in water, sanitation and hygiene (WASH) work	WaterAid-Understanding Equality	WaterAid	2018	-	Households
UNESCO WWAP Toolkit on Sex-Disaggregated Water Data	WWAP	UNESCO	2015, Revised in 2019	National	Households, Schools
UNICEF Guidance for Monitoring MHM	UNICEF - MHM Guidance	UNICEF	2020	-	Households, schools, organizations
U-Report 2017 draft question guidance	U-Report	UNICEF	2017	-	-
Utility Inequities Surveys	UIS	UN-HABITAT	2003	Regional	Household
Violence, Gender, & WASH: A Practitioner's Toolkit	SHARE	SHARE Consortium	2014	-	Households, Schools
WASH in Schools Empowers Girls' Education	WASH in Schools-Girls	UNICEF	2014	Program	Schools
WASH in Schools Monitoring Package	WASH in Schools-Monitoring	UNICEF	2011	-	Schools
WASH4Work	WASH4WORK	UNICEF	2019	Program	Workplace
WASH-Gender Equality Measure	WASH-GEM	ISF-UTS	2021 Revision	Program	Households
Washington Group Short Set on Functioning (in DHS)	WG-SS (in DHS)	Washington Group	2006	National	Households
Water sanitation and hygiene (WASH) masterplan: Asutifi North District, Ghana	WASH-Asutifi	IRC	2018	-	Households, Schools

Appendix 2: Ability to Meet WASH Needs

Ability to meet WASH needs refers to women and men, boys and girls, and sexual and gender minorities experiencing equity of access to water, sanitation, and hygiene facilities, with their different needs and vulnerabilities accounted for and addressed.

Summary

Primary themes identified within the *Ability to Meet Basic WASH Needs* dimension include:

1. Type, location, and distance of WASH facility used
2. Availability of locations that meet specific WASH needs
3. Physical accessibility and female-friendly design of WASH location
4. Ability to access WASH materials/resources as needed
5. Perceived quality of and/or satisfaction with WASH location/materials
6. Hygiene Practices

The following theme was identified that may have WASH implications:

- A. Differential needs and abilities
- B. Menstrual materials disposal and hygiene

Ability to meet basic WASH is also inclusive of several thematic areas covered in other briefs. Cultural norms, lack of safety, or lack of privacy may serve to prevent someone from meeting their WASH needs, but the majority of those items are covered elsewhere.

- Several tools that collect data at both national and sub-national levels capture items to identify type and location of WASH facilities; specific questions to assess distance to WASH facilities are limited to water sources. No national-level tools assess if households or individuals have access to a hygiene facility for bathing/washing. While the type of water and sanitation facilities households have access to is captured in national and global monitoring reports, this information alone is not sufficient to understand if those facilities are equally accessed and used as needed by individual household members. Sub-national monitoring may be better equipped to assess intrahousehold use of available facilities as needs arise.
- Availability of locations that meet specific WASH needs captures if and why individuals are able to or are prevented from going to locations. Sub-national items capture social drivers for being prevented from accessing locations as well as problems with the physical facility. The only national-level items in this category capture if there is a private place for managing menstruation.
- Physical accessibility and female-friendly design of WASH locations are poorly covered. National tools have an item to capture if there are bins for disposal of menstrual materials, but that is the extent of 'female-friendly' design. Further, there are no questions that capture if

water, sanitation, and hygiene facilities are accessible by all members of households, including the elderly or physically disabled. In communities, additional factors might prevent accessibility, such as caste, homelessness, or belonging to a sexual or gender minority. There are no items that cover these experiences.

- Ability to access WASH materials/resources (e.g. toilet paper, soap, menstrual materials) as needed is only captured at both national and sub-national levels for water and menstruation resources; only sub-national tools capture ability to access sanitation resources such as toilet paper or water specifically for sanitation.
- Regarding perceived quality of and/or satisfaction with WASH facilities/resources, no items exist at the national level to capture satisfaction with WASH locations or resources. Several sub-national tools capture elements of satisfaction for water, sanitation, and menstrual hygiene, but there are no items to capture satisfaction with other forms of personal hygiene.
- Hygiene practices are covered at the national level only as they relate to menstruation. The only hand hygiene practice questions are sub-national and were specifically developed as a result of COVID-19. Several sub-national tools capture body hygiene specifically during menstruation; there were no body hygiene items identified unrelated to menstruation.

WASH needs may vary based on specific physical conditions and abilities. Specific modules from DHS cover fistulas and disabilities; while these items are not directly tied to WASH needs, fistulas may result in additional WASH needs, and some disabilities may influence individuals' ability to meet WASH needs.

Various menstruation practices are assessed and cover how people who menstruate manage their menstrual materials, but do not indicate specifically if they are able to meet their basic needs. Menstruation practice items may point to what resources may be needed, or may be used in concert with knowledge of best/healthy practices to demonstrate areas where programming may be needed.

Ability to Meet Basic WASH Needs: Themes assessed in existing tools by level				
Themes	Sub-Themes	Tools measuring sub-theme		Notes
		Nationally representative	Sub-National (e.g., Prog./Proj. Eval)	
(1) Type, location, and distance of WASH facility used	Type and location of water source	DHS; INFHS; JMP; MICS	IDM; Mainstreaming Gender in WASH; WWAP	*DHS, IDM, INFHS, JMP, and MICS ask what the main source of drinking water is; DHS, MICS, and INFHS ask about location of water source; WWAP asks what sources used for water collection *MICS asks what the main source of water is for other purposes (e.g., cooking or handwashing) *WWAP asks if household is connected to piped water *Indicator only -> Numbers of women and men using improved water sources (Toolkit for Mainstreaming Gender in Water Operations)
	Distance to water source	No items identified	Mainstreaming Gender in WASH; WWAP	*WWAP asks what the distance of water source from house is if there is no piped water *Suggested indicators from Mainstreaming Gender in WASH: Ratios of men/women who live within 1.5 km of improved water source; ratios of men/women who live within the national target km to improved water supply; distances traveled by women / men (disaggregated) to collect drinking water
	Type and location of sanitation facility	DHS; JMP; MICS	ARISE; IDM; GESI; UNICEF-MHM Guidance WWAP	*ARISE, DHS, IDM, JMP, MICS, and WWAP ask about the type of sanitation facility *ARISE asks if different sanitation facilities are used at day / night, and for urination /defecation *ARISE, DHS, and MICS ask about location of toilet facility relative to home *GESI captures if community members use public sanitation facilities *IDM asks about secondary type of sanitation facility used, such as when away from home
	Distance to sanitation facility	No items identified	Mainstreaming Gender in WASH	*Suggested indicators from Mainstreaming Gender in WASH: Ratios of men/women who live within the national target km to improved sanitation facility; access to improved sanitation “near their home”
	Type and location of menstrual hygiene facility	PMA2020	ARISE; MHM - Nepal; MHM - Schoolgirls and Nuns; MPQ; U-Report; WSSCC	*WSSCC asks if there is a place to change while menstruating and to wash while menstruating; PMA 2020 asks if there is a place to dispose of materials *ARISE, MPQ, and PMA2020 ask where menstrual materials are most often changed; ARISE specifies at home and during the day and night; MPQ asks if it is the same place used for urination *All program/project-level listed tools ask where materials are disposed of

	Distance to menstrual hygiene facility	No items identified	No items identified	
	Type and location of place(s) for other hygiene needs	DHS; MICS	COVID MTRA; MHM - Nepal; MPQ	<p>*DHS & MICS ask about type of handwashing facility</p> <p>*MICS asks about location of handwashing facility, including if it is mobile or fixed</p> <p>*COVID MTRA asks about presence of location for handwashing at home and type of location</p> <p>*MHM-Nepal and MPQ ask about hygiene needs related to menstruation; MPQ asks about where MHM materials are washed; Data collection field manual asks about location of bathing during menstruation</p> <p>*Suggested indicators from Mainstreaming Gender in WASH: Numbers and percentages of men and women with access to hand-washing facilities; ratio of handwashing facilities for men vs women per household</p>
	Distance to hygiene facility(ies)	No items identified	No items identified	
(2) Availability of locations that meet specific WASH needs	Availability of water source or water at all times when needed	No items identified	Odisha-WCM; SWE	<p>*Odisha-WCM captures frequency of not being able to access an improved water source</p> <p>*Odisha-WCM captures inability to access water as needed, and need to depend on others for water</p> <p>*SWE captures if water collection point is adequate or improper</p>
	Availability of sanitation location at all times when needed	No items identified	ARISE; SI; WASH-GEM	<p>*ARISE asks if there have been any problems preventing usage of the main sanitation location, and if there is a sanitation location to use when away from home</p> <p>*ARISE captures if women or men are more likely to have to delay meeting needs due to workload, and if it is easier for men to find defecation locations away from home</p> <p>*SI captures inability to use or access sanitation location as needed because of workload, difficulty finding a place, or time of day</p> <p>*SI captures inability to access preferred or clean location, and delaying using sanitation location or interrupted urination due to lack of privacy</p> <p>*ARISE captures whether permission or accompaniment is needed to go to the sanitation location as needed. This item is also covered within the <i>Freedom of Movement</i> domain.</p> <p>*ARISE and SI both contain items to capture frequency of avoiding sanitation locations, either by suppressing the urge to urinate or defecate or by withholding food or water to prevent the need to urinate or defecate</p> <p>*WASH-GEM captures frequency of being able to access a toilet when needed</p>
	Availability of location for menstrual management at all times when needed	DHS; MICS	MHM - Nepal; MIS; MPNS; UNICEF - MHM Guidance;	<p>*DHS and MICS capture if there is a private place to wash and change menstrual materials</p> <p>*MIS asks about frequency of difficulty finding place to manage menstruation, including washing cloths, storing cloths, and drying cloths, and disposing of pads; MHM - Nepal asks if there is a private place to wash</p>

			WASH-GEM; WSSCC	reusable pads *MPNS captures ability to change, dispose of, wash, and dry materials when desired *UNICEF - MHM Guidance captures ability to dispose of materials as desired *WASH-GEM captures frequency of sufficient access to location for MHM, including bins, handwashing, and privacy *WSSCC asks if there is a place at home to change menstrual materials; MPNS specifies if there is a clean place to change materials
	Availability of location for bathing and handwashing at all times when needed	No items identified	MIS; MHBSB; MPNS; UNICEF- MHM Guidance; WASH-GEM; WSSCC	*MIS captures difficulty bathing during menstruation *MPNS captures ability to wash hands when desired during menstruation *UNICEF-MHM Guidance asks about ability to wash hands as needed during menstruation *WSSCC asks if there is a place at home to clean/wash body during last period *MHBSB asks about ability to take a shower during period *WASH-GEM captures ability to access a handwashing facility with soap and water when needed **NOTE: All items in this category except for WASH-GEM are about bathing or hand hygiene during menstruation
(3) Physical accessibility and female-friendly design of WASH location	Physical accessibility/design of water source	No items identified	GESI	*GESI asks if public water points are user friendly for women, girls, and people living with disabilities, regarding weight and ease of using handles
	Physical accessibility/design of sanitation location	No items identified	ARISE; GESI; SI	*ARISE asks if it is physically challenging to access or use sanitation location, and if there is a fear of injury because of slippery conditions *ARISE asks if there are community challenges with accessibility of sanitation locations *GESI captures if public sanitation facilities are user-friendly for women, with sanitary bins and secure doors *SI asks about inability to use sanitation location because of inaccessibility *SI asks about length of distance to go to defecate
	Physical accessibility /design of menstrual management location	PMA2020	UNICEF-MHM Guidance	*PMA2020 and UNICEF-MHM Guidance ask if there is a supply of soap and water where menstruation is managed
	Physical accessibility of hygiene location	No items identified	WSSCC	*WSSCC asks if the place where participant bathes during menstruation is easy to access *Note: No items related to bathing/handwashing locations outside of menstruation
(4) Ability to access WASH materials/ resources as needed	Availability of water at home or at water point	DHS; MICS	IDM; HWISE; IWISE; Khan; Odisha - WCM; WASH-GEM; WWAP	*IDM captures frequency of having enough water to meet all personal needs, such as drinking, cooking, and washing; *HWISE and IWISE ask about frequency of main water source being limited or interrupted, and how often there has been no useable/drinkable water *HWISE captures consequences of lack of water, including not having enough to drink, changing what food is eaten, and going to bed thirsty *Khan asks if water is always available at source

				<p>*DHS, MICS, Khan and WASH-GEM ask if there has been anytime in last month where there has not been sufficient quantities of water when needed; MICS asks for the reason why the participant has been unable to collect water in sufficient quantities--this may be related to the availability of water at the water point, or it may be related to other factors, such as expense</p> <p>*Odisha - WCM captures frequency of not having enough water for needs and frequency of reducing household water use because of insufficient quantities</p> <p>*WWAP captures if sufficient water is available for household needs</p> <p>*WWAP asks qualitatively about consequences of insufficient water, such as perceived main impact</p>
Availability of water, toilet paper, or other items necessary for sanitation	No items identified	ARISE; SI		<p>*ARISE asks if water is carried to the sanitation location</p> <p>*SI asks about difficulty accessing water for urination/defecation</p> <p>*ARISE captures frequency of choosing between paying for sanitation materials and other household needs</p>
Availability of materials such as pads to manage blood flow, disposal bins for menstrual materials, or soap and water to maintain bodily hygiene or wash menstrual materials	PMA2020	ARISE; Ethiopia-SNV; MIS; MPNS; UNICEF-MHM Guidance; WASH-GEM; WSSCC		<p>*PMA2020 and UNICEF-MHM Guidance ask if there is a supply of soap and water where menstruation is managed</p> <p>*ARISE captures difficulty finding someone to help with menstruation needs</p> <p>*ARISE captures frequency of choosing between paying for menstrual materials and other household needs</p> <p>*MPNS asks about access to a basin and sufficient water to soak or wash MHM materials; WSSCC asks about a basin, water and soap</p> <p>*GESI asks if there are disposal bins at sanitation location</p> <p>*MIS asks about frequency of inability to get needed menstrual material; UNICEF-MHM Guidance and MPNS ask about ability to acquire additional materials as needed</p> <p>*UNICEF-MHM Guidance asks about ability to change and wash materials when wanted</p> <p>*Ethiopia-SNV asks open-endedly about challenges accessing materials</p> <p>*Indicator only: Whether women/girls feel they have adequate provisions for MHM (SHARE)</p> <p>*Indicator only: Women and girls in vulnerable, marginalised or special circumstances are able to access appropriate and affordable sanitary protection materials (MHM Matters)</p>
Availability of water and other materials necessary to maintain hygiene such as bathing, handwashing and washing clothes	MICS	ARISE; COVID MTRA; HWISE; IWISE; MIS; WSSCC		<p>*MICS asks about availability of water and availability of soap or soap substitutes, such as ash or sand, at handwashing location</p> <p>*ARISE captures ability to access materials like soap and water when needed</p> <p>*COVID MTRA captures availability of water and soap for handwashing at handwashing location and availability of soap and water for purchase</p> <p>*COVID MTRA captures if soap needs to be saved for purposes other than handwashing</p> <p>*HWISE and IWISE capture frequency of going without handwashing, bathing, or washing clothes due to lack of water, and ability to be sufficiently clean and groomed for community standards</p> <p>*MIS captures difficulty finding someone to help with bathing or other</p>

				menstrual needs *WSSCC asks about whether there is enough water at location for bathing
(5) Perceived quality of and/or satisfaction with WASH location/materials	Perceived quality of and/or satisfaction with water or water source	No items identified	COVID MTRA; IDM; Odisha - WCM; WWAP	*COVID MTRA captures how users rate the quality of water for drinking *Odisha-WCM captures worry over water quality and frequency of using bad water for drinking or cooking *WWAP captures satisfaction (scale from 1-5) of quality and quantity of drinking water and satisfaction with water facility
	Perceived quality of and/or satisfaction with sanitation location and materials	No items identified	ARISE; SI; WWAP	*ARISE captures satisfaction with sanitation location quantitatively; WWAP captures it qualitatively *ARISE captures if there is sufficient room inside sanitation location *SI captures difficulty finding clean place *SI captures dissatisfaction with sanitation location because of distance *SI captures worry over lack of toilet for defecation *SI and ARISE capture (dis)satisfaction due to dirty conditions at location *WWAP captures perception of shared sanitation facilities with regard to accessibility, safety, and cleanliness and satisfaction with water and sanitation facility
	Perceived quality of and/or satisfaction with location and materials for managing menstruation	No items identified	ARISE; MHM-Nepal; MPNS; UNICEF-MHM Guidance; WSSCC	*ARISE captures ability to access satisfactory place to change menstrual materials and frequency of delaying changing menstrual materials because of lack of satisfactory location; ARISE and MPNS capture satisfaction with place used to change *MPNS and UNICEF-MHM Guidance capture if location to change is clean enough *WSSCC and MPNS capture satisfaction with comfort of material *MPNS and UNICEF-MHM Guidance capture satisfaction with cleanliness of materials *UNICEF-MHM Guidance and MHM-Nepal capture if material used is preferred material
	Perceived quality of and/or satisfaction with location and materials for managing hygiene, such as bathing, handwashing, and laundry	No items identified	COVID MTRA	*COVID MTRA captures if water is too dirty to use for handwashing *COVID MTRA captures if location for handwashing is too far away
(6) Hygiene practices	Hand hygiene practices and materials	No items identified	COVID MTRA	*COVID MTRA captures frequency of washing hands, occasion of when hands are washed, and materials used to wash hands, including inside and outside the home

	Body hygiene practices and materials	INFHS	MHM-Indonesia; MHM-Nepal; MIS; MPQ	*INFHS asks if a bath is taken during menstruation *MHM-Nepal and MIS ask about frequency of bathing during menstruation, MHM-Nepal asks specifically about frequency of bathing with soap *MHM-Nepal and MPQ ask about frequency of washing genitals during menstruation; MPQ asks about frequency of using soap *MHM- Indonesia and MPQ asks about frequency of washing hands before and after changing menstrual materials
	Menstrual hygiene practices and materials	DHS; INFHS; MICS; PMA2020;	ARISE; GEAS; JMP Expert Review; MHM-Indonesia; MHM-Nepal; MPQ; SNV Ethiopia; U-Report draft note; UNICEF - MHM Guidance; WaterAid DFID	*MICS and SNV (Ethiopia) ask if materials are used to manage menstruation; DHS, INFHS, JMP Expert Review, MICS, PMA2020, UNICEF-MHM Guidance, GEAS, ARISE, MPQ, SNV Ethiopia, and WaterAid DFID ask what kind of materials are used to manage menstruation *MHM-Nepal asks if participant has ever used sanitary pads, how often they were used, and, if not, why *PMA2020, MPQ, and U-Report ask if materials are disposed of, or if they are washed and reused *MHM-Indonesia asks if the type of materials used was the same during last and second to last period *MHM-Indonesia ask about frequency of changing materials during last period; *MPQ specifies how many times materials were changed on heaviest day, and frequency of changing while away from home
Themes & Sub-Themes with Possible WASH Implications				
(A) Differential physical needs and abilities	Health concerns or disabilities that may create additional or specific WASH needs	DHS Fistula Module		
	Health concerns or disabilities that may affect ability to access WASH locations and resources or meet WASH needs	WG – SS (in DHS)		
(B) Menstrual materials disposal and hygiene	Disposing of menstrual materials	No items identified	MHM-Indonesia; MHM-Nepal; SNV Ethiopia; U-Report; WSCC	*All tools listed ask how materials are disposed of
	Menstrual material hygiene	PMA2020	MHM-Indonesia; MHM-Schoolgirls and Nuns; MPQ	*MPQ asks about the frequency of using soap/detergent for washing materials, and for menstrual cup users, if and how many times the cup was boiled *PMA2020 and MPQ ask about if menstrual materials are washed, if they are dried before re-use *MHM- Indonesia & MHM-Schoolgirls and Nuns ask how cloths / pads are washed; MHM- Indonesia asks how often cloth is washed before & after use *MPQ asks where materials are dried

Key take-home points:

- **There is no item to assess if households have access to a place for bathing/hygiene at the national level**
- No items have been identified to show ability to go to water source as needed, or whether water is available when needed
- No nationally representative items demonstrate satisfaction with WASH facilities; no items at all demonstrate satisfaction with location for non-menstrual hygiene
- Items that capture availability of locations for bathing or access to sufficient water for hygiene are specific to menstruation
- There is a substantial number of smaller-scale tools that aim to capture specific a full range of menstrual experiences and needs

Opportunities: Leveraging existing data

- To assess if women have access to supportive WASH environments to support menstruation, DHS/MICS data can be leveraged to discern the proportion of women using reusable materials that do and do not have access to water at their household, and among those who do not, the proportion that need to go over 30 minutes to access a water source for washing materials.
- In areas where MICS and PMA2020 data point to widespread use of reusable materials that need washing, items from sub-national tools that ask about washing and drying practices can point to if menstruation is being safely and hygienically managed
- Data sources outside WASH, such as the WHO Model Disability Survey or Disability Assessment Schedule, can measure prevalence of physical disabilities, which can be used to assess to what extent water, sanitation, and hygiene facilities should be made more accessible²⁶

Opportunities: New data sources

Small-scale monitoring	<ul style="list-style-type: none">● Several tools that capture menstrual experiences have been tested and validated in school settings, but questions are usable for non-school contexts. These can be tested and validated for household, workplace, or community settings● National tools that capture type of WASH facility in use do not capture if there are closer or better facilities that are not being used and why; items on satisfaction such as ARISE, SI, or WWAP can be used to see why people may choose to use other facilities
Large-scale monitoring	<ul style="list-style-type: none">● No National-level tools assess if households or individuals have access to a facility at their household for personal hygiene/ bathing other than hand washing. Access to a bathing location within the household compound has been shown to be associated with women's well-being in India.²³ An item to assess access to a hygiene facility could be tested for inclusion in national-level surveys like DHS, MICS, or PMA.● MICS data captures if there is soap or a soap substitute available at handwashing stations; items such as toilet paper or water might be needed at sanitation locations. Test adapting resource questions for sanitation.

Considerations

Ability to meet basic needs cannot be separated from other dimensions; if the physical environment is not accessible, if cultural norms prevent access, if the location is unsafe, or if the location is unaffordable, individuals may not be able to meet their basic WASH needs.

National tools capture household data. Household data may not capture an individual's ability to meet needs, as those needs may vary based on age, physical ability, health concerns, sex, etc. Individual demographic information may also be needed to capture if and how ability to meet needs varies according to intersectional characteristics such as pregnancy, sexual identity, or homelessness, which may present additional needs or barriers. Sanitation needs and requirements for satisfactory sanitation locations may vary for urination and defecation.

26. Tiberti, M. & Costa, V. Disability Measurement in Household Surveys: A Guidebook for Designing Household Survey Questionnaires. Washington DC: World Bank, 2019.

23. Caruso, B. A., Cooper, H. L., Haardörfer, R., Yount, K. M., Routray, P., Torondel, B., & Clasen, T. (2018). The association between women's sanitation experiences and mental health: A cross-sectional study in Rural, Odisha India. *SSM-population health*, 2018; 5, 257-266.

Appendix 3: Access to Resources: *Safety and Freedom from Violence*

Safety requires freedom from interpersonal and gender-based violence, including women's freedom from both violent acts and threats of violence (both physical and sexual), coercion, harassment, or force when accessing and using sanitation and hygiene locations or water collection points

Summary

Primary themes identified within the *Safety & Freedom from Violence* dimension include:

1. Perception of safety (i.e., feeling safe/fear when engaging in various WASH activities),
2. Perceived risk of physical/sexual/verbal abuse in the home or from one's family,
3. Experiences of physical/sexual/verbal abuse in the home or from one's family,
4. Experiences of physical/sexual/verbal abuse at WASH facilities/locations,
5. Safety features of the physical environment / WASH infrastructure,
6. Ability to report safety concerns, and,
7. Sexual exploitation related to WASH.

