Guidance for monitoring safely managed on-site sanitation (SMOSS)

Annex B: Data collection- Household questionnaire

Draft – August 2022

Background: These annexes accompany the Guidance for monitoring SMOSS - draft prepared for phase 2 pilots. The annexes provide details on indicators, core and expanded questions and other tools for designing monitoring systems to collect data for SDG 6.2.1. The annexes are split into the following documents:

A. Global indicators for monitoring SMOSS
B. Data collection – Household questionnaire
C. Data collection – household sanitation inspections
D. Data collection - Service authority and service provider surveys
E. Analysis to inform national estimates for SDG 6.2.1

Each document provides additional details, example questions and relevant background information to inform the design and implementation of SMOSS monitoring, recognising that not all details are relevant to all actors. These annexes are working documents that will be updated and finalised in 2023 with inputs from the phase 2 pilots and other global efforts that continue to test methods to improve monitoring of safely managed sanitation services.

Annex B - Household questionnaire core and expanded questions: Contents

Reference: This document along with the main guidance document and other annexes are available at https://washdata.org/monitoring/sanitation/safely-managed-on-site-sanitation

Photo: UNICEF Bangladesh 2021

B. Data collection - Household questionnaire

Household questionnaires are commonly used to assess sanitation and rely on the respondent self-reporting their knowledge of sanitation facilities and practices. While there are almost endless questions that could be asked and responses to these, the following table presents the specific questions and response categories that will enable relevant and accurate data to inform national estimates for SDG 6.2.1. Annex 1 on Indicators details how these questions and their responses to are used to calculate the global indicators. The provided response categories include the most common categories that are relevant to the question. However, in some contexts, additions or modifications may be required to suit the local conditions. Any additions or modifications should clearly align with the current global definition and categories and if modified will require updating the calculations suggested Annexes A and E to suit. If core questions are being modified, it would be useful to review the common misinterpretations of indicators and ambiguous question which are shared below in section B.3.

In additional to the global indicators, there may be additional local indicators that are important for national targets or local planning. Additional or **expanded questions** may be needed to inform these local indicators, such as to capture additional service criteria, intra-household variability, or related health and environmental risks. An example of possible expanded questions countries may wish to assess to inform local indicators are shared in Table B 2. These are a compilation of expanded questions used in the Phase 1 SMOSS pilots to provide an example, they are not a comprehensive list of all possible expanded question.

B.1 Core questions - household questionnaire

Table B 1. Core questions for the household questionnaire

ID	Core question	Responses	Indicator	Skip, otherwise continue
H1	What kind of toilet facility do members of your household usually use? If 'flush' or 'pour flush', probe: Where does it flush to? If not possible to determine, ask permission to observe the facility.	11. Flush to piped sewer system 12. Flush to septic tank 13. Flush to pit latrine 14. Flush to open drain 15. Flush to elsewhere 16. Flush to don't know where 21. Pit latrine with slab 22. Pit latrine without slab / open pit 23. Composting toilet 31. Bucket 32. Hanging toilet/hanging latrine 41. No facility/bush/field 96. Other (specify) *Optional* *51. Ventilated improved pit latrine (with slab)* *52. Twin pit latrine with slab* *53. Container based sanitation*	S1, S2, S3, S6, S6, S7	H1(41) > end
H2	Do you share this facility with others who are not members of your household?	1. Yes 2. No	S14	H1(11,14,15,22,31,32) > end H1(21,23,51,53)>H5 (Note: Remaining questions only asked to respondents

ID	Core question	Responses	Indicator	Skip, otherwise continue
	(Asked to all households with sanitation – improved and unimproved)[1]			with improved sanitation)
H3	Does your septic tank or pit latrine have an outlet pipe for liquid effluent? *(Only asked to wet containments - those replying H1(12,13,52,96))*	1. Yes 2. No (includes those infiltrating underground from the base or sides of the tank or pit) 8. Don't know	S8 (Use IH2 if available)	H3 (2,8) > H5
H4	If it has an outlet pipe for liquid effluent (yes to H3), where does this pipe discharge?	11. To a leach field, soak pit To a sewer/closed drain that leads 21. - to a wastewater treatment plant (WWTP) 22. – to a waterbody (not connected to WWTP) 23. – to don't know where 31. To an open drain 32. To a waterbody/surface 96. Other (specify)_____ 98. Don't know	S8 (Use IH2 if available)	
H5	In the last year, have excreta from your (pit latrine or septic tank) been released to the surface environment due to any of the following events? *(Select all that apply)* *(Only asked to those replying H1(12,13,21,23,51,52,53))*	(Select all that apply) A. Overflowed B. Flooded C. Containment collapsed D. Other event releasing excreta to the surface environment (specify) E. None of the above X. Don't know	S8	
H6	Has your (pit latrine or septic tank) ever been emptied? *(Only asked to those replying H1(12,13,21,23,21,51,52,53))*	1. Yes emptied 2. Never emptied 3. Not emptied but covered and left undisturbed when full 8. Don't know	S9, S10	H6=2,3,8 > end
H7	Who emptied the containment?	**Service provider** 11. Public/municipality/government 12. Private company/NGO 13. Informal emptier (e.g. unlicensed) **Not service provider** 21. Self emptied 22. Neighbour, family member, friend 98. Don't know	Used for analysis only (e.g. S12)	
H8	The last time it was emptied, where were the contents emptied to?	1. Removed off-site (to treatment / unknown) 2. Removed to a waterbody, open ground, field or elsewhere 3. Buried in a covered pit at or near household (in-situ)	S11, S12	