The following theme was identified that may have WASH implications:

- A. Perception of safety or experience of injury with possible WASH implications

Overall,

- No specific measures were identified that directly assess safety and freedom from violence associated with WASH at national levels. However, items from DHS/MICS could be combined with analysis and used as proxies to assess perceptions of safety when accessing water and sanitation locations (1 above) and experiences of physical/sexual/verbal abuse at WASH facilities/locations (4 above) (Details in table below).
- Perceived risk of abuse in the home (2 above) is captured by only one tool (ARISE) and only in relation to accessing sanitation, completing sanitation-related chores, or voicing sanitation-related concerns.
- Actual experiences of gender-based violence (GBV) related to WASH – either within or outside of the home (3 & 4 above) – are not well captured. One tool that does include items related to experiences of GBV does not distinguish between physical, verbal, or sexual violence. Important considerations for measuring actual experiences of GBV are addressed below.
- There are some sub-national-level tools, but no nationally representative tools, that assess safety/security features (e.g., lockable doors, sufficient lighting) of WASH infrastructure (5 above) and no measures at any level of knowledge of how to report safety (6 above) or of sexual exploitation related to WASH (7 above).

Safety & Freedom from Violence: Themes assessed in existing tools by level

Themes	Sub-Themes	Tools measuring sub-theme		Notes
		Nationally representative	Sub-National (e.g., Prog./Proj. Eval)	
(1) Perception of safety	Feeling safe/feeling fear (of being harmed, harassed, injured) going to or being at water point	DHS8; MICS <i>(See Note; no direct measure but potential proxy via analysis)</i>	GESI; SHARE; SWE; Odisha-WCM	*No <i>specific</i> nationally representative items. *Analysis opportunity: DHS/MICS item concerning feelings of safety walking in neighborhood after dark can be used in conjunction with location of water point (whether outside or inside house/compound). *SHARE is indicator only (feelings of safety when collecting water) *SWE is indicator only (number of women and girls who report improved safety and security from GBV at collection point)
	Feeling safe/feeling fear (of being harmed, harassed, injured) going to or being in sanitation location	DHS8; MICS <i>(See Note; no direct measure but potential proxy via analysis)</i>	ARISE; SHARE; SOCAT; SI; WASH-GEM; WWAP	*No <i>specific</i> nationally representative items. *Analysis opportunity: DHS/MICS/SOCAT item concerning feelings of safety walking in neighborhood after dark can be used in conjunction with location of sanitation facility (whether outside or inside house/compound). *ARISE specifies during the day vs night; “where I typically go” vs “when away from home”; verbal vs physical vs sexual violence; women-only sanitation facilities; public toilets *SHARE is indicator only (women/ girls feel safe using latrines at night)
	Feeling safe/feeling fear (of being harmed, harassed, injured) going to or being in hygiene facilities (including menstruation)	PMA2020	ARISE; MPNS; UNICEF - MHM Guidance	*ARISE and MPNS capture feeling safe while managing or in location for menstrual hygiene *ARISE specifies home vs away, and at night *Both PMA2020 and UNICEF items have binary response options (yes/no)
	Feeling safe/feeling fear when going to, speaking up in a WASH meeting	No items identified	ARISE	* ARISE captures perceived risk of harassment when going to or speaking up in a sanitation-related meeting
(2) Perceived risk of physical/ sexual/ verbal abuse in the home/ from family	Perceived risk of GBV from family/household members related to accessing water	No items identified	No items identified	
	Perceived risk of GBV from family/household members related to accessing sanitation	No items identified	ARISE	*ARISE captures perceived risk of physical abuse for going to sanitation location “without telling someone or stay out too long”
	Perceived risk of GBV from family/household members related to accessing hygiene (including	No items identified	No items identified	

	for menstruation)			
	Perceived risk of GBV from family/household members related to WASH responsibilities/norms	No items identified	ARISE	*ARISE assesses perceived risk of “being hit by husbands or family members” if women do not complete “sanitation-related chores” or argue with family members about “sanitation issues”
	Perceived risk of GBV from family members related to participation in WASH committees/meetings/events	No items identified	ARISE	*ARISE assesses perceived risk of “being hit by husbands or family members” if women argue with community members about “sanitation issues”
(3) Experiences of physical/ sexual/ verbal abuse in the home/ from family	GBV from family/household members related to accessing or allocating water at home	No items identified	GESI; Odisha-WCM	*GESI refers to “GBV”; does not specify verbal, physical, sexual *Odisha-WCM captures verbal abuse while doing “water-related work”
	GBV from family/household members related to sanitation	No items identified	No items identified	
	GBV from family/household members related to hygiene (including menstruation)	No items identified	No items identified	
	GBV from family/household members related to WASH responsibilities/norms	No items identified	No items identified	
	GBV from family/household members related to participation in WASH committees/meetings/events	No items identified	No items identified	
(4) Experiences of physical/ sexual/ verbal abuse at WASH facilities/ locations	GBV when accessing water points	DHS8; MICS <i>(See Note; no direct measure but potential proxy via analysis)</i>	GESI; SWE	*No specific nationally representative items. *Analysis opportunity: Winter & Barchi (2016) use items in Kenya DHS dataset to assess odds of experiencing violence among those practicing open defecation compared to those who were not. Could mimic analyses assessing odds of experiencing violence by those who access water points outside vs. inside household /compound. *GESI refers to “GBV”; does not specify verbal, physical, sexual *SWE refers to “bullying at water point”; “harassment while walking back home”; and “violence due to insufficiency of water (no. of people fetching per water source)”
	GBV when accessing sanitation or hygiene locations	DHS8; MICS <i>(See Note; no direct measure but potential proxy via analysis)</i>	ARISE; UIS	*No specific nationally representative items. *Analysis opportunity: Winter & Barchi (2016) use items in Kenya DHS dataset to assess odds of experiencing violence among those practicing open defecation compared to those who were not. Could mimic analyses at scale. *ARISE captures sexual, physical, and verbal abuse (separately) when going to sanitation location *UIS is indicator only (% of women raped in connection to use of

				public latrines).
	GBV when accessing hygiene locations (including for menstruation)	No items identified	No items identified	
(5) Safety features of the physical environment/WASH infrastructure	Safety/security features at water points	No items identified	No items identified	
	Safety/security features at sanitation location	No items identified	ARISE; GESI; WWAP	*GESI captures “doors, inside and outside lighting” for public sanitation facilities *ARISE captures “lockable” doors and “sufficient lighting on the way to this sanitation location” *WWAP qualitatively captures “doors can be latched, adequate lighting” for sanitation facility and for communal sanitation facilities
	Safety/security features at place for hygiene (including menstruation)	PMA2018-Niger	No items identified	*PMA2018-Niger captures whether place for managing menstrual hygiene was lockable
(6) Ability to report safety concerns	Awareness of existing mechanisms for reporting	No items identified	Recommended indicator only; no items identified	*SHARE is indicator only (women know where to go/make a complaint subjected to violence)
	Comfort with using reporting mechanisms, including belief in being listened to and lack of fear of reprisal	No items identified	No items identified	
(7) Sexual exploitation related to WASH	Experience of sexual exploitation related to WASH	No items identified	No items identified	
Themes & Sub-Themes with Possible WASH Implications				
(A) Perception of safety or experience of injury with possible WASH implications	Perception of safety inside and outside the home	DHS8	SOCAT	*DHS8 and SOCAT capture perception of safety in neighborhood. *SOCAT captures if neighborhood is peaceful or violent *SOCAT captures perception of safety in home
	Experience of injury or incident inside and outside the home	DHS8	SOCAT	*DHS8 Accidents and Injuries Module captures if non-road traffic related incidents have led to injury or trauma, and how the injury occurred. *SOCAT captures if participant has been a victim of a mugging or violent crime

Key take-home points:

- No specific measures to assess experience of GBV related to sanitation. Measures exist to assess GBV linked to water; however, it is unclear if tools have produced data and at what scale.
- Most items identified are used for data collection at sub-national level (for programs, projects, research).
- Measures of safety, whether perceived or actual, tend to focus on safety while accessing WASH facilities/locations and largely overlook violence related to WASH responsibilities or norms or violence related to participation in WASH committees/meetings/events.
- Safety and freedom from violence related to hygiene is addressed, but only in relation to menstruation and nothing in relation to bathing or household hygiene responsibilities (washing clothing, utensils, etc.)
- No tools directly capture sexual exploitation as it relates to WASH; some tools ask about “GBV” broadly, which - depending on how it is operationally defined - may or may not capture this type of violence. Research has shown that sexual exploitation has occurred linked to water and menstruation material access and may deserve further research to determine how to assess.³⁷⁻⁴¹

Opportunities: Leveraging existing data

Despite lack of specific measures, DHS data can be leveraged for various analyses.

- Proportion of women who do not feel it safe to walk in neighborhoods after dark and do not have access to a sanitation facility at home.
- Proportion of women who do not feel it safe to walk in neighborhoods after dark and do not have access to a water facility at home.
 - National-level monitoring does not ask if people have bathing/washing areas and is not routinely reported. Addition of a hygiene location item could enable this analysis related to hygiene. The sanitation insecurity research asks about bathing location and could be leveraged elsewhere.^{23,42}
- Odds of experiencing violence among:
 - Those practicing open defecation compared to those who are not
 - Those with a sanitation facility in the home compared to those without
 - Those with a source of water in home/at home compound compared to those without
- Examples of DHS analyses related to violence that could be mimicked at scale:
 - E.g., Winter and Barchi, 2015, which uses data from DHS household responses on sanitation locations and the gender-based violence module in Kenya to demonstrate an association between open defecation and violence against women³²
 - E.g., Jadhav et al., 2015, which uses DHS household responses to demonstrate relationship between sanitation locations and gender-based violence in India³¹
- Odds of having been involved in an incident that caused injury or trauma using data from DHS8-Accidents and Injuries Module among:
 - Those with a sanitation facility in the home compared to those without
 - Those with a water facility at home compared to those without

Opportunities: New data sources

Small-scale monitoring	<ul style="list-style-type: none"> • Programs that aim to monitor changes in perceived safety of sanitation facilities may consider utilizing the ARISE scale or items from WASH-GEM for safety and freedom from violence • Practitioners aiming to conduct formative research to identify sources of fear or perceived safety related to WASH may consider utilizing the GESI Index for WASH, which is designed to be completed using data collected from focus group discussions
Large-scale monitoring	<ul style="list-style-type: none"> • Test item from PMA2020 at large scale (DHS/MICS 2027): ‘<i>While managing your menstrual hygiene, was this place [sanitation facility] safe?</i>’ • Potential to reformulate existing DHS/MICS item ‘<i>During your last menstrual period, were you able to wash and change in privacy at home?</i>’ to capture privacy and safety independently. (e.g., <i>During your last menstrual period, was the place you washed and changed at home...private? (y/n) ...safe? (y/n)?</i>) • Potential to add question on where bathing location is (inside or outside home/compound) to enable additional analyses (See Sanitation Insecurity tool).

Considerations

Data collection efforts that seek to capture direct experiences of violence should take care to adhere to ethical protocols and refer to best practices (e.g., Ellsberg & Heise).⁴³

37. Avello P. Sex for water is sextortion, and it is a crime. siwi.org: SIWI; 2018.35. Kenya Water and Sanitation Civil Society Network (KEWASNET), African Civil Society Network on Water and Sanitation (ANEW). Sex for water project: Promoting safe space for girls and young women in Kibera project. Final baseline survey report.
38. Kenya Water and Sanitation Civil Society Network (KEWASNET), African Civil Society Network on Water and Sanitation (ANEW), 2020.
39. Mason L, Nyothach E, Alexander K, et al. 'We keep it secret so no one should know'—A qualitative study to explore young schoolgirls attitudes and experiences with menstruation in rural Western Kenya. *PLoS One* 2013; 8(11): e79132.
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23. Caruso B. A, Cooper HLF, Haardorfer R, et al. The association between women's sanitation experiences and mental health: A cross-sectional study in Rural, Odisha India. *SSM Popul Health* 2018; 5: 257-66.
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32. Winter, S. C., & Barchi, F. Access to sanitation and violence against women: evidence from Demographic Health Survey (DHS) data in Kenya. *International journal of environmental health research*, 2015; 26(3), 291-305.
31. Jadhav A, Weitzman A, Smith-Greenaway E. Household sanitation facilities and women's risk of non-partner sexual violence in India. *BMC Public Health* 2016; 16(1): 1139.
43. Ellsberg M, Heise L. Researching violence against women: A practical guide for researchers and activists. Washington DC: PATH, 2005.

Appendix 4: Access to Resources: *Privacy*

Privacy refers to an individual's ability to feel free from observation or being heard or disturbed by others⁴⁴ when accessing and utilizing sanitation locations and water sources, including for hygiene (e.g. menstruation, bathing) purposes.

Summary

Primary themes identified within the *Privacy* dimension include:

1. Water-related privacy
2. Sanitation-related privacy
3. Menstruation-related privacy
4. Hygiene- (bathing, laundry) related privacy
5. Impacts of lack of privacy

Overall,

- Items from nationally-representative surveys were identified for privacy related to sanitation and menstruation. There were no items identified that ask about the privacy of water points, hygiene-related privacy or impacts from a lack of privacy.
- Most identified privacy items ask about privacy while using sanitation locations (theme 2) or taking care of menstrual needs (theme 3). The ability to lock doors may be considered a proxy for privacy, but does not capture the user perspective about the facility, the facility location, and privacy accessing the location, or if other features of the structure violate privacy (holes in walls, etc.). Some tools more specifically ask about whether participants can be seen while meeting sanitation needs, which is also more inclusive of privacy among those who openly defecate and those whose sanitation facilities may have lockable doors but do not protect the privacy of the users (holes in walls, no roof, actions inside audible from outside).
- Items on menstruation cover not only being seen while changing menstrual materials, but also the ability to keep the menstrual materials themselves private (whether or not people may see menstrual materials while being carried to a sanitation facility, washed, or disposed of).

Only sub-national-level tools aim to capture impacts of lacking privacy.

Privacy: Themes assessed in existing tools by level				
Themes	Sub-Themes	Tools measuring theme		Notes
		Nationally representative	Sub-National (e.g., Prog./Proj. Eval)	
(1) Water-related privacy	Perceived privacy of water point or satisfaction with privacy of water point	No items identified	No items identified	*Privacy of water point may be important for bathing or other hygiene needs or to adhere to social norms, but no items currently exist to measure it
(2) Sanitation-related privacy	Perceived privacy of sanitation location or satisfaction with privacy of sanitation location	No items identified	ARISE; WASH-GEM; WWAP	*ARISE asks if the sanitation location is located in a private place *WWAP asks about satisfaction with sanitation location based on if it can ensure privacy (in addition to other criteria) and whether existing facilities protect the privacy of users
	Ability to lock sanitation facility	PMA2018-Niger	ARISE; Barnes; WWAP	*The ability to lock doors has been used as a proxy for both privacy and safety
	Frequency of using insufficiently private location or difficulty finding private location	No items identified	ARISE; SI	*ARISE items ask about sanitation locations both at and away from home
	Concern or experience of being seen or heard while using sanitation location experience	No items identified	ARISE; SI	
(3) Menstruation-related privacy	Perceived privacy while changing menstrual materials/difficulty finding a private place to change menstrual materials	DHS; MICS; PMA2018-Niger	ARISE; JMP - MH Review; WWAP; UNICEF- MHM Guidance	*DHS and MICS ask whether there is a private place to change menstrual materials; *ARISE asks about difficulty finding a place to change menstrual materials and having to use places that are sufficiently or insufficiently private; *WWAP asks if the facility used is private and able to be locked
	Concern or experience of being seen or heard changing or managing menstrual hygiene (including washing, disposing, drying materials)	No items identified	ARISE; SNV Ethiopia; MHM -Indonesia; MHM - Nepal; MPNS; MPQ; WSCC	*MPNS and ARISE ask about being seen washing menstrual materials *Multiple tools ask about location of drying menstrual cloths, specifying in either the question or the response options whether they are dried in the sunlight or whether they are covered or hidden to dry
	Concern over menstrual status being revealed through materials or blood being seen, including in waste bins or waste water	No items identified	ARISE	*ARISE asks about concern over blood being seen in the sanitation location; MPNS asks about used menstrual materials being seen where disposed of

(4) Hygiene- (bathing, laundry) related privacy	Perceived privacy of hygiene location or satisfaction with privacy of water point	No items identified	WASH-GEM	
(5) Impacts of lack of privacy	Frequency of worry over being talked about by others if seen	No items identified	SI	
	Frequency of interrupted urination or defecation due to loss of privacy	No items identified	ARISE; SI	*ARISE asks about needing to stop urinating or defecating because someone came near; SI asks about the need to stand while urinating because someone came near
	Frequency of delaying urination or defecation because of lack of privacy	No items identified	SI	*Asks about going back and forth to defecation location in search of privacy and suppressing the urge to urinate or defecate because of the presence of others
	Frequency of delaying meeting hygiene needs (including changing menstrual materials, bathing) because of lack of privacy	No items identified	No items identified	

Key take-home points:

- The ability to lock a door is a commonly used proxy for privacy, both at sanitation locations and locations for changing menstrual materials. Measures that ask about user perception of privacy may more accurately capture true experience of privacy and could be tested.
- Almost all hygiene-related questions specify menstrual hygiene; there are no questions specific to bathing or other hygiene needs.
- DHS and MICS ask whether there is a private place to change menstrual materials while at home. More specific (non-double-barreled) questions were asked as a part of PMA 2020 in 2018. While the refined questions have been noted in the UNICEF's MHM guidance document, they have since been phased out of PMA surveys. Thus, while privacy questions do exist related to menstruation, they may need refinement.
- Whether bathing or washing is done at water points is context specific, but there are no questions that cover privacy at water points for where it may be relevant.

Opportunities: Leveraging existing data

- The DHS question assessing privacy related to menstruation can be used, however there remain questions about the quality of the question adopted.

Opportunities: New data sources

Small-scale monitoring	<ul style="list-style-type: none">• Programs that aim to provide menstrual materials to enable girls/women to stay at school or work may want to consider the full breadth of menstrual needs, including privacy needs related to their sanitation location, to ensure that changing, washing, and/or disposing of materials can be done in a dignified manner (Covered in ARISE and MPNS).
Large-scale monitoring	<ul style="list-style-type: none">• Questions on perceived privacy for changing menstrual materials (DHS, MICS), could be adapted and tested for sanitation facilities and in relation to hygiene.• While some questions exist to determine if a space is private or not, questions could be developed to identify how lack of privacy affects ability to use locations when needed, and what coping strategies may be adopted.

Considerations

There are additional privacy concerns while menstruating that are captured in tools and not included here because not specific to WASH (e.g. questions on storing or carrying menstrual materials).

A lockable door for a sanitation facility may be a necessary but insufficient proxy for privacy, if the sanitation location is otherwise poorly constructed, with gaps in doors or badly placed windows.

Questions that ask if a location is private may be capturing two separate ideas: whether the location itself is situated in a private place, and whether the location's physical infrastructure prevents others from seeing or hearing within.

Privacy concerns are frequently entangled with safety concerns and items such as locking doors may capture elements of both that can't be clearly distinguished. Respondents may also conflate privacy and safety when answering questions on location.⁴⁵ Questions around privacy need more specificity and may benefit by asking about being seen or heard.

Most privacy items are relevant to those who are able to manage hygiene or sanitation needs independently. Dependents who rely on others to help them meet their sanitation needs, such as infants, the elderly, or disabled persons, may have additional privacy needs that cannot be captured through proxies such as locks.

44. Sclar, G et al. Exploring the relationship between sanitation and mental and social well-being: A systematic review and qualitative synthesis. *Social Science and Medicine*, 2018; 217 121-134.

45. Larson, E et. al. Capturing menstrual health and hygiene in national surveys: Insights from Performance Monitoring and Accountability 2020 resident enumerators in Niamey, Niger. *Journal of Water, Sanitation and Hygiene for Development*; 2021

Appendix 5: Access to Resources: *Health*

Informed by the WHO definition of health as “a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity,”⁴⁶ health as it relates to WASH includes physical, mental, and social well-being as they affect and are affected by WASH options and conditions. Health can be viewed as both an outcome of WASH, such as illness linked to unsafe water consumption, and as a resource for accessing WASH, such as the physical ability to walk to water points or sanitation facilities.

Summary

Primary themes identified within the *Health* dimension include:

1. Perceived illness or experience of illness related to WASH conditions
2. Fear of harm from others while accessing WASH
3. Fear of injury while accessing WASH
4. Experience of injury while accessing WASH
5. Mental wellbeing related to WASH insecurity
6. Influence of WASH on social health
7. Experiences and consequences of employing WASH-related coping strategies
8. Impact of health on ability to access WASH

The following theme and sub-themes were identified that may have WASH implications:

- A. Health concerns with possible implications for WASH
- B. Experience of injury with possible implications for WASH

Overall, there were no items from nationally-representative surveys identified for any of the above noted themes. There are limited questions focused on the direct relationship between WASH and health.

- While research has investigated the relationship between water and health, there were few items identified that ask about WASH and health directly and most focus on or perceptions of health related to WASH. The absence of questions that directly tie elements of WASH to experiences of health may be because studies that focus on this relationship ask WASH and health questions independently and establish associations via statistical analyses and comparisons.
- Most questions about WASH-related health directly are from recently developed scales specific to sanitation or menstruation and tend to focus concerns or fears of harm from others or assault while using WASH facilities, though any questions on direct experiences of harm from others or assault are covered separately, under “Safety and Freedom from Violence.”
- Similarly, there are few questions on experiences of injury due to WASH conditions, but a variety of questions asking about fear of injury or stress related to the possibility of injury.

- Mental health related to specific elements of WASH insecurity, such as lack of availability of sufficient quality or quantities of water, the absence of proper and satisfactory sanitation or hygiene locations, ability to pay for WASH needs, and the physical conditions of WASH facilities and materials that may render them unsatisfactory, is well-covered by existing sub-national-level tools.
- Other than one question on exclusion and stigmatization due to water insecurity, there are no questions in tools that ask about experiences of social health related to WASH.
- Inability to access WASH as needed (whether due to lack of availability, lack of time, perceived lack of safety, or any other reason) may result in coping mechanisms such as avoiding food or water or suppressing the urge to urinate or defecate to avoid needing the use of WASH facilities). One tool asks about how often these coping mechanisms are utilized while another asks about health consequences as a result of these coping mechanisms.
- While there are many themes and related measures assessing how WASH influences health, there are far fewer measures assessing how health status can WASH access and behaviors. There are a few questions that ask about health issues such as incontinence, which has implications for WASH needs, and ability to squat to defecate without pain. There is an absence of questions that cover disability and how various disabilities may affect WASH access, including walking to water points or sanitation locations, entering accessible latrines, or carrying water.

Health: Themes assessed in existing tools by level

Themes	Sub-Themes	Tools measuring theme		Notes
		Nationally representative	Sub-National (e.g., Prog./Proj. Eval)	
(1) Perceived illness or experience of illness related to WASH conditions	Health problems or illness directly related to poor water quality	No items identified	WWAP	* WWAP analysis instructions call for disaggregation by sex and age. Questions are open-ended for participants to describe specific health problems.
	Health problems or illness directly related to insufficient water quantity	No items identified	No items identified	
	Health problems or illness related to lack of or poor sanitation	No items identified	WWAP	*Analysis instructions for the WWAP call for disaggregation by sex and age. Questions are open-ended for participants to describe specific health problems.
	Perception of health or illness related to using sanitation location	No items identified	ARISE; SI	*ARISE participants are asked if they believe their WASH location made them ill and if sanitation locations are clean enough to maintain health *SI asks participants if they worry they will be made ill by urinating/defecating on top of someone else's urine/feces.
	Experience or perception of illness related to maintenance/cleaning of sanitation location	No items identified	ARISE	*ARISE participants are asked if using or cleaning a sanitation location has made them ill
	Experience or perception of illness related to lack of or poor hygiene (bathing, washing clothes, or other hygiene needs)	No items identified	No items identified	
(2) Fear of harm from others while accessing WASH	Fear of being harmed by others while accessing water point	No items identified	No items identified	
	Fear of being harmed by others while urinating/defecating or accessing sanitation location	No items identified	ARISE; SI	*ARISE asks about confidence in using sanitation location without being harmed from others or fear of being harmed. Fear of harm questions ask about physical harm and assault as well as sexual harassment. <i>(These items are cross-listed in Safety & Freedom from Violence.)</i>
	Fear of being harmed while changing menstrual materials	No items identified	MPNS	

	Fear for safety of women/girls while going to water points	No items identified	No items identified	
	Fear for safety of women/girls while going to sanitation locations	No items identified	ARISE	
	Fear for safety of women/girls while going to menstrual management locations	No items identified	No items identified	
	Fear for safety of women/girls while going to hygiene locations	No items identified	No items identified	
(3) Fear of injury while accessing WASH	Fear of injury due to condition of water point, such as slipperiness, falling, or presence of animals/insect	No items identified	Odisha Water Module	*The Odisha-WCM asks about fear of falling while fetching water and fear of animal/insects
	Fear of injury due to condition of sanitation location, such as slipperiness, falling, or presence of animals/insects	No items identified	ARISE; SI	*ARISE asks about ability to access location without fear of injury as well as asking about frequency of feeling fear. SI asks about fear of falling and animals/insects
	Fear of injury due to condition of menstrual management location, such as slipperiness, falling, or presence of animals/insects	No items identified	MPNS	
	Fear of injury or harm due to condition of hygiene location (for bathing, washing clothes, or other hygiene needs)	No items identified	No items identified	
(4) Experience of injury while accessing WASH	Experience of injury or harm while accessing water point	No items identified	Odisha-WCM	* Odisha-WCM asks about wounds on feet from water fetching
	Experience of injury or harm related to water carrying			
	Experience of injury or harm while accessing sanitation location	No items identified	No items identified	
	Experience of injury or harm while accessing hygiene location (for bathing, washing clothes, or other hygiene needs) or using hygiene materials	No items identified	MIS	*MIS asks about wounds on thighs from menstrual cloth/belt
(5) Mental wellbeing related to WASH insecurity	Worry/anger/stress related to having or obtaining water of sufficient quality, in sufficient quantities, to meet household needs	No items identified	HWISE; IWISE; WASH-GEM	

	Worry/anger/stress related to the ability to pay for water	No items identified	Odisha-WCM	*Odisha-WCM asks about worry related to inability to build or maintain water source
	Fear related to water point because of animals, insects, ghosts, or the dark	No items identified	Odisha-WCM	
	Anger/shame related to problems with water generally	No items identified	IWISE	
	Worry/anger/stress related to meeting sanitation needs, including availability of proper place to urinate or defecate	No items identified	SI; WASH-GEM	
	Stress/anxiety related to paying for building/maintenance of sanitation facility	No items identified	SI	
	Fear related to sanitation location because of animals, insects, ghosts, or the dark	No items identified	SI	
	Stress related to cleanliness of sanitation location	No items identified	SI	
	Fear related to social consequences of sanitation location, such as being seen or burdening others	No items identified	SI	
	Stress/anxiety or embarrassment related to sanitation conditions in household or community	No items identified	ARISE	
	Stress/anxiety related to supervision of dependents when taking care of sanitation needs	No items identified	SI	
	Stress/tension/fear when managing menstruation (generally)	No items identified	ARISE; WASH-GEM	
	Worry over menstrual materials not working as intended, such as moving around or blood passing through to outer garments	No items identified	MPNS	
	Worry over changing and disposal of menstrual materials	No items identified	MPNS	*The MPNS covers a variety of concerns related to changing menstrual materials; questions ask about worries related to the inability to change materials when needed, the possibility of being seen by others while changing, where to dispose of materials, and others seeing used materials after disposal

	Worry about how to get additional menstrual materials when out	No items identified	MPNS: UNICEF-MHM Guidance	
	Worry/anger/stress over meeting hygiene needs, including availability of location and materials for hygiene purposes (including bathing, washing clothes, etc.)	No items identified	WASH-GEM	*WASH-GEM captures if dealing with daily bathing needs causes stress
(6) Influence of WASH on social health	Frequency of exclusion or stigmatization due to problems with water	No items identified	HWISE	
	Frequency of exclusion or stigmatization due to sanitation location	No items identified	No items identified	
	Frequency of exclusion or stigmatization due to hygiene (bathing, washing clothes, or other hygiene practices)	No items identified	No items identified	
(7) Experiences and consequences of employing WASH-related coping strategies	Frequency of suppressing the urge to urinate or defecate or avoiding food/water to avoid the need to urinate or defecate	No items identified	SI	
	Frequency of illness due to suppressing the urge to urinate or defecate	No items identified	ARISE	
	Frequency of feeling unwell due to withholding water or food to avoid urination or defecation	No items identified	ARISE	
(8) Impact of health on ability to access WASH	Difficulty walking to or accessing a water point, or fetching/carrying water due to physical health or ability	No items identified	Odisha-WCM	*Odisha-WCM asks about difficulty walking to collect water, as well as difficulty or pain lifting, carrying, pumping, or drawing water
	Difficulty walking to or accessing a sanitation location due to physical health or ability	No items identified	No items identified	
	Difficulty controlling the urge to urinate or defecate	No items identified	SI	
	Difficulty/pain squatting to defecate	No items identified	SI	
	Difficulty walking to or accessing a hygiene location due to physical health or ability	No items identified	No items identified	

Themes & Sub-Themes with Possible WASH Implications				
(A) Health concerns with possible implications for WASH	Difficulty with self-care such as bathing or washing oneself or accessing water and sanitation facilities independently	WG – SS in DHS; MICS		*Analysis Opportunity: Questions that cover substantial physical disability may be used with questions on accessibility or availability of WASH locations to determine if WASH locations are accessible for all members of a household
	Health concerns or illnesses or physical disabilities that may create additional WASH needs or affect ability to manage WASH needs	DHS Accidents; WG – SS in DHS; DHS Fistula Module		*Analysis Opportunity: Questions that cover substantial physical disability, injuries, or illnesses may be used with questions on accessibility or availability of WASH locations to determine if WASH locations are accessible for all members of a household
	Significant illness or injury that makes it impossible or difficult to perform paid or unpaid labor	DHS8-Accidents	IDM	*Unpaid labor could include WASH-related work.
	Illness, injury, or other physical or mental harm acquired from unpaid domestic work or caring for people and fear of such harm happening in the future	No items identified	Oxfam	*Analysis Opportunity: If the unpaid labor that caused the injury or harm is related to water collection or other WASH-related chores, it could be analyzed in the context of distance from home
	Wounds from menstrual cloth/belt that make it hard to work	No items identified	MI	*Wounds could impact WASH-related work
(B) Experience of injury with possible WASH implications	Experience of injury or incident inside and outside the home	DHS8-Accidents		*DHS8 Accidents and Injuries Module captures if road or non-road traffic related incidents have led to injury or trauma, and how the injury occurred. *Analysis Opportunity: Questions that cover injury or illness may be used with questions on water quality or presence of water source/sanitation facility at home to determine if distance to WASH location or water quality is associated with illness- or injury-causing incidents

Key take-home points:

- There are no nationally representative tools that have items capturing the direct relationship between WASH and any aspect of health (physical, mental, or social), or coping mechanisms in response to lack of satisfactory WASH
- Most programmatic level or sub-national tools focus on sanitation or menstruation, particularly as they contribute to injury or mental health

Opportunities: Leveraging existing data

- One nationally representative item (MICS) covers difficulty with self-care such as bathing or washing oneself. Data could be disaggregated by WASH access to determine what proportion of those indicating difficulty need to seek water and sanitation facilities outside their household. Results could give some indication of how WASH access and environments may be impacting those with unique care needs.
- Odds of having been involved in an incident that caused injury or trauma using data from DHS8-Accidents and Injuries Module among:
 - Those with a sanitation facility in the home compared to those without
 - Those with a water facility at home compared to those without

Opportunities: New data sources

Small-scale monitoring	<ul style="list-style-type: none"> • Programs interested in the influence of sanitation or menstruation on stress or mental health may consider using items from the ARISE, MPQN, SI or WASH-GEM. Some of these items may be easily adaptable for water and hygiene • Programs interested in how people cope with lack of access to satisfactory WASH or try to circumvent the need for water, sanitation, or hygiene facilities may consider ARISE or the SI.
Large-scale monitoring	<ul style="list-style-type: none"> • Develop and test items on perceived relationship between illness and WASH practices/options • Identify health-related priorities and assess which items from existing tools (ARISE, MPNS, Sanitation Insecurity Scale, HWISE) may be used/adapted for national-level surveys. • Develop and test items on physical capabilities and ability to access WASH facilities/resources

Considerations

It is difficult to accurately capture the impact of WASH on health rather than the perceived impact of WASH on health without specific diagnostic tests or modeling the impact of WASH as an exposure on health outcomes. Understanding of how WASH impacts health could also be improved if those studies that assessed the impact of WASH conditions and behaviors on health outcomes would report sex-disaggregated outcomes. As this search did not capture questions that ask only about experiences of diarrhea, respiratory illness, etc., the actual scope of data collection at the nationally representative level may be better than it appears based on this table.

Smaller scales that ask about perception of health should not be discounted. Even if a health outcome can't be definitively associated with a WASH exposure, belief that dirty water or sanitation locations are negatively affecting health may affect consumers' satisfaction and use, and data on these beliefs may guide interventions.

46. World Health Organization. Preamble to the Constitution, adopted by the International Health Conference held in New York 19 June to 22 July 1946. *The First Ten Years of the World Health Organization 1946.*

Appendix 6: Access to Resources: *Time & Labor*

'Time and labor' refers to individuals' time and labor - paid or unpaid - spent on WASH-related tasks and activities and meeting their own WASH-related needs, as well as satisfaction with and control over the time and labor spent.

Summary

Primary themes identified within the *Time & Labor* dimension include:

1. Time spent accessing/using WASH services/facilities
2. Time spent on WASH-related chores/maintenance
3. WASH-related labor
4. Labor delegation for WASH- related chores
5. Control over time and labor spent on WASH activities

The following themes were identified that may have WASH implications:

- A. Time spent on activities with possible WASH implications
- B. Labor delegation for household chores with possible WASH implications

Overall, the emphasis of existing tools is on absolute time spent and who is “usually” tasked with certain chores; very few items attempt to measure agency in relation to the time or labor spent on WASH activities or the perceived inequity of WASH-related labor.

- The most commonly assessed theme is actual time spent on WASH. Specifically, for the ‘time spent accessing WASH services/facilities’ theme, water is a strong focus on time spent collecting water. Several nationally representative tools capture time spent collecting water, whereas time spent on sanitation and hygiene activities is only measured at the sub-national level.
- Time spent on WASH-related chores/maintenance is not captured directly by any tools at any level; however, time spent on water treatment may be approximated by leveraging existing data from DHS/MICS.
- WASH-related labor, which includes items that ask simply what activities are required in order to access WASH or maintain WASH resources/facilities, is only measured at the sub-national level.
- Labor delegation for WASH-related chores again has a strong focus on who usually collects water or who is expected to collect water; who usually or is expected to complete other WASH-related chores as well as perceived burden of WASH-related chores (including perceived burden of water collection) are captured only at the sub-national level.
- Control over time and labor spent on WASH activities is not directly captured. However, items related to satisfaction with time required to complete specific WASH activities, ability to access WASH when needed/without delay, and opportunity costs due to WASH conditions

are all indicative of control. For example, “miss[ing]” out on other activities” due to time burden of WASH activities demonstrates that the respondent does not have the agency/ autonomy to make alternative choices concerning their time or labor.

- Finally, several tools captured time spent on and who is responsible for a variety of household chores that are not directly related to WASH, but may have important implications (e.g., tasks that require water; tasks that may be necessary for clean water such as collection of firewood, etc.); these are included below in grey.

Time & Labor: Themes assessed in existing tools by level				
Themes	Sub-Themes	Tools measuring sub- theme		Notes
		Nationally representative	Sub-National (e.g. Prog./Proj. Eval)	
(1) Time spent accessing/using WASH services/facilities	Time spent collecting water	DHS8; ELMPS; INFHS; JMP Core; UNPS; LSMS; MICS; PMA2020;	ARISE; GESI; HWISE; IDM; Oxfam; UIS; WASH-GEM; WWAP	*LSMS separately specifies time during dry season and time spent waiting out of total number of minutes *PMA2020 separately specified time during dry and wet season *GESI specifies preferences given to PLWD, elderly, women, men in queues at water points
	Time spent on accessing and using sanitation location	No items identified	ARISE; SI	
	Time spent on hygiene (including menstruation)	No items identified	MPQ	
(2) Time spent on WASH-related chores/maintenance	Time spent on water treatment/management	DHS8; MICS;	IDM; WWAP	*All tools listed here ask about water treatment method and do not directly capture time spent *Analysis required to get at themes. * Analysis opportunity: Assigning average time required for a given method may provide an estimate of time spent on water treatment.
	Time spent building, cleaning, maintaining, repairing sanitation and/or hygiene facilities	No items identified	No items identified	
	Time spent caring for the sanitation or hygiene needs of others (including child feces management)	No items identified	No items identified	
	Time spent caring for dependents ill from WASH-related diseases	No items identified	SWE	*SWE captures caring for elders/children falling sick due to waterborne diseases

(3) WASH-related labor	Tasks required for collecting water	No items identified	EWI; WWAP; Odisha-WCM	*EWI captures participation in collection of water
	Tasks required for sanitation	No items identified	ARISE; COVID-19 MTRA; EWI	*ARISE captures carrying water to sanitation location and assisting dependents with sanitation. EWI captures maintenance of household toilet. COVID-19 MTRA captures tasks for disposing of child stools
	Tasks required for hygiene (including menstruation)	No items identified	EWI	*EWI captures maintenance of hygiene facilities
(4) Labor delegation for WASH-related chores	Who usually collects or is expected to collect water for the household	DHS8; JMP Core; MICS; INFHS; LSMS	Oxfam; GESI; WWAP; EWI; SWE;	*LSMS specifies during dry season *GESI specifies gender balance
	Perceived inequity of collecting water	No items identified	Recommended indicator¹, but no items identified	*UIS include an indicator for perceived burden of collecting water on women and girls, specifically
	Use of labor-saving devices by women for collecting water	No items identified	GESI	
	Who usually manages or is expected to manage water for the household	No items identified	WWAP; UIS	
	Perceived inequity of managing water	No items identified	No items identified	
	Who usually completes or is expected to complete sanitation-related chores/work	No items identified	WWAP; ARISE	*WWAP captures cleaning facilities *ARISE captures cleaning facilities, accompanying dependents to urinate/defecate, clean feces in the home/compound, clean clothes or children dirty from sanitation conditions, someone to assist with chores, acceptability of men/women doing latrine construction/repairs
	Perceived inequity of sanitation-related chores/work	No items identified	No items identified	
	Who usually completes or is expected to complete hygiene-related chores	No items identified	ARISE; SHARE	*ARISE captures supporting women/girls in managing menstruation *SHARE captures “engagement of men in hygiene-related activities”
	Perceived inequity of hygiene-related chores	No items identified	No items identified	
(5) Control over	Satisfaction with time or labor required for water collection	No items identified	WWAP; SWE;	*WWAP measures perceived degree of “difficulty” in collecting water

time and labor spent on WASH activities			Odisha-WCM	*SWE captures “long walking distance of the source from home” *Odisha-WCM captures having to queue for a “long time”; fetch water “very far away”; “water workload, like fetching, is high”; worry about taking “too much time”
	Satisfaction with time or labor required for water treatment/management	No items identified	No items identified	
	Satisfaction with time or labor required for accessing and using sanitation location	No items identified	ARISE	*ARISE measures agreement with “defecation process took a long time...”; “takes too much time to access and use...”; “have to rush when using...”; “scolded for taking too much time...”
	Satisfaction with time or labor required for hygiene (including menstruation)	No items identified	ARISE	*ARISE measures agreement with wanting more time to “meet my menstruation-related needs”
	Ability to access water when needed/without delay	No items identified	GESI; SWE; Odisha-WCM	*GESI captures fetching water “at odd hours” *SWE captures water collection “too early in the day or too late at night” *Odisha-WCM captures “trouble finding someone to watch dependents” to fetch water and “could not get water when needed”
	Ability to access sanitation when needed/without delay	No items identified	ARISE; SI; WWAP	*ARISE captures men/women delaying going to sanitation location due to responsibilities; having someone to help with chores to access sanitation when needed *SI captures ability to access “when workload was high”, “at certain times of day”, and “trouble finding someone to watch dependents” *WWAP captures ability to use sanitation facility and communal sanitation facility “without having to wait”
	Ability to access hygiene (inc. menstruation) when needed/without delay	No items identified	COVID-19 MTRA	*COVID-19 MTRA captures lack of time as a reason for not washing hands
	Opportunity cost due to water conditions	No items identified	HWISE; IWISE; SWE; Odisha-WCM	*HWISE and IWISE capture changing “schedules or plans due to problems” with water situation *SWE captures loss of work/income due to caring for elders/children sick from waterborne diseases *Odisha-WCM captures having to leave dependents unattended, inability to do other work, slept few hours because of fetching water; had to do extra work (laundry) because of dirty conditions while fetching water
	Opportunity cost due to sanitation conditions	No items identified	ARISE; SI	*ARISE captures sanitation conditions interfering with “other housework” and requiring women to “miss out on other activities”, and “wake up earlier” *SI captures having to leave dependents unattended to go to sanitation location

	Opportunity cost due to hygiene conditions (including menstruation)	PMA2020	ARISE	*PMA2020 captures work absenteeism during menstruation (unclear if related to pain, lack of materials, lack of facilities at work, etc.) *ARISE captures having to “miss out on other activities” and “wake up earlier”
	Control over time spent in WASH-related initiatives	No items identified	No items identified	
	Time available to participate in WASH-related initiatives	No items identified	No items identified	
Themes & Sub-Themes with Possible WASH Implications				
(A) Time spent on activities with possible WASH implications	Time spent caring for elderly, children, sick	LSMS; ELMPS	Oxfam	*Caring for dependents may include assisting with urination, defecation, or personal hygiene or may be linked to WASH-related illnesses
	Time spent on cleaning, laundry, dishes	LSMS; ELMPS	Oxfam	*Cleaning, laundry, and dishes require water
	Time spent collecting or preparing fuel (e.g., firewood)	LSMS; UNPS; ELMPS	No items identified	* Analysis opportunity: If water treatment method involves boiling, time spent on collecting or preparing fuel may be counted toward total time required for water treatment.
	Time spent on unpaid work	LSMS; PMA2020	No items identified	*Unpaid work may include WASH-related tasks PMA2020 asks if any work aside from your own housework has been done in the last month
	Time spent in community groups/organization	No items identified	SOCAT	
	24-hour diary of activities	No items identified	IDM; Oxfam	*Oxfam specifies main activity and one simultaneous activity
(B) Labor delegation for household chores with possible WASH implications	Who usually cares for elderly, children, sick	No items identified	Oxfam	*Caring for dependents may include assisting with urination, defecation, or personal hygiene or may be linked to WASH-related illnesses
	Who usually cleans, does laundry or dishes	No items identified	Oxfam; SWE	*Cleaning, laundry, dishes may require water *SWE captures “Hindrances due to the traditional outlook that women are meant for household chores and traditional tasks”
	Who usually collects or prepare fuel (e.g., firewood)	No items identified	Oxfam	*Fuel may be required for water treatment

¹Utility Inequities Surveys

Key take-home points:	
<ul style="list-style-type: none"> • No items directly assess control over time and labor <ul style="list-style-type: none"> ◦ Only tools at the sub-national level capture any information regarding satisfaction with time or labor required for WASH and/or ability to access WASH at certain times/without delay ◦ No items assess time available to participate in WASH-related initiatives • No items directly assess perceived inequalities in labor delegation of WASH-related activities • Of time and labor related to water, sanitation, and hygiene, water was the only topic covered by items from nationally representative tools (with the exception of one item related to work absenteeism due to menstruation from the PMA2020); particular focus appears to be given to water collection 	
Opportunities: Leveraging existing data	
<ul style="list-style-type: none"> • DHS/MICS directly measure absolute time spent collecting water as well as who usually collects water; these data can be leveraged to assess differences in time spent on water collection by women and men (i.e., when the person who “usually collects water” is female vs. male). It will not assess how individuals feel about time spent or their roles, so this may be most useful to assess as trends over time. • Despite lack of specific measures, data from nationally representative tools can be leveraged to assess other wash-related themes. If data are telling, items may be considered candidates for national-level monitoring.: <ul style="list-style-type: none"> ◦ Time spent on water treatment (assign average time required for a given water treatment method (DHS; MICS; LSMS) and leverage time spent collecting firewood/fuel (LSMS) for those who report boiling) ◦ Gender balance in household chores (utilizing data concerning who ‘usually’ completes other, non-WASH-related tasks, in concert with data concerning who ‘usually’ collects water, etc. can provide a more nuanced understanding of intrahousehold equity) 	
Opportunities: New data sources	
Small-scale monitoring	<ul style="list-style-type: none"> • Programs that aim to monitor changes in satisfaction with time spent access sanitation facilities or meeting menstruation-related needs may consider utilizing the ARISE scale • Programs that aim to assess suppression of need to urinate/defecate or delaying use of sanitation facilities may consider utilizing the ARISE scale or the Sanitation Insecurity Measure; this review did not identify any similar items for suppressing thirst or delaying management of menstruation • Programs that aim to either assess perceived burden of various WASH-related chores to inform program design and/or to reduce perceived burden from a given WASH-related chore may choose to use the WWAP as guidance; though only water-related chores are captured by the tool as is
Large-scale monitoring	<ul style="list-style-type: none"> • Test items to potentially use for nationally representative tools: <ul style="list-style-type: none"> ◦ time spent accessing sanitation and time spent accessing hygiene ◦ perceived control over time for water, sanitation, and hygiene activities ◦ perceived inequality of labor spent on WASH-related activities • Develop and test items concerning satisfaction with time required to access water, sanitation, and hygiene (see ARISE items that measure agreement with statements such as “it takes too much time to access and use sanitation facility”) • Revise items related to absenteeism during menstruation (see PMA2020)

Considerations

As time is a finite resource, the absolute time required for women to complete WASH-related tasks and to access WASH does have some implications for her capacity to engage in paid work and/or leisure activities.

However, it does not provide a full picture of intrahousehold dynamics, nor does it capture women's capacity to make alternative choices about how she spends her time. Even tools that measure time spent on certain WASH activities by men and women separately or that assess the gender balance between who usually completes certain WASH-related chores do not sufficiently capture women's agency. It is possible, for example, that women spend a disproportionate amount of time on WASH-related chores compared to their spouses, but that they prefer to do so or do not perceive that there is an inequity in overall household division of labor if WASH and non-WASH activities are considered.

In order to understand women's agency related to time and labor (i.e., control over time and labor spent on WASH activities), it is important to directly measure perceived inequality and/or to capture whether women have the capacity to make alternative choices if they want.

Changes over time in who spends time on WASH activities and how much time they spend may provide information about trends in gender equality. However, it is important to consider contextual shifts such as climate change and conflict, which can increase the time required to access WASH.

Appendix 7: Access to Resources: Financial Resources & Physical Assets

Financial resources and physical assets refer to an individual's control over economic resources and long-term stocks of value, such as land, for the purposes of meeting individual and household WASH needs.