[1] Note: The definition of safely managed services requires that households have improved sanitation facilities that are not shared with other households. The core questions are designed to collect information on containment, emptying and disposal of excreta from all households using improved sanitation facilities, but households sharing facilities with other households are excluded when calculating safely managed services (see Decision Tree, Annex A, Section 3).

ID	Core question	Responses	Indicator	Skip, otherwise continue
		4. Buried in a covered pit/trench elsewhere (off-site) 5. Buried in an uncovered pit 96. Other (specify) 98. Don't know		

B.2 Example expanded questions – household questionnaire

Brief intro to expanded questions.

The questions were drawn from the following questionnaires. These sources can be referenced to find the response categories which are not included below.

- JMP: UNICEF and WHO (2018) Core questions on drinking water, sanitation and hygiene for household surveys: 2018 update. Available at https://washdata.org/report/jmp-2018-core-questions-household-surveys
- MICS: UNICEF (2022) Multiple Indicator Cluster Surveys (MICS) Household Questionnaire MICS6. Available at https://mics.unicef.org/tools#survey-design
- SFD: SFD PI (2017). SFD Manual Volume 1 and 2, version 2. SFD Promotion Initiative. Available at: https://sfd.susana.org/knowledge/the-sfd-manual
- Phase 1 pilot countries' household questionnaires: Bangladesh (BGD), Ecuador (ECU), Indonesia (IDN), Kenya (KEN), Serbia (SRB), Zambia (ZMB). The Bangladesh and Serbia final reports are available online which include their household questionnaires, other reports will be uploaded when finalised. See https://washdata.org/reports

Table B 2. Example expanded questions for household questionnaires

	TOILET FACILITY AND ACCESS
Sharing	JMP XS1/MICS WS17. How many households in total use this toilet facility, including your own household?
	MICS WS16. Do you share this facility only with members of other households that you know, or is the facility open to the use of the general public?
Intra-household access	JMP XS2. Do all household members usually use the sanitation facility?
	JMP XS3. Is everyone in the household able to access and use the toilet at all times of the day and night?
	JMP XS4. What was the (main) reason that household members were unable to use the toilet at all times of the day or night?
	JMP XS5. The last time your child passed stools, what was done to dispose of the stools?
Privacy and cleanliness	JMP XS7. Does the design of your toilet prevent other people seeing and hearing what you are doing when you use it?
	JMP XS8. Do you or other household members face any risks when using the toilet?
	CONTAINMENT
Greywater	JMP XS15. How do you dispose of household water used for cooking, laundry and bathing?
Construction	SRB. Do you have permission for the construction of septic tank?
	IDN. What is the material used for containment wall? What is the material used for containment base?
	SFD. Does the containment have impermeable/lined walls? Does the containment have an open/not sealed base?
Design and function	SRB. What is the capacity (m^3) of the containment facility?
	IDN. What is the shape of the containment?
	BGD. What is the depth of the pit/septic tank below the ground surface? (if pit, can ask how many rings)