Summary

Primary themes identified within the *financial resources & physical assets* dimension include:

1. Cost of WASH services/ facilities
2. Access to sufficient funds to access or improve WASH
3. Access to financial assistance including loans and subsidies
4. Perceived affordability of WASH products, services, facilities
5. Willingness to pay for WASH products, services, facilities
6. Distribution of WASH-related costs within the household
7. Control over resources for WASH access and improvements
8. Impact of WASH conditions on financial resources/physical assets
9. Earning an income from WASH

The following themes and sub-themes were identified that may have WASH implications:

- A. Access to financial assistance
- B. Control over resources with possible WASH implications
- C. Ownership of physical assets

Overall,

- There are limited items at national levels. The themes are all captured at the sub-national level and most sub-themes are covered by one of two tools - ARISE, which focuses heavily on sanitation, or the WWAP tool, which focuses heavily on water.
- No national-level measures were identified that assess the cost of WASH services/ facilities (1 above), access to sufficient funds to access or improve WASH (2 above), access to financial assistance including loans and subsidies (3 above), distribution of WASH-related costs within the household (5 above), distribution of WASH-related costs within the household (6 above), control over resources for WASH access and improvements (7 above), impact of WASH conditions on financial resources/physical assets (8 above), or earning an income from WASH (9 above).
- Perceived affordability of water services and hygiene products are both measured by nationally representative and sub-national tools while perceived affordability of sanitation was assessed only as part of the Sanitation Insecurity Measure (4 above). This theme also

includes aspects of equity and agency such as distribution of WASH-related costs within the household and control over resources for WASH, respectively.

- Two themes (impact of WASH on financial resources and earning an income from WASH) address the bidirectionality of the relationship between WASH conditions and financial resources/physical assets. These two themes are also only measured by items in the ARISE and WWAP tools; other toolkits provide recommended indicators.
- There are also a number of themes related to financial resources and physical assets that are measured in nationally representative tools and may have possible WASH-related implications; these are listed in gray at the bottom of the table.

Financial Resources & Physical Assets: Themes assessed in existing tools by level				
Themes	Sub-theme	Tools measuring sub-theme		Notes
		Nationally representative	Sub-National (e.g., Prog./Proj. Eval)	
(1) Cost of WASH services/ facilities	Absolute cost of water, water treatment	No items identified	WWAP; GWA-GSM	*WWAP captures cost of monthly water bill; price of water purchased from vendors disaggregated by M/F household head GWA-GSM captures cost of one m3 from utility
	Absolute cost sanitation (e.g., sewerage, pit emptying, pay per use sanitation facilities)	No items identified	ARISE	*ARISE captures whether money is paid for the sanitation location (yes/no); whether money is paid for water used for sanitation-related purposes (yes.no)
	Absolute cost of hygiene (e.g., soap, materials for menstruation)	No items identified	No items identified	
(2) Access to sufficient funds to access or improve WASH	Access to sufficient funds to purchase water products, services, facilities	No items identified	ARISE; SWE	*ARISE captures inability to use preferred water source due to cost *SWE captures scarcity of “resources like land, raw water, manpower for distribution of water”
	Access to sufficient funds to purchase sanitation products, services, facilities	No items identified	ARISE	*ARISE captures inability to use preferred sanitation location due to cost; ability to acquire money for latrine construction/repair via selling assets, work, credit; having to choose between paying for sanitation-related needs and other household needs *WASH-GEM captures how latrine was financed, including direct purchase in answer choices

	Access to sufficient funds to purchase hygiene products, services, and facilities (including for menstruation)	No items identified	ARISE; MHM - Schoolgirls and Nuns	*MHM - Schoolgirls and Nuns captures ability to afford sanitary pads *ARISE captures having to choose between paying for menstruation-related needs and other household needs
(3) Access to financial assistance including loans and subsidies	Ability to or experience with taking financial assistance for water-related costs/needs	No items identified	SWE	*SWE captures access to credit/microfinance from banks
	Ability to or experience with taking financial assistance for sanitation-related costs/needs	No items identified	WASH-GEM; WWAP	*WASH-GEM captures how latrine was financed, including using micro-finance or subsidy in answer choices *WWAP captures access to credit or subsidies for building/maintaining sanitation facility or sewage disposal system
	Ability to or experience with taking financial assistance for hygiene-related costs/needs	No items identified	No items identified	
	Ability to or experience with taking financial assistance for WASH-related enterprise	No items identified	WWAP	*WWAP captures access to credit for setting up/improving water-related enterprises
(4) Perceived affordability of WASH products, services, facilities	Perceived affordability of water products, services, facilities	MICS	WWAP; Odisha-WCM	*MICS captures main reason (“too expensive”) for inability to obtain sufficient quantities of water *WWAP captures perceived level of difficulty to pay water bill/purchase water; satisfaction with water tariff *Odisha-WCM captures worry about money to build/maintain water source
	Perceived affordability of sanitation products, services, facilities	No items identified	SI	*SI measure captures worry about money to build/maintain toilet
	Perceived affordability of hygiene products, services, and facilities (including for menstruation)	No items identified	COVID 19 MTRA; Ethiopia-SNV; UNICEF - MHM Guidance; WSSCC	*COVID 19 MTRA captures if soap and water for handwashing are too expensive to purchase *UNICEF captures reason (“too expensive”) for not using preferred materials during last period
(5) Willingness to pay for WASH products, services, facilities	Willingness to pay for water products, services, facilities	No items identified	No items identified	
	Willingness to pay for sanitation products, services, facilities	No items identified	WWAP	*WWAP captures willingness to pay for construction of sanitation facility
	Willingness to pay for hygiene products, services, facilities	No items identified	No items identified	
(6) Distribution of	Whose income are water-related costs paid from	No items identified	Mainstreaming Gender in WASH;	*UIS captures % of income from women/men to access water and sanitation services

WASH- related costs within the household			UIS; WWAP	*Indicator only: Mainstreaming Gender. (shared costs between men & women for safe domestic water; % of income from women/ men to access water and sanitation services)
	Whose income are sanitation-related costs paid from	No items identified	Recommended indicator, but no items identified	*Mainstreaming Gender has indicator only (% of income from women/men to access water and sanitation services)
	Whose income are hygiene-related costs paid from	No items identified	U-Report; UNICEF - MHM Guidance	*Both tools listed capture who pays for one's menstrual hygiene materials
(7) Control over resources for WASH access and improvements	Who makes decisions, degree of input into decisions about water expenditures	No items identified	EWI	*EWI captures who normally makes decisions, degree of input, and whether independent decisions are possible concerning water
	Who makes decisions, degree of input into decisions about sanitation expenditures	No items identified	EWI; ARISE	*EWI captures who normally makes decisions, degree of input, and whether independent decisions are possible concerning sanitation *ARISE captures control over money that can be used for sanitation; needing to ask for permission to make small sanitation purchases; dependence on others for small sanitation purchases; ability to make sanitation purchase decisions independently
	Who makes decisions, degree of input into decisions about hygiene expenditures	No items identified	Olken; ARISE	*Olken captures need to ask permission to buy soap, sanitary napkins *ARISE captures control over money for menstruation needs; dependence on others for menstruation expenses
(8) Impact of WASH conditions on financial resources/ physical assets	Impact of water on financial resources/assets	No items identified	SWE; Mainstreaming Gender in WASH	*SWE captures days of work lost due to caring for elders/children sick from waterborne diseases *Mainstreaming Gender has indicator only (% increase in income for men and women from productive uses of water; # of women with control over water-dependent enterprises)
	Impact of sanitation on financial resources/assets	No items identified	ARISE; WWAP	*ARISE captures avoidance of IGA due to lack of access to sanitation location during menstruation *WWAP captures how lack of household sanitation affects livelihood
	Impact of hygiene on financial resources/assets	PMA2018-Niger	MIS;	*MIS captures "trouble doing my work because of wound from cloth/pad" *PMA2019-Niger captures work days missed due to menstrual period

(9) Earning an income from WASH	Earning an income from water-related work	No items identified	WWAP; SWE	*WWAP captures adequate income from water delivery enterprises; difference if owner is female/male *SWE captures additional income from water-related work and access to funds to start a water-related business
	Earning an income from sanitation-related work	No items identified	WWAP	*WWAP captures adequate income from sanitation/wastewater enterprises; difference if owner is female/male
	Earning an income from hygiene-related activities	No items identified	No items identified	*MHM Matters has indicator only (women gaining income from production of menstrual hygiene products)
	Earning an income from WASH activities (unspecified)	No items identified	WASH-GEM	*WASH-GEM asks if income is earned from water, sanitation, and/or hygiene activities; it is not specific to hygiene alone
Themes & Sub-Themes with Possible WASH Implications				
(A) Access to financial assistance	Presence of credit, microfinance group in community	No items identified	EWI	*Credit may be used and/or needed for purchase of WASH infrastructure (e.g., latrine or making large scale repairs or modifications (e.g. changes in pit size/type)
	Membership and input in credit or microfinance group	No items identified	EWI	
	Presence of people who could help provide small amount of money if needed	No items identified	SOCAT	
(B) Control over resources with possible WASH implications	Who decides how money earned is used; major household purchases	DHS8	SWE	*Individuals' control over how money is spent may influence ability to utilize income for small or large WASH purchases *SWE captures "gained financial independence" and "now your opinion is important in the financial decisions of the family"
(C) Ownership of physical assets	Ownership of house	DHS8	EWI; UIS	*Usually have to own a home in order to make major home upgrades (e.g., latrine, piping for water) *DHS captures ownership alone or jointly with someone else *UIS is indicator only (% of houses owned by women; jointly owned by spouses)
	Ownership of household assets, including WASH facilities and digital and communication technology	No items identified	EWI	*EWI captures ownership of various assets and separately asks (check all that apply) about ownership of major household WASH facilities

<p>Key take-home points:</p> <ul style="list-style-type: none"> ● Access to financial resources and control or ownership over physical assets appear to be recognized across a number of tools as important resources for women and men’s ability to meet their WASH needs. ● The themes within this domain cover a wide range of topics concerning both how financial resources impact access to WASH (e.g., ability to access sufficient funds, willingness to pay, access to loans/subsidies) and how access to WASH impacts financial resources (e.g., impact of WASH conditions on financial resources, earning an income from WASH). ● While this domain contains three items from global-level monitoring tools, only one of these deals directly with WASH, and specifically with water. 	
<p>Opportunities: Leveraging existing data</p> <ul style="list-style-type: none"> ● Existing MICS tools include the item “<i>What was the main reason that you were unable to access water in sufficient quantities when needed?</i>” One of the response options for this item is “<i>Water too expensive</i>”; thus, existing MICS data can be used to determine the degree to which financial resources impact households’ access to sufficient quantities of water. While this item alone does not provide meaningful information about individual’s control over financial resources or agency to utilize resources to fulfill WASH-related needs, it can be used in concert with existing DHS data concerning who makes decisions about how income should be spent to assess whether women’s control over financial resources is associated with access to sufficient quantities of water and perceptions of the affordability of water. <ul style="list-style-type: none"> ○ See ‘Decision-Making’ for additional suggested opportunities related to utilization of existing DHS data concerning who makes decisions about how income should be spent and whether to make major household purchases. ● The Individual Deprivation Measure, which is currently under revision, is not WASH-specific, but targets gender-specific deprivation within the household, rather than using the household as the unit of measurement. This could be used to leverage how much of women’s income specifically is used toward WASH expenses versus how much of men’s income is used toward WASH expenses⁴⁷ 	
<p>Opportunities: New data sources</p>	
<p>Small-scale monitoring</p>	<ul style="list-style-type: none"> ● Programs that aim to increase women’s access to and control over financial resources in the household may consider utilizing the ARISE scales, which go beyond measuring household-level resources and, instead, incorporate gender-sensitive measurement of “<i>dependence on others</i>” to make certain WASH purchases or “<i>control over money</i>.”
<p>Large-scale monitoring</p>	<ul style="list-style-type: none"> ● The WWAP has been utilized as a national monitoring tool in many countries across contexts and includes a variety of items related to perceived affordability, satisfaction with cost, and willingness to pay for various WASH services (with a focus on water). The performance of these items in the WWAP may indicate whether any are promising candidates for larger-scale monitoring. ● Standalone items from the ARISE scales may be useful for assessing control over funds related to sanitation at national levels.
<p>Considerations</p> <p>Items that capture absolute cost of utilities or WASH services require additional information (e.g., total income available to spend on such costs, national average cost, etc.) in order to be meaningfully understood in context. Additionally, items that capture household-level expenditure or household-level financial resources risk obscuring intrahousehold inequalities in access to or control over those resources.</p>	
<p>47. Wisor S, Bessel S, Castillo F, et al. The Individual deprivation measure: a gender sensitive approach to poverty measurement. . Melbourne: International Women's Development Agency, 2014.</p>	

Appendix 8: Access to Resources: *Knowledge & Information*

Knowledge and information refers to individuals' knowledge and access to information related to water, sanitation, and hygiene, including WASH improvements and maintenance.

Summary

Primary themes identified within the *Knowledge and Information* dimension include:

1. Knowledge related to maintaining or improving WASH
2. Access to WASH-related information
3. Financial and market literacy

Overall, knowledge and information are mostly assessed at the sub-national level with a particular focus on access to information related to managing menstruation:

- Knowledge related to maintaining or improving WASH included items relating to service providers (e.g., awareness of providers, services, standards, and sanctions) for both water and sanitation. Only ARISE captured knowledge of how to make repairs or solve problems oneself and these were all related to sanitation only. While there was one recommended indicator for hygiene-related knowledge under this theme, there were no items.
- Access to WASH-related information included items at the sub-national level measuring access to information about best practices for water, sanitation, and hygiene. Tools - at both levels - captured access to and source of information related to menstruation. Access to information about and/or awareness of rights related to WASH were also captured under this theme by one sub-national-level tool.
- Financial literacy to facilitate sanitation access was measured by two items in the ARISE scale only; no items measured financial literacy to facilitate access to water or hygiene. Financial literacy and job skills to facilitate WASH-related income-generating activities (IGAs) was also classified under this theme and measured by a few sub-national-level tools.

Note: Some of the items included in this domain pertain to one's belief that they have the knowledge, information, skills, or ability necessary to achieve a given WASH-related task. This may be best classified as an indicator of self-efficacy; however, within the established conceptual framework, we have chosen to classify these items under the Knowledge & Information domain.

Knowledge, Attitudes, and Practices (KAP) surveys and items that test specific WASH-related knowledge have not been included.

Knowledge & Information: Themes assessed in existing tools by level				
Themes	Sub-Themes	Tools measuring sub-theme		Notes
		Nationally representative	Sub-National (e.g., Prog./Proj. Eval)	
(1) Knowledge related to maintaining or improving WASH	Knowledge related to maintaining or improving water conditions	No items identified	EWI; WWAP	*EWI captures frequency, source, and sharing of information about “duties of water service provider,” “supply of water and sanitation services” and sanctions for violation of “WASH services rules” *WWAP captures information provided by water delivery services to F/M consumers and F/M members of the community receiving training on construction and maintenance of piped water
	Knowledge related to maintaining or improving sanitation conditions	No items identified	ARISE; EWI	*ARISE captures belief in ability to solve sanitation problems, repair latrine, get latrine repaired, contribute to sanitation projects, contribute to community sanitation decisions *ARISE captures knowledge of how sanitation decisions are made in the community, who to contact to resolve sanitation problem, service providers *EWI captures frequency, source, and sharing of information about standards related to “supply of water and sanitation services” and sanctions for violation of “WASH services rules”
	Knowledge related to maintaining or improving hygiene conditions (inclusive of menstruation)	No items identified	Recommended indicator, but no specific items identified	*MHM Matters is indicator only (information on price, location, washing, drying, disposal mechanisms are available to women and girls)
(2) Access to WASH-related information	Access to water-related information	No items identified	EWI; WASH-GEM	*EWI captures frequency, source, and sharing of information about “good water practice”
	Access to sanitation-related information	No items identified	ARISE; EWI; WASH-GEM	*ARISE captures knowing someone and source of information about “better sanitation practices” *EWI captures frequency, source, and sharing of information about “good sanitation practices”
	Access to hygiene-related information	No items identified	Ethiopia-SNV; EWI; GR-WASH; JMP - MH Review; MHM - Indonesia; MHM Matters; MHM - Nepal; MHM - Schoolgirls and Nuns; MHSB;	*EWI captures frequency, source, and sharing of 6 information about “good hygiene practices” *All remaining tools in this sub-theme capture access to information about menstruation and confidence in one’s knowledge and skills to manage menstruation *MHM Matters, JMP - MH Review, and GR-WASH are indicator only

			U-Report; UNICEF - MHM Guidance; WaterAid DFID; WASH-GEM GEAS; WSSCC	
	Access to information about and/or awareness of rights related to WASH	No items identified	EWI	*EWI captures frequency, source, and sharing of information about “citizen’s rights related to WASH service”
(3) Financial and market literacy	Financial literacy to facilitate water access or improvements	No items identified	No items identified	
	Knowledge of how to access water or water treatment products, including location and prices	No items identified	No items identified	
	Financial literacy to facilitate sanitation access or improvements	No items identified	ARISE	*ARISE captures belief in ability to manage money for sanitation project in household and community
	Knowledge of how to access sanitation products, such as toilet paper, including location and prices	No items identified	No items identified	
	Financial literacy to facilitate hygiene access or improvements	No items identified	No items identified	
	Knowledge of how to access hygiene products, such as soap, detergent, or sanitary napkins, including location and prices	No items identified	No items identified	
	Financial literacy and job skills to facilitate WASH-related IGA	No items identified	GR-WASH; SWE; Mainstreaming Gender in WASH;	*GR-WASH is indicator only (% of women/girls in job skills training on operation and maintenance of water supply & sanitation) *SWE captures bookkeeping, financial, and leadership training *Mainstreaming Gender in WASH is indicator only (% of M/W trained in “scheme management”)

<p>Key take-home points:</p> <ul style="list-style-type: none"> • The only nationally representative tool that measured knowledge related to WASH and gender did so in relation to knowledge about menstruation • Knowledge of one’s right to WASH is captured by only one tool (Empowerment in WASH Index) which refers to “WASH services” broadly • Most of the measurement of financial literacy related to WASH is related to owning or managing a WASH-related business rather than financial literacy to facilitate improvements in water, sanitation, or hygiene for the individual, household, or community. 	
<p>Opportunities: Leveraging existing data</p> <ul style="list-style-type: none"> • The UNICEF Guidance for Monitoring MHM tool includes the item: “How confident do you feel that you have the skills to manage your menstruation, including changing and disposing or washing menstrual materials?”. This item can be used in conjunction with other items in the tool to determine: <ul style="list-style-type: none"> ○ Odds of worrying about where you would obtain menstrual materials among women who reported confidence in skills to manage menstruation ○ Odds of alignment between preferred and used menstrual materials among women who reported confidence in skills to manage menstruation ○ Association between confidence in skills to manage menstruation and number/sources of social support (i.e., people you could ask for advice about menstruation) • The SOCAT asks participants to identify the three most sources of information on markets and what the government is doing. These items could be used in areas with WASH programming to understand how individuals get information on the market (for market-based approaches) as well as on government WASH services and actions 	
<p>Opportunities: New data sources</p>	
<p>Small-scale monitoring</p>	<ul style="list-style-type: none"> • The ARISE scale could be considered for measurement of sanitation-related knowledge in urban settings; particularly knowledge related to maintaining or improving sanitation conditions, access to information about best sanitation practices, and financial literacy to facilitate sanitation access. Some items could potentially be adapted and tested for knowledge related to water or hygiene, as well as for use in rural settings. • The Empowerment in WASH Index could be considered for small-scale monitoring of knowledge if users are interested in frequency, source, and/or sharing of a variety of types of information (e.g., best practices in water, sanitation, or hygiene; right to WASH services; standards and sanctions for service providers)
<p>Large-scale monitoring</p>	<ul style="list-style-type: none"> • The Menstrual Health Seeking Behaviors Questionnaire has been widely validated; items from this tool may be strong candidates for use in global monitoring tools • Develop and test items to measure knowledge related to maintaining or improving hygiene conditions (see ARISE and Empowerment in WASH Index for parallel examples of items measuring knowledge related to maintaining or improving water and sanitation conditions)
<p>Considerations</p> <p>Many of the identified tools capture access to information and/or perceived knowledge or confidence in one’s knowledge and skills rather than attempting to assess the accuracy or ‘correctness’ of the respondent’s knowledge related to a given WASH topic. This may be due to the non-universality of ‘correct’ answers (i.e., best practices often depend on what is available to whom and under what circumstances in a given context). While these types of universal knowledge assessments may not be appropriate for nationally representative or global-level monitoring, they can be useful for program-level monitoring, which may allow for more context-specific knowledge assessment tools adapted to the knowledge that the program was expected to deliver.</p> <p>Items related to confidence in one’s knowledge and skills to be able to do something or act in some way (e.g., repair a latrine, manage menstruation, contribute to community decisions about sanitation) all speak to knowledge and information, but may also be important indicators of self-efficacy, which has been shown to be a strong predictor of a variety of health behaviors.⁴⁸⁻⁵¹</p>	
<p>48. Anderson ES, Winett RA, Wocjik JR. Self-regulation, self-efficacy, outcome expectations, and social support: Social cognitive theory and nutrition behavior. <i>Annals of Behavioral Medicine</i> 2007; 34(3): 304-12.</p> <p>49. Barchi F, Winter SC, Ramaphane P, Dougherty D. The role of self-efficacy in women’s health-seeking behaviors in Northwestern Botswana. <i>Journal of Health Care for the Poor and Underserved</i> 2019; 30(2): 653-67.</p> <p>50. Salarkia N, Omidvar N, Zaeri F, Zeinab HE, Neyestani TR. Mother’s self-efficacy mediates the relationship between household food insecurity and maternal infant feeding styles. <i>Maternal and Child Health Journal</i> 2015; 20(3): 606-12.</p> <p>51. Sheeran P, Maki A, Montanaro E, et al. The impact of changing attitudes, norms, and self-efficacy on health-related intentions and behavior: A meta-analysis. <i>Health Psychol</i> 2016; 35(11): 1178-88.</p>	

Appendix 9: Access to Resources: *Social Capital*

Social capital refers to individuals' membership in trusting and cooperative social networks that provide tangible (i.e., economic/material) and intangible (i.e., emotional and instrumental) support. This includes relationships or social ties with individuals or groups that help individuals access water, sanitation, and hygiene and complete WASH-related tasks and activities.

Summary

Primary themes identified within the Social Capital dimension include:

1. WASH-related community groups
2. Social support to facilitate accessing WASH/tending to WASH needs
3. Social support to fulfill WASH-related responsibilities
4. Social support for accessing WASH information
5. Social support for improving WASH conditions
6. Social support to facilitate WASH-related decision-making and/or leadership
7. Perceived changes in social support as a result of WASH interventions or participation

The following themes were identified that may have WASH implications:

- A. Community groups with possible WASH implications
- B. Friends in social network who could lend help or social support in ways that may have WASH implications

Overall, the majority of identified tools and items related to social capital have been created for use at sub-national or programmatic levels.

- Presence of or membership in WASH-related community groups was assessed for water- and sanitation-related groups only and was not captured by any nationally representative tools.
- There are a few sub-national tools that measure social support to facilitate accessing WASH/tending to WASH needs. Social support to facilitate accessing WASH dealt mostly with having or finding someone to supervise dependents and/or help with other chores in order to allow the individual to access water or sanitation. Those related to hygiene were specific to menstrual hygiene and bathing. These items dealt not only with assistance with these needs, but also with social support to obtain menstruation-related items or menstrual materials.
- Few items captured social support to fulfill WASH-related responsibilities. Those that did deal only with water and sanitation-related responsibilities and came only from sub-national-level tools.
- Several tools included items related to social support for accessing WASH information. While items related to information about water and sanitation tended to focus on whether individuals shared information with others and/or knew someone who could provide advice,

items related to information about hygiene tended to focus on women's sources of information regarding menstruation. One item captured social support to access information regarding WASH service providers.

- Only a few, sub-national-level tools assessed social support for improving WASH conditions. Items in this theme asked whether respondents felt comfortable speaking with various parties (e.g., family members, local leaders) about WASH-related issues and whether others in their community can be trusted to help with sanitation-related projects. No water-related items were identified.
- One tool captures social support to facilitate WASH-related decision-making and/or leadership and only for sanitation-related meetings/events.
- Other community groups are also included as a theme under social capital with possible implications for WASH as membership in other community groups may provide access to material, informational, or instrumental support that can be leveraged to access WASH or improve WASH conditions. Similarly, the existence of friends and social networks who may be able to lend support as needed may be able to help or provide support in ways that have WASH implications

Note: There is some overlap between the items captured under this domain and those reported under the Social Context domain; generally, those included here were more self-referential, while those captured under Social Context were more other- or community-referential.

Social Capital: Themes assessed in existing tools by level				
Themes	Sub-Themes	Tools measuring sub- theme		Notes
		Nationally representative	Sub-National (e.g., Prog./Proj. Eval)	
(1) WASH-related community groups	Presence of or membership in water-related groups, committees, or associations in the community	No items identified	EWI; SOCAT	*EWI captures “water user’s group” *SOCAT captures “water and waste management group”
	Presence of or membership in sanitation-related groups, committees, or associations in the community	No items identified	ARISE; SOCAT	*ARISE captures groups that “address sanitation-related concerns or problems” and “what do these groups do?” *SOCAT captures “water and waste management group”
	Presence of or membership in hygiene-related (inclusive of menstruation) groups, committees, or associations in the community	No items identified	No items identified	
(2) Social support to facilitate accessing WASH/tending to WASH needs	Social support to facilitate accessing water	No items identified	Odisha-WCM	*Odisha-WCM captures trouble finding someone to watch dependents “so I can fetch water”
	Social support to facilitate accessing sanitation and tending to sanitation-related needs	No items identified	ARISE; SI	*ARISE captures having someone (and who) to help with chores so “I can tend to my sanitation needs”; someone (and who) can get “small, sanitation-related items” *SI captures trouble finding someone to watch dependents “so I could urinate” and “so I could defecate”
	Social support to facilitate accessing hygiene and tending to hygiene-related needs (including for menstruation)	No items identified	ARISE; MIS; Ethiopia-SNV	*ARISE captures having someone (and who) can get “menstruation-related items” *MIS captures difficulty finding someone to help with “bathing and other menstruation-related needs” *Ethiopia-SNV captures who provides menstrual materials
(3) Social support to fulfill WASH-related responsibilities	Instrumental support or assistance for water-related chores/responsibilities	No items identified	EWI	*EWI captures if respondent feels they are the only person who can collect water for household
	Instrumental support or assistance for sanitation-related chores/responsibilities	No items identified	ARISE	*ARISE captures having someone (and who) to help with “sanitation-related chores”
	Instrumental support or assistance for hygiene-related chores/responsibilities	No items identified	No items identified	
(4) Social support for accessing WASH information	Social support for accessing water-related information	No items identified	EWI; SWE	*EWI captures sharing information about good water practice with other households *SWE captures women in the community approach you for “suggestions and advice”

	Social support for accessing sanitation-related information	No items identified	ARISE; EWI	*ARISE captures knowing someone (and who) can provide information about “better sanitation practices” *EWI captures sharing information about good sanitation practice with other households
	Social support for accessing hygiene-related information (including for menstruation)	No items identified	Ethiopia - SNV; EWI; MHM - Indonesia; MHM - Nepal; MHM - Schoolgirls and Nuns; U-report; UNICEF - MHM Guidance; WaterAid DFID	*UNICEF - MHM Guidance and MHM - Nepal capture source of advice for how to manage period *Ethiopia - SNV, MHM - Schoolgirls and Nuns, U-report, and WaterAid DFID capture source of information about “menstruation” *EWI captures sharing information about good hygiene practice with other households *MHM - Indonesia captures who/where you first heard about menstruation
	Social support for accessing information concerning WASH service providers	No items identified	EWI	*EWI captures sharing information about citizens’ rights related to WASH service and duties of water service providers (including standards and sanctions) with other households
(5) Social support for improving WASH conditions	Assistance with securing water access for the household, water-related projects or addressing water-related issues	No items identified	No items identified	
	Assistance with securing sanitation access for the household, sanitation-related projects or addressing sanitation-related issues	No items identified	ARISE	*ARISE captures presence of people I can trust to help me with a “sanitation-related project”; someone (and who, including leaders) I can talk to about problems with sanitation location; community members (and who, including leaders) could help address a “sanitation-related problem in the community”; interactions with leaders about sanitation-related problems are free of conflict; men, women, local leaders listen to your opinion about sanitation-related issues
	Assistance with securing hygiene access for the household, hygiene-related projects or addressing hygiene-related issues	No items identified	Ethiopia - SNV ARISE; MHM - Nepal	*Ethiopia - SNV captures freely discussing menstruation issues with family and friends *ARISE captures feeling comfortable talking to family members about problems related to “menstruation and my sanitation location” *MHM - Nepal captures who you feel comfortable discussing menstruation with
(6) Social support to facilitate WASH-related decision-making and/or leadership	Social support for participation in water-related meetings/events or community initiatives	No items identified	No items identified	
	Social support for participation in sanitation-related meetings/events or community initiatives	No items identified	ARISE	*ARISE captures support from family to attend “sanitation-related meeting”, to attend or organize initiative to improve sanitation; others would listen if I spoke up in a sanitation-related community meeting; family support to take leadership role in sanitation-related

				organization
	Social support for participation in hygiene-related meetings/events or community initiatives	No items identified	No items identified	
(7) Perceived changes in social support as a result of WASH interventions or participation	Changes in relationships as a result of participation in WASH-related meetings/events of community initiatives	No items identified	WASH-GEM	*WASH-GEM asks if engagement in a WASH program has led to changes in relationships
	Changes in relationships as a result of purchasing or installing WASH infrastructure	No items identified	WASH-GEM	*WASH-GEM asks if purchasing a latrine has led to changes in relationships
Themes & Sub-Themes with Possible WASH Implications				
A. Community groups with possible WASH implications	Presence of or membership in groups, committees, or associations in the community that may facilitate access to WASH or WASH-related information and/or improvement of WASH conditions	No items identified	EWI; Oxfam; SOCAT SWE	*Membership in other community groups may provide access to material, informational, or instrumental support that can be leveraged to access WASH or improve WASH conditions *SOCAT lists a variety of possible groups that may be leveraged to access WASH or improve WASH conditions and captures specifically if benefits include access to services *EWI captures “trade or business association”, “political group”, “credit or microfinance group” or “other groups” *Oxfam captures membership in any group that holds regular meetings and type of group
	Characteristics of groups, committees, or associations in the community	No items identified	SOCAT	*SOCAT captures how membership is attained, and if membership is based on, or excludes based on, ethnicity, religion, political viewpoints and other demographic characteristics
B. Friends in social network who could lend help or social support in ways that may have WASH implications	Friends or neighborhoods who may be willing and able to lend or provide money childcare, or other forms of assistance if needed	No items identified	SOCAT	

<p>Key take-home points:</p> <ul style="list-style-type: none"> ● Only one nationally representative tool measured social capital related to gender and WASH ● Tools tended to overlook hygiene-related social support or focused hygiene-related items exclusively on menstruation-related social support ● The bulk of the existing measurement under the social capital domain is happening in relation to ‘social support for accessing WASH-related information’ concerning best practices for safe water and sanitation as well as sources of information about menstruation, broadly ● Tools tended to focus on instrumental forms of social capital (i.e., help from others in knowing how to do something or in executing some given action) rather than in capturing aspects of the social network or intrinsic/cognitive components (e.g., trust, sense of belonging, etc.). For the purposes of this work, the latter (cognitive aspects) tended to be classified under the Social Context domain within the Enabling Environment. 	
<p>Opportunities: Leveraging existing data</p> <ul style="list-style-type: none"> ● While not specific to WASH, World Bank’s Social Capital Assessment Tool (SOCAT) does include items that capture whether there is a water user’s group in the community and whether the individual respondent is a member in a water user’s group, respectively. Gaining access to services such as WASH is also captured as a potential outcome of membership in social groups. ● There are a number of existing tools used to measure social capital or aspects of social capital that have generated data across several contexts. Many of these tools were not included in our review because they do not assess social capital as it relates to WASH specifically. However, some of these tools such as IFPRI’s Women’s Empowerment in Agriculture Index (WEAI,) may be used to inform development of items for large-scale monitoring and/or may provide opportunities for analysis. 	
<p>Opportunities: New data sources</p>	
<p>Small-scale monitoring</p>	<ul style="list-style-type: none"> ● The Empowerment in WASH Index could be considered for small-scale monitoring of some themes of social capital; the tool captures social support for access to information about water, sanitation, hygiene, and service providers as well as support for fulfilling water-related chores and presence of water user’s groups. ● The ARISE scale could be considered for measurement of sanitation-related social capital. While the tool is designed specifically for sanitation-related issues in urban settings, it offers items that capture themes across the social capital domain and could potentially be adapted for water, hygiene, or other areas and adapted/tested in rural settings.
<p>Large-scale monitoring</p>	<ul style="list-style-type: none"> ● Develop and test items concerning social support to access and improve WASH (see Menstrual Insecurity Measure, Sanitation Insecurity Measure, Odisha Water Concerns Modules, and ARISE items that measure some but not all sub-themes under these themes) ● Develop and test items concerning social support to facilitate WASH-related decision-making and leadership (see ARISE items that measure familial support for attending meetings, organizing initiatives, and taking leadership roles in sanitation-related organizations; more work would be required to adapt these items for water and hygiene related purposes and/or broaden these items to deal with WASH-related decision-making and leadership overall)
<p>Considerations</p> <p>The majority of the items identified under the social capital domain do not deal directly with gendered experiences. It may be necessary to assess social capital related to WASH among men, women, and sexual and gender minorities and subsequently disaggregate data and/or collect data from household representatives of multiple genders in order to identify intrahousehold differences in social capital.</p> <p>It may also be pertinent in many contexts to identify sources of social capital separately by gender. Evidence suggests that women may be more restricted to the home or community in some contexts, allowing them to strengthen bonds and benefit from social support from family members and close neighbors but preventing them from building strong relationships with leaders, service providers, and others outside of the domestic sphere.⁵² Women also tend to have fewer resources available to them through formal mechanisms than men do; therefore, women may rely more heavily than men on the resources and support they receive through social networks.^{53,54} In addition to being gendered, sources of social capital may also be rather specific to the given context. In identifying sources of social capital pertinent for the given context, researchers and practitioners should consider changes over both space and time. Increasing urbanization, displacement due to climate or conflict, and other societal shifts can impact social capital and need to be considered in measurement efforts.^{55,56}</p>	
<p>52. Moore G. Structural determinants of men’s and women’s personal networks. <i>American Sociological Review</i> 1990; 55: 726-35.</p> <p>53. Elgar FJ, Davis CG, Wohl MJ, Trites SJ, Zelenski JM, Martin MS. Social capital, health and life satisfaction in 50 countries. <i>Health Place</i> 2011; 17(5): 1044-53.</p> <p>54. Carpenter JP, Daniere AG, Takahashi LM. Social capital and trust in Southeast Asian countries. <i>Urban Studies</i> 2004; 41(4).</p> <p>55. McKenzie K. Urbanization, Social Capital and Mental Health. <i>Global Social Policy</i> 2008; 8(3): 359-77.</p> <p>56. White KJC, Guest AM. Community Lost or Transformed? Urbanization and Social Ties. <i>City & Community</i> 2003; 2(3): 239-59.</p>	

Appendix 10: Ability to Exercise Agency: *Household Decision-Making*

Household decision-making refers to individuals' opportunities to influence and make decisions about water, sanitation, and hygiene within their homes

Note: This brief focuses solely on WASH-related decision-making within the household. Decision-making in the community is captured, in Public Participation.

Summary

Primary themes identified within the *Household decision-making* dimension include:

1. General household WASH decision-making
2. Control over decisions related to WASH purchases
3. Control over decisions regarding water source and sanitation and hygiene facility design, construction, and improvement
4. Control over decisions regarding water and sanitation and hygiene facility use, management, and maintenance
5. Control over WASH-related chore allocation within the households

The following theme was identified that may have WASH implications:

- A. Control over household income and purchases

Overall, there are no items from nationally representative tools that capture WASH-related household decision making.

- ARISE, EWI, and UNICEF - MHM Guidance are the only tools that capture decisions related to household WASH purchases. Items about purchases that are hygiene-related are limited to menstruation.
- ARISE is the only tool to capture decisions related to sanitation design, construction, or improvements; no items were identified that cover decisions related to water source or hygiene facility design, construction, or improvement.
- ARISE, EWI,, and WWAP capture household discussions and participation in decisions on use, management, and maintenance. ARISE and EWI each contain several questions to capture the extent of input or influence on decision-making.
- EWI, Oxfam, and WWAP capture who makes decisions regarding water collection. There are no items identified that capture who makes decisions on allocation of chores related to sanitation or hygiene (excluding “maintenance” as a chore).
- The DHS does include items that ask about decisions over household expenditures generally, which may or may not be WASH-inclusive.

Household Decision-making: Themes assessed in existing tools by level				
Themes	Sub-Themes	Tools measuring sub- theme		Notes
		Nationally representative	Sub-National (e.g., Prog./Proj. Eval)	
(1) General household WASH decision-making	Decisions/degree of input over general household decisions related to water, sanitation, and hygiene	No items identified	WASH-GEM	*WASH-GEM asks if participant makes household decisions related to drinking water, hygiene and sanitation
(2) Control over decisions related to WASH purchases	Decisions/degree of input over expenditures related to water	No items identified	EWI	*EWI captures who the decision-maker for expenditures related to water is, and how much input respondent has on that decision
	Decisions/degree of input over expenditures related to sanitation	No items identified	ARISE; EWI:	*ARISE captures if decisions on small sanitation-purchases have been influenced or independently made by respondent *EWI captures who the decision-maker for expenditures related to sanitation is, and how much input respondent has on that decision *EWI captures whether decisions on purchasing sanitation services is done independently, or due to family/community
	Decisions/degree of input over expenditures related to hygiene	No items identified	UNICEF - MHM Guidance	*UNICEF - MHM Guidance captures who makes decisions about menstrual materials used
(3) Control over decisions regarding water source and sanitation and hygiene facility design, construction, and improvement	Control over decisions regarding water source design, construction, and improvement	No items identified	No items identified	
	Control over decisions regarding sanitation facility design, construction, and improvement	No items identified	ARISE	*ARISE captures if decisions about latrine repairs, enhancements, and construction, or decisions about making toilets more female-friendly, have been influenced or independently made by respondent
	Control over decisions regarding hygiene facility design, construction, and improvement	No items identified	No items identified	
(4) Control over decisions regarding water and sanitation and hygiene facility use, management, and maintenance	Decisions/degree of input over water use and management	No items identified	EWI; WWAP	*EWI captures who the decision-maker for household water management, and how much input respondent has on that decision *WWAP asks qualitatively how decisions for use of water are made in the household
	Decisions/degree of input over sanitation facility use, management, and maintenance	No items identified	ARISE; EWI	*ARISE contains questions to capture if decisions about household sanitation facility maintenance have been influenced or independently made by respondent *ARISE contains a series of questions regarding participation in household sanitation discussions, including if they are welcome to be

				<p>present, to speak, and if their opinion is sought and listened to</p> <ul style="list-style-type: none"> *ARISE asks if it is acceptable for women to express different opinions from their husbands in household decision-making on sanitation *ARISE assesses if it is acceptable in the community for women to express opinions *Agreement that it is acceptable for a woman to express menstruation-related concerns when her family is making decisions related to sanitation location *EWI captures who the decision-maker for maintenance of household toilet or hygiene facilities, and how much input respondent has on that decision
	Decisions/degree of input over hygiene facility use, management, and maintenance	No items identified	ARISE; EWI	<ul style="list-style-type: none"> *ARISE captures if it is acceptable for women to express menstruation-related concerns when making decisions about sanitation, and if respondents would be scolded for expressing their opinions about menstruation-related issues *EWI captures who the decision-maker for maintenance of household toilet or hygiene facilities, and how much input respondent has on that decision
(5) Control over WASH-related chore allocation within the household	Decisions/degree of input over who collects water	No items identified	EWI; Oxfam; WWAP	<ul style="list-style-type: none"> *EWI captures who the decision-maker for water collection, and how much input respondent has on that decision *EWI captures whether decision to collect water is done independently, or due to family/community pressure *Oxfam captures who decides which family members do domestic tasks, including the collection of water, and to what extent participant can influence that decision *WWAP qualitatively asks who allocated the task to fetch water
	Decisions/degree of input over who does chores related to sanitation	No items identified	ARISE	*ARISE captures if respondent can independently make decision about cleaning and maintaining the sanitation facility
	Decisions/degree of input over who does chores related to hygiene	No items identified	No items identified	
Themes & Sub-Themes with Possible WASH Implications				
(A) Control over household income and purchases	Decisions on how income is spent	DHS	SWE	<ul style="list-style-type: none"> *DHS captures who decides how money earned by respondent and respondent's partner will be used *SWE captures if participant opinion is important to financial decisions of the family
	Decisions on major household purchases	DHS	SWE	<ul style="list-style-type: none"> *DHS captures who decides about major household purchases *SWE captures if participant opinion is important to financial decisions of the family

Key take-home points:	
<ul style="list-style-type: none"> • ARISE, EWI, Oxfam, and WWAP are the only tools that capture household decision-making related to WASH • ARISE and EWI contain questions to ascertain the degree of participation/influence in household decision-making 	
Opportunities: Leveraging existing data	
<ul style="list-style-type: none"> • DHS items on how income is spent and who makes decisions on major household purchases may be WASH inclusive or leveraged to discover who has decision-making power for WASH purchases. 	
Opportunities: New data sources	
Small-scale monitoring	<ul style="list-style-type: none"> • Programs focused on household decision-making in WASH may consider using or adapting ARISE, EWI, and WASH-GEM, all of which contain questions that go beyond asking who makes decisions to capture influence or degree of input or participation in the decision-making process • Programs focused on control over household WASH expenditures may consider using or adapting ARISE and EWI • ARISE contains questions on decision-making for sanitation improvements; there are opportunities to develop tools to fill gap in decision-making on water and hygiene improvements
Large-scale monitoring	<ul style="list-style-type: none"> • Develop and test items related to decision-making for WASH facility management, chores, and purchases • Assess feasibility and relevance of items from sub-national tools for use in tools administered in nationally representative surveys.
Considerations	
<p>Decision-making is complex to measure. Decisions on certain subjects may be divided amongst household members because of interest, normative gender roles, or other factors. Lack of decision-making related to WASH does not necessarily translate to lack of household decision-making power.</p> <p>Other intersectional factors - such as caste, class, race/ethnicity, life stage/age, etc. - may influence household decision-making power related to WASH, as well as other types of household decisions.</p>	

Appendix 11: Ability to Exercise Agency: *Public Participation*

Public participation refers to individuals' ability to participate in WASH-related public activities, including influencing decisions at a public level, participating in committees, assuming both formal (e.g. elected) and informal (e.g. positions of influence) leadership positions, and participating in WASH-related income-generating activities (IGAs), and the impact of WASH conditions and responsibilities on individuals' abilities to participate in public life.

Summary

Primary themes identified within the *Participation* dimension include:

1. Opportunities for participation in WASH-related groups
2. Representation in WASH-related groups
3. Leadership in WASH-related groups
4. Voice/influence in WASH-related groups
5. Participation in WASH-related community activities/meetings
6. Leadership in WASH-related community activities/meetings
7. Voice/influence in WASH-related community activities/meetings
8. Participation in high-level WASH positions or governance
9. Participation in WASH-related IGAs
10. Impact of WASH conditions/responsibilities on ability to participate in public life (work, school, social activities)

The following themes were identified that may have WASH implications:

- A. Representation in groups with possible WASH implications
- B. Participation in community activities/meetings with possible WASH implications
- C. Voice in community activities/meetings with possible WASH implications

Overall, the items identified captured a wide range of experiences and perceptions related to participation in formal WASH groups and/or in community activities or meetings for WASH-related issues. However, none of the tools (except those that were not directly related to WASH) were used to collect data at the national level or have been used for global monitoring.

- Opportunities for participation were only captured by items related to water-focused groups or initiatives. Two indicators were recommended for opportunities to participate in hygiene-focused groups or initiatives, but did not have associated items for measurement. There is some overlap between this theme and the “WASH-related community groups” theme within Social Capital; however, opportunities for participation are more broadly inclusive of a variety of venues or fora for participation compared to “WASH-related community groups” which focused on the presence of formally established groups in the community.

- Tools at the sub-national level captured representation in water and sanitation groups separately as well as “WASH” groups generally. No tools captured representation in hygiene-related groups nor captured any of these sub-themes at the national level.
- Only two tools assessed leadership in WASH-related groups - one tool focused on management of water resource institutions and the other was focused on groups that dealt with sanitation issues; both were sub-national-level tools.
- Voice/influence in WASH-related groups included items from two sub-national tools that assessed the degree to which respondents felt comfortable voicing their opinions in group meetings and/or the degree to which these opinions appeared to be considered by other group members. These tools were only relevant to water- or sanitation-focused groups. Voice/influence also includes input into or involvement in decision-making (Note that the decision-making domain is focused exclusively on household level decision-making).
- Tools at the sub-national level captured participation in water-, sanitation-, or hygiene-related community activities/meetings. The items in this theme captured experience attending community meetings, participating in community WASH planning, and acceptability of/support for women’s participation in community WASH activities/meetings. Some of the items in this theme are related to working together with other members of the community to solve WASH-related problems; these items are also captured as a form of collective action under Social Context.
- Leadership in WASH-related community activities/meetings is only captured by the ARISE scale, which is specific to sanitation-related issues and urban settings.
- We identified several items that measured voice/influence in water-, sanitation-, or hygiene-related community activities/meetings. The items in this theme captured experience, comfort, perceived risk, and acceptability of speaking up in community WASH meetings as well as perceptions of being “listened to” or degree of input during meetings/activities. These items were from three sub-national-level tools. Voice/influence also includes input into or involvement in decision-making (Note that the decision-making domain is focused exclusively on household level decision-making).
- Multiple tools captured participation in water-related income-generating activities (IGAs) at the sub-national level and one indicator was recommended for assessing participation in “water supply and sanitation” IGAs.
- One national-level tool captured impact of WASH conditions/responsibilities on ability to participate in work and a couple of sub-national tools broadly assess impact of WASH conditions on ability to participate in social or leisure activities. Ability to participate in school was not captured (although recommended indicators do exist); however, we did not include any school or workplace focused tools in this review as our focus was individual/household and community.
- Finally, several tools captured participation in community groups, activities, or meetings more generally (i.e., not explicitly related to WASH). These are included below in grey.

Public Participation: Themes assessed in existing tools by level				
Themes	Sub-Themes	Tools measuring sub- theme		Notes
		Nationally representative	Sub-National (e.g., Prog./Proj. Eval)	
(1) Opportunities for participation in WASH-related groups	Opportunities for participation in water-related groups or initiatives	No items identified	EWI; WWAP	*EWI captures presence of water-related groups *WWAP captures who decides date, time, venue for water group meetings
	Opportunities for participation in sanitation-related groups or initiatives	No items identified	No items identified	
	Opportunities for participation in hygiene-related groups or initiatives	No items identified	Recommended indicator, but no specific items identified	*MHM Matters is indicator only (opportunities have been identified for girls and women to discuss menstrual hygiene at community level; for boys and men to learn about menstrual hygiene)
	Opportunities for participation in WASH-related groups or initiatives (unspecified)	No items identified	WASH-GEM	*WASH-GEM captures participation in skills development or opportunities related to WASH
(2) Representation in WASH-related groups	Representation or membership in a water-related group	No items identified	EWI; WWAP	*EWI captures membership in water-users group *WWAP captures membership, criteria for membership of water resource institutions
	Representation or membership in a sanitation-related group	No items identified	ARISE	*ARISE captures involvement in sanitation-related group and whether men and women participate in the group
	Representation or membership in a hygiene-related group	No items identified	No items identified	
	Representation or membership in WASH-related group (unspecified)	No items identified	GR-WASH	*GR-WASH captures F:M ratio of participants in WASH committees and women's perceptions of their participation in WASH committees
(3) Leadership in WASH-related groups	Leadership position in water-focused group	No items identified	WWAP	*WWAP captures gender make-up and process for appointment of managing committee of water resource institutions
	Leadership position in sanitation-focused group	No items identified	ARISE	*ARISE captures experience, acceptability of, familial support for holding leadership position
	Leadership position in hygiene-focused group	No items identified	No items identified	

(4) Voice/influence in WASH-related groups	Ability, comfort voicing opinions in water-focused group; degree to which these are listened to	No items identified	WASH-GEM; WWAP	*WWAP captures evidence in meeting minutes that suggestions made by F/M participants were accepted; who participates in decision-making meetings of water groups
	Ability, comfort voicing opinions in sanitation-focused group; degree to which these are listened to	No items identified	ARISE	*ARISE captures feeling free to express opinions, pressure to support opinion you do not agree with, and perceived influence over decisions in sanitation-focused groups
	Ability, comfort voicing opinions in hygiene-focused group; degree to which these are listened to	No items identified	No items identified	
(5) Participation in WASH-related community activities/ meetings	Participation in water-related community activities/meetings	No items identified	EWI	*ARISE captures participation in community water planning (yes/no)
	Participation in sanitation-related community activities/meetings	No items identified	ARISE	*ARISE captures experience attending community meeting; gathering with neighbors, community members to discuss problems, conduct trainings, make sanitation improvements, petition local leaders about sanitation issues; freedom to go to a sanitation-focused gathering; appropriateness for women to attend sanitation-focused meetings (where men are present); familial support for attending meetings, participating in initiatives to improve sanitation
	Participation in hygiene-related community activities/meetings	No items identified	ARISE; GESI	*ARISE captures experience joining community members to make sanitation locations more female-friendly “such as installing rubbish bins for menstrual materials” *GESI captures men’s participation in hygiene trainings
(6) Leadership in WASH-related community activities/ meetings	Leadership in water-related community activities/meetings	No items identified	No items identified	
	Leadership in sanitation-related community activities/meetings	No items identified	ARISE	*ARISE captures whether respondent serves as “informal leader for sanitation-related issues in this community”; acceptability, familial support for women organizing community sanitation initiatives
	Leadership in hygiene-related community activities/meetings	No items identified	No items identified	
(7) Voice/influence in WASH-related community activities/ meetings	Ability, comfort voicing water-related concerns; degree to which these are listened to in community activities/meetings	No items identified	EWI	*EWI captures comfort, experience speaking in public to help decide on water implementation, raise problems with water services; input into decisions about community water planning
	Ability, comfort voicing sanitation-related concerns; degree to which these are listened to in community activities/meetings	No items identified	ARISE; EWI	*ARISE captures experience, comfort speaking up; perception of being “listened to” by local leaders, men, and women in community about sanitation issues; risk of being scolded/punished; could influence or have influenced community sanitation decisions; appropriate for women to

				express opinions about sanitation issues at meetings (when men are present), bring complaint to local leader *EWI captures comfort speaking in public to help decide about sanitation implementation
	Ability, comfort voicing hygiene-related concerns; degree to which these are listened to in community activities/meetings	No items identified	ARISE	*ARISE captures perceived risk of being scolded/punished for speaking up publicly about menstruation-related issues; appropriateness of women discussing menstruation issues publicly
	Ability, comfort voicing WASH-related concerns; degree to which these are listened to in community activities/meetings (unspecified)	No items identified	GESI; WASH-GEM	*GESI captures level of involvement of women in WASH community decision making *WASH-GEM captures ease of raising concerns about water, sanitation, or hygiene with local leaders or influential people
(8) Participation in high-level WASH positions or governance	Participation in ministries, NGOs, regulatory agencies, or other decision-making bodies	No items identified	No items identified	*Note that this review focuses predominantly on household level surveys, and tools that capture this information may target either professional organizations or recruit from non-household sampling frames
	Participation in high-level careers such as engineering or hydrology for WASH infrastructure maintenance or creation	No items identified	No items identified	*Note that this review focuses predominantly on household level surveys, and tools that capture this information may target either professional organizations or recruit from non-household sampling frames
(9) Participation in WASH-related IGAs	Participation in water-related IGA (e.g. vending or delivering water, or maintaining water source) or job training	No items identified	GR-WASH; Mainstreaming Gender in WASH; SWE	*GR-WASH is indicator only (% of women/girls in job skills training for water supply and sanitation) *Mainstreaming Gender in WASH is indicator only (% of women in water-related employment) *SWE captures constraints and efforts for recruiting women; participation in meetings held for operational, strategic management decisions
	Participation in sanitation-related IGA (e.g. manual scavenging or cleaning public restrooms) or job training	No items identified	Recommended indicator, but no specific items identified	*GR-WASH is indicator only (% of women/girls in job skills training for water supply and sanitation)
	Participation in hygiene-related IGA (e.g. making soaps or sanitary napkins) or job training	No items identified	No items identified	
	Participation in WASH-related IGA or job training (unspecified)	GLAAS	No items identified	*GLAAS captures what percentage of graduates from WASH educational or training institutes are women
(10) Impact of WASH	Impact of WASH conditions/responsibilities on ability to participate in work	PMA2020	No items identified	*PMA2020 captures days of work missed “due to your menstrual period” *JMP - MH Review recommends an indicator “Participation during menstruation - did not go to work”

conditions/responsibilities on ability to participate in public life	Impact of WASH conditions/responsibilities on ability to participate in school	Recommended indicator, but no specific items	No items identified	*JMP - MH Review recommends an indicator “Participation during menstruation - did not go to school”
	Impact of WASH conditions/responsibilities on ability to participate in social activities	Recommended indicator, but no specific items identified	ARISE; HWISE	*JMP - MH Review recommends an indicator “Participation during menstruation - did not participate in social activities” *ARISE captures having to “miss out on other activities that I would like to do” as a result of sanitation-related needs and responsibility or menstruation-related needs *HWISE captures having to “change schedule or plans” due to problems with “water situation”
Themes & Sub-Themes with Possible WASH Implications				
(A) Representation in groups with possible WASH implications		No items identified	EWI; GESI; Oxfam; SOCAT; SWE	*Membership in other community groups may provide opportunities to influence WASH-related decisions or raise WASH issues *SOCAT captures make-up of various community groups, including by political party, race, income level, ethnicity, occupation, and religion, and if certain demographic characteristics prevent individuals from participating *EWI captures trade and business association, credit or microfinance, political group, and other group *GESI captures gender balance in health clubs *SWE captures “limited or negligible representation in the political arena”; selection process in your village for committees
(B) Participation in community activities/meetings with possible WASH implications	LSMS		SOCAT; SWE	*Items included here refer to more general community activities/meetings that may or may not have provided opportunities to discuss WASH-related issues *LSMS captures “free service or participate in community work or meetings” *SOCAT captures participation in community groups, including decision-making and donating time and money *SOCAT captures participation in community activities such as attending meetings, participating in protests, petitioning political leaders, and alerting news media to problem *SWE captures participation in “village-level political meetings,” “public forums”
(C) Voice in community activities/meetings with possible WASH implications		No items identified	IDM; SOCAT; SWE	*Items included here refer to more general community activities/meetings that may or may not have provided opportunities to discuss WASH-related issues *IDM captures extent to which you are able to raise issues in your community that you feel strongly about *SOCAT captures how decision-making within groups is done *SWE captures “lack of voice in political meetings”; speaking in public when decision will negatively impact you, when local leader is present; gained voice in house, society, public

<p>Key take-home points:</p> <ul style="list-style-type: none"> • No nationally representative tools measured participation related to gender and WASH • There were no items that captured representation, leadership, or voice in hygiene-related groups. However, there were items that captured participation and voice in hygiene-related community activities/meetings. • There was a wide range of experiences and perceptions captured under this domain from simple presence of community groups that address water issues, for example, to perceived risk of being scolded or punished for voicing an opinion about a sanitation issue in a community meeting. 	
<p>Opportunities: Leveraging existing data</p> <ul style="list-style-type: none"> • There are a number of existing tools that may measure aspects of participation (e.g., presence of groups, group membership) that have generated data across several contexts. Many of these tools were not included in our review because they do not assess participation as it relates to WASH specifically. However, some of these tools (e.g., World Bank’s Social Capital Assessment Tool (SOCAT), IFPRI’s Women’s Empowerment in Agriculture Index (WEAI)) may be used to inform development of items for large-scale monitoring and/or may provide opportunities for analysis. The project-level WEA, for example, includes items that capture whether water user’s groups exist in the community, whether the respondent is a member, whether the group includes both men and women, whether the respondent feels like they can influence decisions in the group, and to what extent the group influences life in the community. 	
<p>Opportunities: New data sources</p>	
<p>Small-scale monitoring</p>	<ul style="list-style-type: none"> • The Empowerment in WASH Index could be considered for small-scale monitoring of some themes of participation; the tool captures opportunities for participation and representation in water user’s groups as well as participation and voice in community water planning or meetings to address water-related issues. • The ARISE scale could be considered for measurement of sanitation or hygiene-related participation. The scale offers items that capture representation, leadership, and voice in sanitation-related groups as well as participation and voice in both sanitation- and hygiene-related community activities/meetings. These items could potentially be adapted for water and adapted/tested in rural settings. • Items from the WWAP may be candidates for smaller scale monitoring and/or evaluative analysis at the national level. The tool provides interesting items/instructions for analysis (e.g., interrogating meeting minutes in order to determine the influence women had in meetings of water-related groups) which may be useful for a district or country analysis, but may not be as readily amenable to cross-country or longitudinal comparisons.
<p>Large-scale monitoring</p>	<ul style="list-style-type: none"> • Modify non-WASH-specific items from the LSMS to capture “free service or participate in community work or meetings” ... [related to water, sanitation, or hygiene in your community] in addition to free service for other community issues. • Modify non-WASH specific items from the IDM to capture extent to which “you are able to raise [water, sanitation, or hygiene] issues in your community that you feel strongly about” • Develop and test items concerning leadership in WASH-related groups or community activities/meetings (see ARISE items that measure leadership in sanitation groups/initiatives and WWAP tools that measure leadership in water resource institutions)
<p>Considerations</p> <p>Several of the items included above capture the potential for participation (e.g., presence of groups, criteria of group membership, acceptability of women’s participation) rather than actual participation. Even those items that directly measure whether women have experiences participating in or taking leadership roles in various WASH-related groups or initiatives are not necessarily indicative of gender equality in participation. In some cases, women may prefer not to participate in certain community activities and/or serve as members or leaders of certain community groups because of the time burden these require, for example. Women’s ability to choose how, when, and to what degree she wants to be involved in groups or initiatives is the most proximate indication of women’s agency. Therefore, it is important to consider measurement not only of what women do (i.e., functionings), but also what women have the opportunity to do (i.e., capacities).⁵⁷</p> <p>While this review was focused on the individual/household and community settings, we acknowledge that there may be other tools focused on the school and workplace settings that may better capture theme 9 (Impact of WASH conditions/responsibilities on ability to participate in public life). The JMP - MH Review, for example, recommends the indicator “participation during menstruation” and specifies that these activities should include work, school, and social activities. It is important to note for this indicator as well as for the PMA2020 item listed under theme 9, inability to participate in aspects of public life “due to your menstrual period” or “during menstruation” does not capture the reason for the lack of participation. For future monitoring, it will be important to construct items that can differentiate between inability to participate during menstruation due to social exclusion/norms, pain, or lack of proper hygiene facilities or materials.</p>	
<p>57. Nussbaum MC. Women and Human Development: The Capabilities Approach. Cambridge: Cambridge University Press; 2000.</p>	

Appendix 12: Ability to Exercise Agency: *Freedom of Movement*

Freedom of movement relates to individuals' autonomy to move freely both to access water, sanitation, and hygiene facilities, including accessing resources to meet menstrual needs, and without hindrance as a result of limited WASH access.

Summary

Primary themes identified within the *Freedom of Movement* dimension include:

1. Ability to access WASH locations
2. Ability to access WASH-related public life

The following theme was identified that may have WASH implications:

- A. Freedom to access markets

Overall,

- Items pertaining to WASH-related freedom of movement were found only in the ARISE freedom of movement scale and indices, which specifically focus on sanitation and menstruation. No nationally representative tools were identified that address WASH-related freedom of movement.
- Restrictions on freedom of movement can affect both WASH access and be a result of limited WASH access. Restrictions on freedom of movement may constrain individuals' ability to access WASH facilities and WASH-related meetings and events. Limited access to WASH facilities may constrain individuals' ability to go places away from the home. Freedom of movement constraints on access to WASH facilities is likely most relevant to individuals who rely on facilities located outside of their homes. Constraints related to meeting attendance and constraints on freedom of movement as a result of limited WASH facilities may be more broadly relevant.

Freedom of Movement: Themes assessed in existing tools by level				
Themes of Freedom of Movement	Sub-Themes	Tools measuring sub- theme		Notes
		Nationally representative	Sub-National (e.g., Prog./Proj. Eval)	
(1) Ability to access WASH locations	Ability to access water locations	No items identified	No items identified	
	Ability to access sanitation locations	No items identified	ARISE	*ARISE contains scale items related to needing permission or accompaniment to access sanitation locations (or not being able to go to these locations at all) and an index related to restrictions on freedom of movement due to limited access to sanitation facilities
	Ability to access locations to practice hygiene behaviors	No items identified	ARISE	*ARISE contains scale items related to needing permission or accompaniment to access locations to change menstrual materials (or not being able to go to these locations at all) and an index on restrictions on freedom of movement related to inability to access locations for meeting menstrual needs * No items related to accessing locations for other hygiene activities, such as bathing
	Ability to access locations to acquire hygiene-related materials/goods	No items identified	No items identified	* No items related to accessing markets/places specifically to acquire hygiene or menstrual materials/goods * General items about freedom of movement to access markets exist and could be adapted or combined with questions about material access ¹
(2) Ability to access WASH-related public life	Ability to access WASH-related meetings/events	No items identified	ARISE	* ARISE contains items specific to sanitation-focused meetings or public gatherings
	Ability to access WASH service providers	No items identified	No items identified	* No items related to accessing service providers
Themes & Sub-Themes with Possible WASH Implications				
(A) Freedom to access markets			ITGA	*ITGA captures if participant has ever gone to the market, either alone or with friends

<p>Key take-home points:</p> <ul style="list-style-type: none"> • No items have been identified related to freedom of movement for accessing water. • The ARISE scale contains items related to individuals' freedom to access sanitation locations for both urination/defecation and menstrual needs. • No items have been identified related to freedom of movement for non-menstruation related hygiene needs, such as bathing. In addition, the ARISE scale items related to menstruation are specific to accessing sanitation locations; menstruating individuals may use other locations to change, wash, dry, or acquire menstrual materials. • Lack of access to water, sanitation, or hygiene may constrain individuals' freedom of movement, such as limiting where they go or how far they are willing to travel. The ARISE indices contain items related to such constraints for sanitation and menstrual needs, but there are no existing items for such constraints related to water access. 	
<p>Opportunities: Leveraging existing data</p> <ul style="list-style-type: none"> • None identified. 	
<p>Opportunities: New data sources</p>	
<p>Small-scale monitoring</p>	<ul style="list-style-type: none"> • Programs focused on women's ability to access WASH facilities may leverage the existing ARISE scales related to freedom of movement for sanitation and menstruation. Items could be adapted to focus on water facilities and other hygiene needs, such as bathing. The menstruation-related freedom of movement items may need to be supplemented to extend beyond access to sanitation locations for changing menstrual materials, since women may use other locations to change their materials and may need access to locations for other needs such as acquiring materials or pain management resources, washing and drying reusable materials, disposing of materials, etc. • The ARISE indices related to restrictions on freedom of movement due to lack of sanitation access or access to locations for meeting menstrual needs could be used by programs interested in women's freedom of movement away from home. A similar index could be developed to assess restricted freedom of movement related to insufficient water access. • Consider additional items not specific to WASH from the pro-WEAI⁵⁸, including WASH-specific additions to the pro-WEAI used by Sinharoy et al.⁵⁹ in India, a survey in Bangladesh,³⁴ the Household Level Empowerment tool.³⁵
<p>Large-scale monitoring</p>	<ul style="list-style-type: none"> • Develop and test items related to freedom of movement to access WASH facilities and meetings/events, and items related to restrictions on freedom of movement as a result of limited WASH access (see ARISE scale and index for potential adaptation). • Consider additional items not specific to WASH that have been used at a national level, such as the India Human Development Survey - II Women's Questionnaire: Mobility³⁶ and the DHS.⁶⁰
<p>Considerations</p> <p>Freedom of movement is inherently linked to other dimensions, such as safety, since individuals' movements may be restricted by perceived or real safety concerns. When measuring freedom of movement, it is important to consider nuanced differences between constraints on the exercise of agency (e.g. choosing which sanitation location to use based on external factors like neighborhood safety) vs. constraints that reflect a lack of agency (e.g. needing to ask permission or be accompanied to water points or sanitation locations).</p> <p>Metrics for freedom of movement typically focus on restrictions imposed upon women, most often those imposed by husbands and other family members rather than the broader social environment,⁶¹ which is the focus of WASH-related measures of freedom of movement restrictions on access to WASH facilities and meetings. However, other than the ARISE indices, no known items exist that measure restrictions on women's freedom of movement as a result of the physical or built environment (e.g. lack of sanitation facilities).</p> <p>Menstrual status and other intersectional considerations - like race/ethnicity, caste, class, age/life stage, and religion - may impact women's freedom of movement.</p>	
<p>58. Malapit H, Quisumbing A, Meinzen-Dick R, et al. Development of the project-level Women's Empowerment in Agriculture Index (pro-WEAI). <i>World Dev</i> 2019; 122: 675-92.</p> <p>59. Sinharoy SS, Reese H, Routray P, Caruso B, Clasen T. Effects of a piped water and sanitation intervention in rural Odisha, India on women's empowerment: A matched cohort study. <i>UNC Water and Health</i>; 2017; Chapel Hill, NC; 2017.</p> <p>24. Sinharoy SS, Waid JL, Ali M, Yount KM, Thilsted SH, Webb Girard A. Resources for women's agency, household food security, and women's dietary diversity in urban Bangladesh. <i>Global Food Security</i> 2019; 23: 1-8.</p> <p>35. Samanta T. Women's empowerment as self-compassion?: Empirical observations from India. <i>PLOS ONE</i> 2020; 15(5): e0232526.</p> <p>36. Desai S, Vanneman R. India Human Development Survey-II (IHDS-II). Ann Arbor, MI: Inter-University Consortium for Political and Social Research, 2015.</p> <p>60. Demographic and Health Surveys. Demographic and Health Surveys: Women's Questionnaire. 2019.</p> <p>61. Heckert J, Myers E. Toward better measurement of gendered freedom of movement in surveys. <i>CGIAR Research Program on Policies, Institutions, and Markets</i> 2020.</p>	

Appendix 13: Multi-level Enabling Environment: *Social Context*

Relationships, interactions, and inter-group dynamics and social rules (including social inclusion, social cohesion, social norms, and community solidarity) that may impact access to WASH.

Summary

Primary themes identified within the *Social Context* dimension include:

1. Social harmony
2. Shared goals
3. Group solidarity
4. Social inclusion
5. Norms (WASH-related practices, labor, decision-making, and community participation)

The following themes were identified that may have WASH implications:

- A. Identifiers of social position
- B. Social harmony with possible WASH implications
- C. Group solidarity with possible WASH implications
- D. Attitudes toward women
- E. Norms and attitudes around group participation

Overall, no national-level tool specifically measured aspects of the social context that act as barriers or enablers to one's access to or participation in WASH and WASH-related activities. The majority of these tools focus on how aspects of the social context are related to water and sanitation issues in the community. With the exception of some norms-related items, the social context items captured in this review were not gender-specific and would require sex-disaggregated data and analyses in order to elucidate gendered differences.

- Social harmony (i.e., the degree of conflict or crime - indicative of social disorder - within a community) was assessed by two sub-national tools that included items dealing with degree of conflict, quarreling, or blaming associated with water or sanitation issues in the community.
- Only one tool included items related to shared goals; this was a sub-national tool which dealt only with shared sanitation goals and the degree to which individuals are motivated by these shared goals.
- Only one tool included items related to group solidarity (i.e., the community's tendency to take joint action to address WASH issues); this was a sub-national tool that dealt with beliefs about community members' willingness to contribute resources to or help with

improvements related to sanitation in the community. Aspects of group solidarity related to experiences participating in collection action are captured in the Public Participation brief.

- Social inclusion was captured qualitatively by two tools at the sub-national level, which both asked broadly about how various social identities affect one’s access to and participation in WASH.
- Norms were captured quantitatively by four tools at the sub-national level, which asked about gendered expectations around household labor, decision-making, and public participation.
- Finally, some tools captured aspects of the social context that are not directly related to WASH (A, B, C, and D above), but may have important implications for WASH; these are included below in grey. Included here are ‘Identifiers of social position,’ which can be used to disaggregate data, understand intersectionalities between gender and other forms of discrimination or inequality, as well as to identify clusters of deprivation related to WASH.

Social Context: Themes assessed in existing tools by level				
Themes	Sub-Themes	Tools measuring sub- theme		Notes
		Nationally representative	Sub-National (e.g., Prog./Proj. Eval)	
(1) Social harmony	Degree of conflict around water issues in the community or household	No items identified	Odisha-WCM	*Odisha-WCM captures experience quarreling with household members over water collection
	Degree of conflict around sanitation issues in the community or household	No items identified	ARISE	*ARISE captures fighting, unresolved conflicts, and blame/accusing around sanitation issues in the community
	Degree of conflict around hygiene issues in the community or household	No items identified	No items identified	
	Degree of conflict around WASH in the community or household	No items identified	WASH-GEM	
(2) Shared goals	Perception that water-related goals are shared by other members of the community	No items identified	No items identified	

	Perception that sanitation-related goals are shared by other members of the community	No items identified	ARISE	*ARISE captures shared “common goals for improving sanitation in the community” and “shared sanitation goals motivate me to work with others”
	Perception that hygiene-related goals are shared by other members of the community	No items identified	No items identified	
(3) Group solidarity	Tendency for the community to take joint action to address water issues	No items identified	SOCAT	*SOCAT captures likely cooperation in the community to solve a water supply problem
	Tendency for the community to take joint action to address sanitation issues	No items identified	ARISE	*ARISE captures confidence that the community will work together to achieve sanitation goals; perception that people in this community would cooperate to solve a sanitation-related problem, be willing to contribute resources toward sanitation goals, be willing to help each other with sanitation projects
	Tendency for the community to take joint action to address hygiene issues	No items identified	No items identified	
(4) Social inclusion	Perceptions of or experiences with discrimination due to social identity that impacts access to or participation in WASH	No items identified	SOCAT; WaterAid - Understanding Equality; WWAP	*SOCAT captures if specific groups are denied access to water, and if membership in community groups is dependent on demographic factors, such as religion, occupation, ethnicity, or educational attainment *WaterAid - captures factors (e.g., age, class religion, disability, sexual orientation, culture, religion, politics) that influence women’s status, participation, or access in relation to WASH *WWAP captures instances of discrimination in water / sanitation supply, reasons, how resolved
(5) Norms (WASH-related practices, labor, decision-making, and community participation)	Water-related household labor	No items identified	EWI; GESI; Oxfam; WASH-GEM	*EWI captures whether water fetching is done as a result of community expectations and desire for approval *GESI captures degree of gender balance in fetching water for domestic use *Oxfam captures acceptability to shame a man for doing housework (including fetching water) *WASH-GEM captures how much of a respondent’s social network believes that maintaining a water system is a man’s responsibility and collecting is a woman’s responsibility
	Sanitation-related household labor	No items identified	ARISE; WASH-GEM	*ARISE captures if women are expected to assist adult and child dependents in urination and defecation, including cleaning children afterward *ARISE captures if women are expected to clean sanitation locations and clean feces from their home or compound *ARISE captures if women risk abuse by family for not completing sanitation-related chores

				*WASH-GEM captures how much of a respondent's social network believes that building a toilet or maintaining a toilet is a man's responsibility
	Hygiene practices	No items identified	COVID-19 MTRA	*COVID-19 MTRA captures to if community members wash hands at the appropriate time, including entering public spaces, and if they would approve of washing hands with soap before eating and when arriving homes
	Menstruation and hygiene-related household labor	No items identified	ARISE; Oxfam; SHARE	*ARISE captures if women are expected to help or accompany girls with menstruation needs *ARISE captures if women are expected to wash clothes that become dirty due to sanitation conditions *Oxfam captures acceptability of shaming a man for doing housework (including bathing dependents and washing clothes or dishes) *Indicator: Engagement of men in hygiene-related activities (SHARE)
	Gendered expectations for water-related decision-making	No items identified	No items identified	
	Gendered expectations for sanitation-related decision-making	No items identified	ARISE; EWI	*ARISE captures if it is acceptable for women to disagree with their husbands in household discussions about sanitation *ARISE captures if women risk abuse by family if they argue with household members about sanitation issues *EWI captures if the reason why a decision about purchasing services is made is as a result of community expectations and desire for approval
	Gendered expectations for menstruation and hygiene-related decision-making	No items identified	ARISE	*ARISE captures if it is acceptable for a woman to express menstruation-related concerns when her family is deciding on sanitation location
	Gendered expectations for participation in community water activities	No items identified	EWI	*EWI captures if participation in community water groups is as a result of family or community expectations and desire for approval
	Gendered expectations for participation in community sanitation activities	No items identified	ARISE	*ARISE captures if it is appropriate for women to attend sanitation meetings, speak at sanitation meetings (including if men are present), and lead or participate in sanitation initiatives acceptability of women expressing opinions that aren't their husbands *ARISE captures acceptance of men or women's roles in leadership in community decisions on sanitation *ARISE captures social acceptability of men and women engaging in technical work related to sanitation (e.g., building latrines, emptying pits)

	Gendered expectations for participation in community menstruation or hygiene activities	No items identified	ARISE; WASH-GEM	*ARISE captures appropriateness of speaking publicly on menstruation, including in front of men *WASH-GEM captures how much of a respondent's social network believes that hygiene promotion is a woman's responsibility
Themes & Sub-Themes with Possible WASH Implications				
(A) Identifiers of social position	Demographic information or indicators of social identity (e.g., age, education, marital status, ability, caste, class)	Various	Various	*Several identifiers of social position are routinely captured by existing tools. Others may be less so; important to consider identifiers of social position as intersecting with other markers of identity, such as gender as well as to assess WASH access amongst relevant vulnerable identities in context.
(B) Social harmony with possible WASH implications	Neighborhood safety/crime	No items identified	Step toe & Feldman ⁶² SOCAT	*ARISE incorporates an existing neighborhood disorder scale (Step toe & Feldman) ⁶² capturing litter, smells, walking after dark, vandalism, problems with dogs, noise pollution, lack of entertainment, traffic and road safety, places to shop, and disturbances from neighbors *SOCAT captures feelings of safety in neighborhood and when home alone, and if community is peaceful or marked by violence
	Trust in community members and willingness of neighbors to help and support one another	No items identified	SOCAT	*SOCAT captures belief that neighbors can be trusted, that they are willing to help, and that they are willing to take advantage *SOCAT captures if neighbors would be willing to help in the event of something unfortunate happening *SOCAT captures degree of trust in people from specific categories, including along demographic lines such as ethnicity, and along professional lines such as police, shopkeepers, and healthcare workers
(C) Group solidarity with possible WASH implications	Tendency for joint action to solve community problems or make community improvements	No items identified	ARISE; SOCAT	*ARISE captures tendency for people in the community to help each other address issues that affect the whole community *SOCAT captures willingness to donate time and money to solve problems that affect the entire community *SOCAT captures if organizations or groups are willing to work or interact with other groups inside and outside the village/neighborhood to achieve goals
(D) Attitudes toward women	Attitudes about women that may impact women's ability to access or participate in WASH	No items identified	SHARE; SWE	*SHARE is indicator only (changes in gender roles; changes in attitudes supporting changes in work roles) *SWE captures changes in mindset about independence of women; women gaining respect/power in household or society; presence of women role models
(E) Norms and attitudes around group participation	Likelihood of being criticized or sanctioned for not participating in community organizations	No items identified	SOCAT	

Key take-home points:	
<ul style="list-style-type: none"> No national-level tool assesses any of the themes related to social context; however, our review focused on individual/household level and community level tools and, therefore, may not have identified existing national-level or other tools that capture certain aspects of the enabling environment such as the social context. 	
Opportunities: Leveraging existing data	
<ul style="list-style-type: none"> As mentioned above, in the section on themes and sub-themes with possible WASH implications, several identifiers of social position are routinely captured by existing tools. These data can be utilized for disaggregation to understand associations between gender and WASH access. Discrimination on the basis of gender also frequently intersects with discrimination on the basis of other social identities or positions. The UN Women report on Gender Equality in the 2030 Agenda for Sustainable Development provides a number of common forms of discrimination faced by women and girls, including sexual orientation and gender identity, immigration status, family status, religion, geography, income, HIV status, marital status, race/ethnicity, origin or nationality, caste, age, ability, and indigenous status.³³ Analyses could leverage existing data concerning context-relevant forms of discrimination to identify intersectionalities salient for WASH access. 	
Opportunities: New data sources	
Small-scale monitoring	<ul style="list-style-type: none"> The ARISE scale could be considered for measurement of aspects of the social context that influence access to sanitation and participation in sanitation-related activities. While the tool is designed specifically for sanitation-related issues in urban settings, it offers items that capture themes across the social context domain and could potentially be adapted for water, hygiene, or other areas and adapted/tested in rural settings. The EWI offers items that identify whether certain behaviors are undertaken due to individual preference or to adhere to family or community expectations. These items could be adopted programmatically to understand if individual or community shifts should be targeted.
Large-scale monitoring	<ul style="list-style-type: none"> Consider expansion of ‘demographics’ or ‘personal and household characteristics’ modules in existing large-scale monitoring efforts to enable analysis of the impacts of intersectional social position/identity on WASH access Develop and test items related to how the social context impacts hygiene-related issues (particularly those not related to menstruation) and how hygiene-related issues are addressed within the social context.
Considerations	
<p>With the exception of some norms-related items, the social context items captured in this review are not gender-specific. To capture gendered differences, one would need responses from multiple household members of various genders in order to disaggregate responses by gender. No norms-related items captured identities other than gender; norms for how people of certain ages, sexualities, castes, etc. are expected to behave can only be identified by disaggregation according to those groups.</p> <p>The aspects of the social context that are most salient for gender equality in WASH access and WASH participation may differ by context. In many cases, it may be necessary or beneficial to conduct some degree of formative research within the given context in order to first determine which aspects of the social context to measure in more granular detail and/or to best contextualize existing measurement tools.</p>	
<p>62. Steptoe A, Feldman PJ. Neighborhood problems as sources of chronic stress: development of a measure of neighborhood problems, and associations with socioeconomic status and health. <i>Ann Behav Med</i> 2001; 23(3): 177-85.</p> <p>33. UN Women. Turning promises into action: Gender equality in the 2030 Agenda for Sustainable Development. New York: UN Women, 2018.</p>	

Appendix 14: Multi-level Enabling Environment: *Political Context*

Legal structures, including laws and policies, budgets, and local leadership that can influence the realization of individuals' WASH-related rights and access.

Summary

Primary themes identified within the *Political Context* dimension include:

1. Laws and policies for WASH-related rights
2. Budgeting and resource targeting for vulnerable populations and gender-sensitive WASH
3. Capacity for gender-sensitive WASH programming and service provision
4. Governance structures for diverse participation
5. Local leadership

Overall, the political context for enabling gender equality in ability to meet basic WASH needs was relatively well covered, but only related to water and sanitation. It is important to note that this review was focused on tools used for individual- and household-level monitoring and, therefore, may have missed some existing tools capable of measuring higher-level aspects of the enabling environment, including political context.

- Laws and policies for WASH-related rights, which also included target-setting and policies/procedures for tracking progress toward targets, were captured by one national-level and a few sub-national-level tools. The majority of items within this theme were focused on water policies; none dealt with hygiene laws or policies.
- Within the theme 'budgeting for WASH', one national-level tool dealt with availability and amount of public funding for 'water and sanitation'. One additional, sub-national tool dealt with budgeting for water policies and, specifically, budget allocated within water policies for identifying and addressing gender concerns. No tools dealt with budget related to hygiene policies or programs.
- Capacity for gender-sensitive WASH includes technical skills, awareness, clear responsibilities, time, and human resources to implement gender-sensitive WASH policies or programs at governmental, local, institutional, or service provider levels. This theme was assessed by three, sub-national tools. Most items identified within this theme dealt with various aspects (e.g., number, type, perception of, and "level" or reach of) public awareness campaigns related to WASH and gender. While some items referred to 'WASH' generally, none dealt specifically with sanitation or hygiene alone.
- Governance structures for diverse participation included items related to participatory mechanisms for identifying needs of vulnerable groups, hiring and promotion processes for water-related ministries to ensure gender parity, and integration and coordination between government and utilities to support delivery of water and sanitation to vulnerable groups. One national-level and one sub-national-level tool were identified for this theme and no items were identified for governance structures related to hygiene.
- Two sub-national tools included items that assessed the nature of relations with local leaders as they relate to water or sanitation issues. The items dealt with the availability and responsiveness of local leaders.

Political Context: Themes assessed in existing tools by level

Themes	Sub-Themes	Tools measuring sub- theme		Notes
		Nationally representative	Sub-National (e.g., Prog./Proj. Eval)	
(1) Laws and policies for WASH-related rights	Laws and policies (including targets and measures of tracking progress toward targets) for water-related rights	EAS; GLAAS	GWA-GSM; UIS; WWAP	<p>*EAS captures presence of water and sanitation policy, and policies in other sectors that recognize differentiated WASH needs of vulnerable groups</p> <p>*GLAAS captures if right to water is captured in constitution or legislation</p> <p>*GLAAS captures if policies include measures to extend drinking water services to vulnerable populations, including elderly people, ethnic/religious minorities, indigenous populations, internally displaced persons, people disproportionately affected by climate change, people living with disabilities, people living in poverty, and women and girls, and if progress is tracked and reported</p> <p>*GWA-GSM captures whether water utilities are influenced by national gender policies or international laws</p> <p>*UIS is indicator only (evidence that adjudication procedures consider gender rights)</p> <p>*WWAP captures policies of water service providers for dealing with complaints; satisfaction of users with these policies/mechanisms</p> <p>*WWAP captures presence of gender-specific guidelines and declarations related to water; proportion of water policy frameworks that are gender-sensitive; executive orders issued for gender-sensitive water policy objectives; procedures for collecting sex-disaggregated data when planning for water programs; use of social safeguards; processes, directives to ensure access to water and sanitation for most vulnerable; evidence of state commitment to right to water and sanitation</p>
	Laws and policies (including targets and measures of tracking progress toward targets) for sanitation-related rights	EAS; GLAAS	UIS; WWAP	<p>*EAS captures presence of water and sanitation policy, and policies in other sectors that recognize differentiated WASH needs of vulnerable groups</p> <p>*GLAAS captures if right to sanitation is captured in constitution or legislation</p> <p>*GLAAS captures if policies include measures to extend sanitation services to vulnerable populations, including elderly people, ethnic/religious minorities, indigenous populations, internally displaced persons, people disproportionately affected by climate change, people living with disabilities, people living in poverty, and women and girls, and if progress is tracked and reported</p> <p>*UIS is indicator only (evidence that adjudication procedures consider gender rights)</p> <p>*WWAP captures policies/mechanisms for reporting discrimination in “water supply and sanitation to certain localities or communities”; processes, directives to ensure access to water and sanitation for most vulnerable; evidence of state commitment to right to water and sanitation</p>
	Laws and policies (including targets and measures of tracking progress toward targets) for hygiene-related rights	GLAAS	No items identified	<p>*GLAAS captures if policies include measures to extend handwashing services to vulnerable populations, including elderly people, ethnic/religious minorities, indigenous populations, internally displaced persons, people disproportionately</p>

				affected by climate change, people living with disabilities, people living in poverty, and women and girls, and if progress is tracked and reported *GLAAS captures presence of safe MHM policies and targets
(2) Budgeting and resource targeting for vulnerable populations and gender-sensitive WASH	Budgeting and resource targeting for implementation of gender-sensitive water policies or programs that are gender-sensitive or target vulnerable populations at governmental, local, institutional, or service provider levels	EAS; GLAAS	WWAP	*EAS captures public financial resources spent and specific funding within public budgets for ensuring access to safe drinking water and sanitation by vulnerable groups *GLAAS captures if there are specific measures to target resources toward drinking water for vulnerable populations, including elderly people, ethnic/religious minorities, indigenous populations, internally displaced persons, people disproportionately affected by climate change, people living with disabilities, people living in poverty, and women and girls *WWAP captures number of water policies that have budget allocated for identifying and integrating gender concerns; absolute amount of budget dedicated to M&E for gender results of water policies
	Budgeting for implementation of gender-sensitive sanitation policies or programs that are gender-sensitive or target vulnerable populations at governmental, local, institutional, or service provider levels	EAS; GLAAS	No items identified	*EAS captures public financial resources spent and specific funding within public budgets for ensuring access to safe drinking water and sanitation by vulnerable groups *GLAAS captures if there are specific measures to target resources toward sanitation for vulnerable populations, including elderly people, ethnic/religious minorities, indigenous populations, internally displaced persons, people disproportionately affected by climate change, people living with disabilities, people living in poverty, and women and girls
	Budgeting for implementation of gender-sensitive hygiene policies or programs that are gender-sensitive or target vulnerable populations at governmental, local, institutional, or service provider levels	GLAAS	No items identified	*GLAAS captures if there are specific measures to target resources toward hand hygiene for vulnerable populations, including elderly people, ethnic/religious minorities, indigenous populations, internally displaced persons, people disproportionately affected by climate change, people living with disabilities, people living in poverty, and women and girls
(3) Capacity for gender-sensitive WASH programming and service provision	Technical skills, awareness, clear responsibilities, time, and human resources to implement gender-sensitive water policies or programs at governmental, local, institutional, or service provider levels	No items identified	WWAP	*WWAP captures number and type of public awareness efforts about gender equality with regard to water; community members' perceptions of these efforts; number and type of reports disseminated containing gender-specific results of water programs
	Technical skills, awareness, clear responsibilities, time, and human resources to implement gender-sensitive sanitation policies or programs at governmental, local, institutional, or service provider levels	No items identified	No items identified	
	Technical skills, awareness, clear responsibilities, time, and human	No items identified	No items identified	

	resources to implement gender-sensitive hygiene policies or programs at governmental, local, institutional, or service provider levels			
	Technical skills, awareness, clear responsibilities, time, and human resources to implement gender-sensitive WASH (unspecified) policies or programs at governmental, local, institutional, or service provider levels	GLAAS	GESI; GR-WASH	*GLAAS captures if gender is included in human resources assessments for WASH *GESI captures “level of community awareness campaigns” around WASH and gender/social inclusion *GR-WASH is indicator only (% of WASH staff aware of links between WASH and prevention of violence against women and girls)
(4) Governance structures for diverse participation	Governance structures that prioritize local and diverse knowledge and participation for water decisions	EAS; GLAAS	EWI; WWAP	*EAS captures participatory mechanisms to identify water and sanitation needs of vulnerable groups; use of integrated approach (involving different administrations) to support delivery of water and sanitation to vulnerable groups *GLAAS captures the extent to which the government engages with local users and communities, specifically women, on policy, planning, and management of drinking-water *GLAAS captures if laws governing engagement with local users and communities specifically mention women’s involvement *EWI captures if lack of participation in community decisions is a result of absence of community groups or local authorities *WWAP captures measures for improving gender parity, equity, and redressal mechanisms in HR policies of water ministries and utilities (policy for promotions, advertising vacancies, selection process, filing complaints); stakeholders involved in identification of gender concerns while formulating water policy frameworks; coordination mechanisms between ministries and utilities for water-related services
	Governance structures that prioritize local and diverse knowledge and participation for sanitation decisions	EAS; GLAAS	No items identified	*EAS captures participatory mechanisms to identify water and sanitation needs of vulnerable groups; use of integrated approach (involving different administrations) to support delivery of water and sanitation to vulnerable groups *GLAAS captures the extent to which the government engages with local users and communities, specifically women, on policy, planning, and management of sanitation
	Governance structures that prioritize local and diverse knowledge and participation for hygiene decisions	GLAAS	No items identified	*GLAAS captures the extent to which the government engages with local users and communities, specifically women, on policy, planning, and management of hand hygiene promotion
	Governance structures that prioritize local and diverse knowledge and participation for WASH (unspecified) decisions	No items identified	Recommended indicator, but no items identified	*GR-WASH is indicator only (F:M ratio of WASH program staff)

(5) Local leadership	Nature of interactions with local leaders concerning water-related issues (particularly concerning availability, responsiveness, and conflict)	No items identified	EWI	*EWI captures availability of local authorities to speak with concerning community water decisions
	Nature of interactions with local leaders concerning sanitation-related issues (particularly concerning availability, responsiveness, and conflict)	No items identified	ARISE	*ARISE captures perception that interactions with local leaders about sanitation issues are generally free of conflict; local leaders listen to opinions about sanitation issues
	Nature of interactions with local leaders concerning hygiene-related issues (particularly concerning availability, responsiveness, and conflict)	No items identified	No items identified	

Key take-home points:	
<ul style="list-style-type: none"> • Only one national-level tool was identified that dealt with any themes under Political Context. • The WWAP and the EAS are both completed via convening of regional or national-level stakeholders and with reference to existing data. These tools require intensive workshops to complete and are intended to provide results to guide priority setting for the given context. These may have limited utility in terms of longitudinal or cross-country comparison. 	
Opportunities: Leveraging existing data	
<p>The GLAAS tool used by UN-Water (which is designed to aid ‘policy- and decision-makers at all levels with a reliable, easily accessible, comprehensive and global analysis of the investments and enabling environment to make informed decisions for sanitation, drinking-water and hygiene’) is being revised and is expected to include relevant items and indicators. The data generated from the revised tool may provide important insights about the political context for WASH and gender equality, including the ability to assess presence of policies, budgeting, human resources, and monitoring to extend water, sanitation, and drinking water to vulnerable groups (including women, elderly people, people living with disabilities, and internally displaced persons, among others), and to assess presence of laws governing engagement with water users and community, and if those laws specifically engage with eliciting women’s participation</p>	
Opportunities: New data sources	
Small-scale monitoring	<ul style="list-style-type: none"> • The items from the WWAP tool listed in the table above are almost all intended for qualitative data collection. These qualitative tools may be useful for small-scale or within-country assessments, particularly if users are interested in Laws and Policies for water-related rights. Modification and testing would be required in order to adapt these tools to assess these themes as they relate to hygiene. • The ARISE and EWI tools could be considered for small-scale measurement of local leadership. The ARISE tool is designed specifically for sanitation-related issues in urban settings but could potentially be adapted for water, hygiene, or other areas and adapted/tested in rural settings.
Large-scale monitoring	<ul style="list-style-type: none"> • Develop and test items to measure key aspects of the Political Context pertinent for delivering gender equitable WASH services across country contexts. • Modify existing items from the EAS related to water and sanitation to test for use in reference to the political context around hygiene.
Considerations	
<p>Tools or items that capture the existence of laws or policies that enshrine non-discrimination on a formal level may not be sufficient to capture the actualized effect of such laws and policies. Governments or institutions with gender-sensitive laws and policies to support equal access to WASH may or may not, for example, also have access to the budget to be able to effectively implement or enforce these laws or policies. Therefore, it is important for future monitoring and measurement of political context in WASH to move beyond presence/absence of laws and policies to consider measurement of demonstrated political will for enabling gender equality in WASH and assessments of whether and how policies are enacted, enforced, or even known. At the very least, reporting on data about the presence or absence of policies should transparently note limitations of what remains unknown. Additionally, laws and policies may not apply to individuals without legal standing (e.g., those without citizenship or residency status, internally displaced persons, those living in informal settlements without legal tenure, etc.) These forms of legal discrimination often intersect with gender-based discrimination.⁶³</p> <p>In some contexts, laws and policies, requirements for governance structures, or other legal directives may actually create barriers to ensuring access to WASH services. For example, excessive requirements for small-scale operators in terms of licensing, permitting, or approvals for construction of WASH facilities may make it difficult or impossible for service providers to operate in certain areas.⁶⁴ It is important to assess the content and implications of various laws and policies in order to understand whether they ultimately act as barriers or enablers to WASH access, particularly for vulnerable groups.</p>	
<p>63. Global Campaign for Equal Nationality Rights. n.d. The Violence of Gender Discrimination in Nationality Laws. retrieved from https://equalnationalityrights.org/news/76-gender-violence-discrimination-nationality-laws</p> <p>64. Sinharoy S, Pittluck R, Clasen T. Review of drivers and barriers of water and sanitation policies for urban informal settlements in low- and middle-income countries. Utilities Policy. 2019 Oct;(60). doi:10.1016/j.jup.2019.100957</p>	

Appendix 15: Multi-level Enabling Environment: *Economic Context*

The economic context – including both physical market places and market systems – can be an enabling environment in which individuals can access the goods and services that they need for WASH, as well as participate for economic benefit.

Summary

Primary themes identified within the *Economic Context* dimension include:

1. Presence and use of WASH options
2. Affordability/cost of WASH options
3. WASH-related employment and job market
4. Access to credit or subsidies

Overall, no national tools contain items on the economic context for WASH that go beyond the ability to afford water and who carries out desludging for latrines. The majority of tools identified for this domain are programmatic tools involving sanitation services, the availability and affordability of menstrual hygiene materials, and women's involvement in WASH-related job training and employment. Of all hygiene options, only items on menstruation were identified; there were no tools that ask about affordability of soap, detergent, or other items necessary for hygiene.

- Three national tools capture sub-themes of presence and use of WASH options centered around services and utilities. Five sub-national tools capture availability of menstrual hygiene products in the marketplace; no tools capture availability of water and sanitation consumable materials such as water treatment products or toilet paper.
- No national items ask directly about affordability of WASH options; one item from MICS contains a response option to capture if lack of sufficient water is due to cost. Three sub-national tools contain items about the cost or affordability of water, and there four tools with items or indicators on affordable menstrual hygiene materials. No tools exist that capture affordability of WASH infrastructure.
- There are no national tools that have questions on WASH-related employment or the job market. Of the four sub-national tools that cover this concept, there are only indicators or qualitative questions; no individual quantitative items have been identified.
- Four sub-national tools contain items on access to credit or financial assistance that could be used for WASH purposes.

Economic Context: Themes assessed in existing tools by level

Themes	Sub-Themes	Tools measuring sub- theme		Notes
		Nationally representative	Sub-National (e.g., Prog./Proj. Eval)	
(1) Presence and use of WASH options	Presence in market of satisfactory water services or utilities	MICS	GWA-GSM; WWAP	*MICS captures the main reason for inability to access water in sufficient quantities when needed, including availability and cost *WWAP captures how many female/male headed households purchase water regularly from water vendors, at what price *WWAP captures qualitatively whether there is discrimination in water and sanitation services to certain communities
	Presence in market of satisfactory water hardware or infrastructure	No items identified	No items identified	
	Presence in market of satisfactory consumable products related to water use (e.g. filters or chlorine tablets)	No items identified	No items identified	
	Presence of satisfactory sanitation services or utilities in markets	DHS; JMP Household; MICS	ARISE; EWI; WWAP	*DHS, JMP Household, MICS capture whether pit emptying done by a service provider; *JMP Household asks for service provider info *ARISE captures if respondent is comfortable reporting problems to a service provider *EWI captures if an individual has the capability to purchase alternate sanitation services, or if what is currently purchased is all that is available *WWAP captures qualitatively whether there is discrimination in water and sanitation services to certain communities
	Presence of satisfactory sanitation hardware or infrastructure in markets	No items identified	No items identified	
	Presence of satisfactory consumable products related to sanitation (e.g. toilet paper) in markets	No items identified	No items identified	
	Presence of satisfactory hygiene services or utilities in markets	No items identified	No items identified	
	Presence of satisfactory hygiene hardware or infrastructure in markets	No items identified	No items identified	
	Presence of satisfactory consumable products related to hygiene (e.g. soap,	No items identified	COVID MTRA; Ethiopia-SNV;	*COVID MTRA captures if soap used for handwashing is available for purchase

	sanitary napkins) in markets		MHM-Nepal; UNICEF-MHM Guidance WaterAid DFID GR-WASH; MHM Matters	*Ethiopia-SNV captures availability of sanitary pads at local vendor *MHM-Nepal captures existence of a shop within 20 minutes where sanitary pads can be purchased *UNICEF-MHM Guidance captures reason (“not available”) for not using preferred materials during last period *WaterAid DFID captures location where sanitary products are purchased *GR-WASH Indicator: Access to menstrual hygiene education, materials, disposal options *MHM Matters Indicator: Low-cost biodegradable sanitary protection materials are available locally *MHM Matters Indicator: A range of different sanitary protection options are available for women and girls, with information on their price, supply locations, and washing, drying and disposal mechanisms (MHM matters)
(2) Affordability/cost of WASH options	Affordability/cost of water service or utilities	MICS	ARISE; GWA-GSM; WWAP	*MICS captures reason (“too expensive”) for inability to access water in sufficient quantities when needed *ARISE captures inability to use preferred water source due to cost *GWA-GSM captures if costs of water vary for consumers based on their sex, poverty, or size *WWAP captures perceived level of difficulty to pay water bill/purchase water; satisfaction with water tariff *WWAP captures how many female/male headed households purchase water regularly from water vendors, at what price
	Affordability/cost of water hardware or infrastructure	No items identified	No items identified	
	Affordability/cost of consumable products related to water use (e.g. filters or chlorine tablets)	No items identified	No items identified	
	Affordability/cost of sanitation service or utilities	No items identified	ARISE	*ARISE captures inability to use preferred sanitation location because of cost
	Affordability/cost of sanitation hardware or infrastructure	No items identified	No items identified	
	Affordability/cost of consumable products related to sanitation (e.g. toilet paper)	No items identified	No items identified	
	Affordability/cost of hygiene service or utilities	No items identified	No items identified	
	Affordability/cost of hygiene hardware or infrastructure	No items identified	No items identified	

	Affordability/cost of consumable products related to hygiene (e.g. soap, sanitary napkins)	No items identified	COVID MTRA; Ethiopia-SNV; MHM Matters; MHM -Schoolgirls and Nuns; UNICEF-MHM Guidance	<p>*COVID MTRA captures affordability of water and soap for handwashing</p> <p>Ethiopia-SNV captures affordability of sanitary pads at local vendor</p> <p>*MHM-Schoolgirls and Nuns captures ability to afford sanitary pads</p> <p>*UNICEF-MHM Guidance captures reason (“too expensive”) for not using preferred materials during last period</p> <p>*Indicator: Low-cost biodegradable sanitary protection materials are available locally (MHM Matters)</p> <p>*Indicator: Women and girls in vulnerable, marginalised or special circumstances are able to access appropriate and affordable sanitary protection materials (MHM Matters)</p>
(3) WASH-related employment and job market	Supply and demand of WASH job market	GLAAS	Recommended indicator, but no items identified	<p>*GLAAS captures percentage of graduates from WASH educational programs or training institutes that are women</p> <p>*Indicator only: Percentage of women/girls in job skills training on operation and maintenance of water supply and sanitation, including for technical and managerial roles (GR-WASH)</p> <p>*Indicator only: Number of men and women trained in construction and operation and maintenance of new infrastructure or a water supply system (Mainstreaming Gender in WASH)</p> <p>*Indicator only: Percentage of increase in demand for (paid) labor by women as a result of the project (Mainstreaming Gender in WASH)</p>
	Women’s involvement in WASH-related employment or enterprise	No items identified	Mainstreaming Gender in WASH; MHM Matters; SWE; WASH-GEM; WWAP	<p>*SWE captures income gained from water delivery enterprise</p> <p>*WASH-GEM captures if respondent earns income from WASH activities</p> <p>*WWAP captures qualitatively the type of enterprise managed and whether it generates adequate income</p> <p>*Indicator only: Percentage of women in water-related employment, such as in a utility company or a selected ministry (Mainstreaming Gender in WASH)</p> <p>*Indicator only: Number of women employed in safe water enterprises (SWEs) and SWE value chain (SWE)</p> <p>*Indicator only: Number of women with access to and control over water-dependent enterprises (Mainstreaming Gender in WASH)</p> <p>*Indicator only: Women gaining income from production of menstrual hygiene products (MHM Matters)</p>
(4) Access to credit or subsidies	Presence of microfinance, savings groups, or other credit options to help finance water purchases or investments or subsidies	GLAAS	EWI; SWE;	<p>*GLAAS captures if there are financial schemes to make WASH more affordable</p> <p>*EWI captures existence of/membership in organizations that could potentially be used to access credit</p> <p>*SWE captures access to credit/microfinance from banks to start water-related business</p>
	Presence of microfinance, savings groups, or other credit options to help finance sanitation purchases or investments or subsidies		ARISE; EWI; WASH-GEM; WWAP	<p>*ARISE captures ability to access funds through credit for latrine construction or repair</p> <p>*EWI captures existence of/membership in organizations that could potentially be used to access credit</p>

				<p>*WASH-GEM asks how latrine was purchased, with microcredit and subsidies among response options</p> <p>*WWAP captures access to credit or subsidies for building/maintaining sanitation facility or sewage disposal system and financial assistance for WASH enterprises</p>
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Key take-home points:

- National tools contain items only on water availability/affordability and desludging. There are no items that captured market-based options for water improvement, either through ability to build additional sources, or ability to purchase filters/purification tablets.
- No items were identified on affordability of WASH infrastructure such as water points, latrines, or handwashing stations.
- Indicators relevant to WASH-related employment or enterprise focus largely on water enterprises

Opportunities: Leveraging existing data

- IFPRI's Women's Empowerment in Agriculture Index (WEAI) assesses credit and has generated data across several contexts. It was not included in our review because it does not assess credit as it relates to WASH specifically. However, it may be used to inform development of items for large-scale monitoring and/or may provide opportunities for analysis.

Opportunities: New data sources

Small-scale monitoring

- Several tools capture the ability to afford sanitary materials for menstruation. These questions could be adapted and tested for use in measuring ability to afford other consumable materials, such as soap or toilet paper.

Large-scale monitoring

- Develop and test items on affordability and access to credit for WASH infrastructure needs

Considerations

Items included in this brief all assume the social ability to access the market; if there are barriers due to constraints on freedom of movement or household decision-making, no items contained here cover those. Control over household finances or whose income is used for WASH purposes is covered in Financial Resources and Physical Assets.

Items from tools such as GWA-GSM contain items on if there are gender experts or gender programming within WASH utilities, meant for internal program evaluation or assessment. As this review focuses on the household, they are not included here. Similarly, tools that capture the existence of micro-finance programs or savings groups are not included if they do not focus on WASH.

WWAP contains qualitative questions on discrimination in access to water and sanitation services to specific communities or localities, and GWA-GSM asks utility companies if water costs vary based on sex and poverty. There are no quantitative items for households to capture differences in service based on class, caste, or other intersectional identities.

Indicators on WASH-related employment and the job market capture numbers or percentages of women in WASH-related enterprises or jobs. All indicators ask about water work; only one indicator mentions involvement in sanitation work. Sanitation labor is often stigmatized, and in some areas, sanitation workers such as manual scavengers comprise mostly women or members of certain castes.^{65,66}

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Appendix 16: Multi-level Enabling Environment: *Environmental Context*

The environmental context in which individuals move and operate can be enabling in that it can provide individuals with safe, accessible conditions, or can pose a barrier to individuals' WASH access.

Summary

Primary themes identified within the *Environmental Context* dimension include:

1. WASH location and types
2. Physical accessibility of WASH locations
3. Functionality and characteristics of WASH infrastructure

The following themes were identified that may have WASH implications:

- A. Aspects of the natural environment
- B. Climatic and seasonal factors
- C. Density of population and buildings

Overall,

- Nationally representative surveys contain items to identify WASH locations and types, while some sub-national tools contain more specific questions about these locations and types.
- Few tools capture physical accessibility of WASH locations. At the national level, only JMP Household and MICS contain items related to accessibility of WASH - and these items do not specify physical accessibility. ARISE, GESI, SI, and WSSCC contain some items relevant to physical accessibility, but no items were identified that capture physical improvements to WASH facilities to make them more accessible (such as bars or ramps).
- National and sub-national tools contain items related to the functionality and characteristics of WASH locations, though the specific characteristics assessed vary by tool. Some of these aspects of functionality and characteristics may be more relevant in terms of gendered considerations than others; some may also be more culturally or contextually specific. Few items ask about characteristics of hygiene locations used for purposes other than meeting menstrual needs (e.g., bathing).
- Finally, some tools capture aspects of the physical environment that are not directly related to WASH (A, B, and C above), but may have important implications for WASH; these are included below in grey. By and large, these themes have not been well covered by identified national or sub-national tools. These data may need to be triangulated from other sources.

Environmental Context: Themes assessed in existing tools by level				
Themes	Sub-Themes	Tools measuring sub-theme		Notes
		Nationally representative	Sub-National (e.g., Program/Project Eval)	
(1) WASH location and type	Type and location of water source	DHS; INFHS; JMP Expert Review; JMP Household; MICS	IDM; Mainstreaming Gender in WASH; WWAP	<p>*DHS, IDM, INFHS, JMP Expert Review, JMP Household, and MICS all ask what the main source of drinking water is; DHS, JMP Household, MICS, and INFHS ask about location of water source; WWAP asks what sources are used for water collection; JMP Household asks about secondary sources for drinking water</p> <p>*JMP Household and MICS ask what the main source of water for other purposes, such as cooking or handwashing</p> <p>*JMP Household asks what type of piped water supply the household has; WWAP asks if household is connected to piped water</p> <p>*WWAP asks what the distance of water source from house is if there is no piped water</p> <p>*JMP Household asks about both large and small water storage containers</p> <p>*Suggested indicators from Mainstreaming Gender in WASH: Ratios of men/women who live within 1.5 km of improved water source; ratios of men/women who live within the national target km to improved water supply; distances traveled by women and men (disaggregated) to collect drinking water; numbers of women and men using improved water sources</p>
	Type and location of sanitation facility	DHS; JMP Expert Review; JMP Household; MICS	ARISE; GESI; IDM; Mainstreaming Gender in WASH; SI; UIS; WWAP	<p>*ARISE, DHS, IDM JMP Expert Review, JMP Household, MICS, and WWAP ask about the type of sanitation facility</p> <p>*ARISE asks if different sanitation facilities are used at day and at night, and for urination and defecation</p> <p>*IDM asks about type of sanitation facility used when not at home</p> <p>*GESI asks if community members use public sanitation facilities</p> <p>*DHS, JMP Household, MICS, and ARISE ask about location of toilet facility relative to home</p> <p>*JMP Household asks about reasons for being unable to use the toilet, including distance; SI asks about distance to go to defecate</p> <p>*JMP Household asks where the septic tank discharges to; WWAP captures how many households in the area are not connected to the sewage system, with instructions to disaggregate by sex, age of head of household, and geographic area</p> <p>*ARISE, DHS, JMP Household, MICS capture if a sanitation facility is shared and how many households share it; ARISE and MICS capture if it is shared by known households</p> <p>*Suggested indicators from Mainstreaming Gender in WASH: Ratios of men/women who live within the national target km to improved sanitation facility; access to improved sanitation “near their home”</p> <p>*Suggested indicator from UIS: % men/women/children using mainly public sanitation</p> <p>*Indicators capture numbers of men and women using latrines or toilets and ratios of sanitation facilities for men vs women per household (Mainstreaming Gender in WASH), households with improved sanitation disaggregated by gender and sewerage connections in household disaggregated by gender of household head (WWAP), and percentage of men, women, and children using mainly public sanitation (UIS)</p>

	Type and location of hygiene facility (including for menstruation)	DHS; JMP Expert Review; JMP Household; MICS; PMA2020	ARISE; COVID-19 MTRA ; MHM - Indonesia; MHM - Nepal; MHM - Schoolgirls and Nuns; MPQ; U-Report; WSSCC	<p>*DHS, JMP Expert Review, JMP Household, and MICS asks about type of handwashing facility</p> <p>*MICS asks about location of handwashing facility, including if it is mobile or fixed</p> <p>*COVID-19 MTRA asks about type of handwashing location, and if handwashing location is too far away</p> <p>*COVID-19 MTRA asks about availability of handwashing locations with soap and water when outside the home</p> <p>*MHM-Nepal and WSSCC ask about location of bathing during menstruation</p> <p>*Suggested indicators from Mainstreaming Gender in WASH: Numbers and percentages of men and women with access to hand-washing facilities; ratio of handwashing facilities for men vs women per household</p> <p>*MHM-Nepal and MPQ ask about where MHM materials are washed; MPQ asks where materials are dried; MIS asks about difficulty finding a place to wash and dry materials</p> <p>*ARISE, MPQ, and PMA2020 ask where menstrual materials are most often changed; ARISE specifies at home and during the day and night; MPQ asks if it is the same place used for urination; MIS asks about difficulty finding a place to change materials; WSSCC asks if there is a place to change materials</p> <p>*PMA2020 asks if there is a place to dispose of materials; ARISE, MHM- Indonesia, MHM-Nepal, MHM-Schoolgirls and Nuns, MPQ, U-Report, and WSSCC ask where materials are disposed of; MIS asks about difficulty finding a place to dispose of materials</p> <p>*MPQ asks where materials are stored; MIS asks about difficulty finding a place to store menstrual material</p> <p>*Suggested indicators: Gender-Responsive WASH: Access to menstrual hygiene-related education, materials, and disposal options; JMP Expert Review: Facilities for washing body and/or materials during menstruation differentiated from bathing and personal hygiene more generally</p>
(2) Physical accessibility of WASH location	Physical accessibility of water source	JMP Household; MICS	GESI	<p>*JMP Household and MICS ask about main reason water could not be accessed in sufficient quantities, including "source not accessible" as response option (NOTE: These items do not specify physical accessibility)</p> <p>*GESI asks if public water points are user friendly for women, girls, and people living with disabilities, regarding weight and ease of using handles</p>
	Physical accessibility of sanitation location	JMP Household	ARISE; SI	<p>*JMP Household asks if everyone in the household is able to access the toilet at all times of day and night, and requires recording names to link with age, sex, disability, and other characteristics</p> <p>*JMP Household asks about reasons for being unable to use the toilet, including limited mobility</p> <p>*ARISE asks if it is physically challenging to access or use sanitation location, if there is sufficient room inside the sanitation location, and if there is a fear of injury because of slippery conditions</p> <p>*ARISE asks if there are community challenges with accessibility of sanitation locations</p> <p>*SI asks about difficulty or pain squatting for defecation</p>
	Physical accessibility of hygiene location (including for menstruation)	No items identified	WSSCC	<p>*WSSCC asks if the place where participant bathes during menstruation is easy to access</p> <p>*No items pertaining to physical accessibility of hygiene locations other than during menstruation</p> <p>*No items about physical accessibility of locations used to change menstrual materials</p>

(3) Functionality and characteristics of WASH infrastructure	Functionality and characteristics of water services/sources	DHS; JMP Household; MICS	GESI; HWISE; IWISE; IDM; Khan; WWAP	<ul style="list-style-type: none"> *JMP Household asks if water is usually acceptable *JMP Household asks about reasons for water unavailability, including cost *WWAP captures if payment for water at sources is required *HWISE and IWISE capture how frequently the main water source has been interrupted/limited; *JMP Household and Khan asks if water is always available from main source; *JMP Household asks how many hours per day water is supplied and how often water is unavailable *GESI asks if water points are user-friendly for women, girls, and people living with disabilities
	Functionality and characteristics of sanitation location	DHS; JMP Household; MICS	ARISE; GESI; Khan; Mainstreaming Gender in WASH; UIS; WWAP	<ul style="list-style-type: none"> *JMP Household asks about reasons for being unable to use the toilet, including availability and safety *ARISE, GESI, WSSCC, and WWAP ask if there is lighting on the way to or inside of the sanitation facility *ARISE, GESI, and WWAPI ask about locks or secure doors at sanitation facilities *GESI asks if toilets are user friendly; ARISE asks if there is sufficient room inside the sanitation location *ARISE asks if water must be carried to the sanitation location *JMP Household asks if the toilet design prevents others from seeing/hearing you *WWAP asks if communal location is clean and private, and if repairs are done promptly *WWAP asks if there are separate toilets for men and women *JMP Household asks about age of pit latrine/septic tank *DHS, JMP Household, and MICS capture if and when a sanitation facility has been emptied; Khan asks when pit latrine/septic tank was last emptied *JMP Household asks if the sanitation facilities leak or overflow; *ARISE asks if there has been any problem with the functioning of the toilet/latrine
	Functionality and characteristics of hygiene location (inclusive of menstruation)	JMP Household; MICS; PMA2020; UNICEF MHM Guidance	COVID-19 MTRA; MPNS; UNICEF MHM Guidance; WWAP	<ul style="list-style-type: none"> *JMP Household and MICS asks about availability of materials for hand washing *COVID-19 MTRA captures if soap and water are available at handwashing location *WWAP asks about satisfaction with the hand washing facility *PMA2020 and UNICEF MHM Guidance ask if menstrual management location is clean, safe, private, and lockable; *MPNS asks about cleanliness of place for changing materials *UNICEF MHM Guidance asks if location is supplied with water, mirror, shelf and hook, a disposal bin, and is well-ventilated and well lit *No items identified related to cleanliness, safety, or privacy of non-menstruation-related hygiene location
Themes & Sub-Themes with Possible Gender and WASH Implications				
(A) Aspects of the natural environment that affect ability to meet WASH needs	Aspects of the natural environment that affect ability to meet water needs	No items identified	No items identified	
	Aspects of the natural environment that affect ability	JMP Household	ARISE	*JMP Household asks about reasons for being unable to use the toilet, including barriers that may prevent people from reaching the toilet (does not specify natural v. manmade)

	to meet sanitation needs			barriers) *ARISE includes an item about fear of being injured due to physical conditions including rocks or thorns *No items pertain to ability to construct sanitation facilities (e.g. soil type, water tables, etc.)
	Aspects of the natural environment that affect ability to meet hygiene needs (inclusive of menstruation)	No items identified	No items identified	
(B) Climatic and seasonal factors that affect ability to meet WASH needs	Climatic and seasonal factors that affect water access	JMP Household; LSMS; PMA2020	SOCAT; WWAP	*JMP Household asks about the main source of drinking water in both the wet and dry seasons *Living Standards Survey asks who usually fetches water in the dry season; *PMA2020 and the Living Standards Survey ask how long water fetching takes in the dry season *PMA2020 asks how long fetching water takes in the wet season *SOCAT captures if access to the home by road is seasonal *WWAP includes changes in gendered roles and responsibilities for WASH due to seasonal (or permanent) migration
	Climatic and seasonal factors that affect sanitation access	No items identified	No items identified	
	Climatic and seasonal factors that affect ability to meet hygiene needs (inclusive of menstruation)	No items identified	No items identified	
(C) Density of population and buildings	The impact of population/building density that may affect ability to construct and/or utilize water facilities	No items identified	No items identified	
	The impact of population/building density that may affect ability to construct and/or utilize sanitation facilities	No items identified	ARISE	*ARISE item asks if the location of the sanitation location is private (separate from structural privacy), which, while not specific to population/building density, is related
	The impact of population/building density that may affect ability to construct and/or utilize water facilities	No items identified	No items identified	

Key take-home points:	
<ul style="list-style-type: none"> Nationally representative tools typically ask questions that have objective and observable answers about the type of WASH facilities and location relative to the home. Asking about the type, location, or characteristics of WASH locations at the household level - rather than at the individual level - may not capture gendered differences in ability to access and utilize these locations or whether or not the location meets gendered (and intersectional) needs of various members of the household. While nationally representative tools may ask about where a WASH facility is situated relative to the house, only JMP Household and MICS include items about accessibility of water source (and does not specify physical accessibility) and only JMP Household contains items related to accessibility of sanitation locations. There are no questions in nationally representative tools about physical accessibility of hygiene locations. Most tools focus on water, sanitation, and menstruation; there are very few items that ask about the physical environment for maintaining non-menstrual hygiene. 	
Opportunities: Leveraging existing data	
<ul style="list-style-type: none"> If the date of survey is noted, items on availability of water during wet or dry seasons could be leveraged within limited geographic regions to understand if there are seasonal shifts Analyze items related to number of households sharing facilities with population numbers (or population density if available) for specific geographic areas to identify issues related to overcrowding or insufficiency of WASH facilities, which may have more serious consequences for women, girls, and sexual and gender minorities 	
Opportunities: New data sources	
Small-scale monitoring	<ul style="list-style-type: none"> Adapt items related to characteristics of menstrual hygiene locations for locations used for hygiene at times other than during menstruation Develop and test more specific items related to accommodations for people living with disabilities, such as physical features like ramps or bars Develop and test items to ask about both natural environmental factors (note: this may include both barriers to accessing facilities (e.g. rocks) or barriers to constructing facilities (e.g. soil type)), climatic/seasonal factor, and factors related to population and building density that may affect WASH access
Large-scale monitoring	<ul style="list-style-type: none"> Consider: specifying "physical accessibility" for JMP Household and MICs items related to access to water source; including other disability considerations in JMP Household item about reasons for inability to access sanitation (e.g. incontinence); including similar items related to hygiene locations
Considerations	
<p>While ascertaining the existence of WASH infrastructure is an important first step, existing items from nationally representative surveys do not, by and large, assess gender considerations, including intersectional considerations related to disability. Survey questions related to type and location of WASH facilities may need to be analyzed alongside other questions - such as those related to privacy, safety, or freedom of movement - to more accurately capture gendered dynamics of WASH access that may be affected by the environmental context. For example, there may be restrictive norms related to caste (social context) that limit individuals' ability to enter certain spaces (freedom of movement) to access facilities. Items relevant to privacy and safety - such as the presence of lighting, locks, and doors on sanitation facilities - are also noted in the relevant briefs for those domains.</p> <p>Gender-specific considerations for characteristics of WASH facilities may vary by context and other intersectional characteristics, such as religion. For example, Islam calls for specific hygiene and sanitation practices, so WASH facilities may need to be tailored to the specific needs of those communities.⁶⁷⁻⁶⁹ Detailed characteristics of WASH facilities, therefore, may be best monitored at the sub-national level, with key characteristics identified for national-level monitoring.</p> <p>Aspects of the natural environment that relate to the ability to construct and/or utilize WASH facilities may not be gender-specific (e.g. soil type or water tables may affect latrine construction but may not be gender-specific). However, these factors may affect the ability to build facilities in certain locations or of certain types, which may in turn have gendered implications. Similarly, climatic and seasonal factors may or may not have gendered implications; however, when seasonality or climate affect access to certain water sources or sanitation locations, this may well have gendered implications as individuals may have to travel to alternate locations, exposing themselves to new gendered risks and vulnerabilities.⁷⁰ With the heavy burden of climate change in many low- and middle-income countries, it is increasingly important to monitor issues related to climate, seasonality, and gender.</p>	
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