	BGD. Can groundwater get in or out of the pit/septic tank? (pit/septic tank is not "watertight" or "sealed")
Ground-water risk	BGD. What is the type of the nearest drinking water source from this sanitation?
	SRB. What is the distance to nearest drinking water source?
	SRB. Is that drinking water source uphill or downhill from the containment facility?
	SFD. What is the soil or rock type below surface?
	SFD. What is the depth of the water table (during the wettest period of the year)?
	SFD. Is the sanitation facility located less than 10m from a groundwater well?
	EMPTYING
Emptying frequency	JMP XS11. How many years ago was your pit latrine/septic tank built?
	JMP SX12. How many years ago was your pit latrine/septic tank last emptied?
Emptying method and access	JMP XS13. The last time your pit latrine/septic tank was emptied, who emptied it?
	SRB. Was the pit/septic tank easily accessible for the emptiers?
	SRB. How was emptying performed predominantly last time?
	KEN. What was the estimated volume that was emptied? How many barrels/trucks were needed to empty the containment last time it was emptied?
Emptying occupational health and safety	BGD/SRB. To empty the pit/septic tank, did someone need to enter the pit/septic tank?
	BG/SRB/WHO. When it was emptied, were the people doing the emptying wearing any special equipment, such as rubber boots or gloves?
	WHO When it was emptied, was there any spillage or leakage of the excreta in your dwelling, in your own yard/plot or elsewhere?
	TRANSPORT
Transport method	BGD/SRB. What were the means of transportation?
Transport distance	SRB. What is the distance from the household to disposal site?
	DISPOSAL and TREATMENT
Disposal in-situ	SRB (edited). Has a pit latrine on the household premises ever filled up, and then been covered and abandoned?
Treatment in-situ	SRB - Do you treat faecal sludge from your septic tank or latrine pit on site?
	REUSE
Reuse practice	SRB/BGD. Do/did the household use any of the faecal contents from the containment?
Awareness	SRB - Are you aware that faecal sludge is needed to be treated before disposal and/or reuse? BGD - Do you know the purpose of faecal contents transporting outside the compound? SRB - Do you agree that the treated faecal sludge could be used as fertilizer for agricultural cultivations?

B.3 Examples of ambiguous wording in household questionnaires

Given the varied interpretation of sanitation terminology, care must be taken in wording survey questions and responses to ensure the correct meaning is understood and ambiguity is reduced. This is particularly important in translation as there may not be common local terminology for some technical features of sanitation (e.g. faecal sludge, effluent, emptying). In some cases, local definitions or interpretations of a particular term may differ from global norms, such as septic tanks being interpreted to mean a variety of pit types. The following are some examples of ambiguity in question wording that have come up, often in more than one questionnaire. While the differences are often quite fine, they may impact whether a facility is considered safely managed or not. Steps to avoid ambiguity include care in translating technical terminology, seeking inputs from other in-country actors on the typical translations or interpretations of sanitation terminology, and piloting to ensure both enumerators and respondents interpret the wording correctly. Prompts, such as visuals or more detailed explanations, may need to be support understanding.

a. **Drain vs sewer -** The words for sewer and drain are occasionally used interchangeably. For monitoring sanitation, a sewer is intended to be connected to wastewater treatment system, typically via a buried pipe or a covered and lined culvert. Whereas a drain is a pipe or channel, that may be open or closed, is typically intended to convey rainwater not wastewater, and typically discharges water to the environment.
b. **Effluent discharge vs emptying sludge:** Some surveys have combined the concepts of effluent outlet pipe from on-site containments and emptying containments into one question, possibly due to the challenge of translating desludging or discharge or misunderstanding of the different waste streams. As shown in Figure B1 effluent is the liquid (flush water, cleaning water, excreta, greywater if added) that discharges from the containment through an effluent pipe, leaks from walls or base, or overflows to the surface. Whereas emptying relates to the intentional removal of faecal sludge from the containment using pumped or manual removal equipment. While emptying can also remove the liquid contents, it is an infrequent and more intentional process than the semi-continuous effluent discharge through the outlet pipe. Examples of ambiguous questions and responses around faecal sludge and effluent management included:
    - "Where/how is faecal effluent drained from septic tank/pit latrine?" with response options including "emptying by service provider" and "discharge by pipe to drain". This mixes the concepts of desludging and effluent discharge. This question could be improved by not including 'emptying by service provider' as a response option.
    - "*Where does waste from septic tank or pit end up?*" with response categories that don't make clear whether the question refers to periodic emptying of faecal sludge or semi-continuous discharge of effluent.
c. **Hypothetical emptying questions:** Various surveys did not specifically ask whether pits and septic tanks had ever been emptied and instead asked hypothetical questions about what the respondent would do or questions about filling, which cannot adequately inform the global indicator "Has the pit ever been emptied?". For example, some unspecific or hypothetical questions on emptying include:
    - When the pit/septic tank last required emptying, what did you do?
    - How do you process the sludge when the tank is full?
    - How many times has your pit/septic tank filled up?
    - When the pit/septic tank becomes full, what do you plan to do?
d. **Combined questions:** Some questions ask two indicators in one question which although not necessarily incorrect, may add complication for the enumerator as well as analysis. Where possible each question should just answer one indicator. For example, this is a two-part question: "The last time it was emptied, where were the contents emptied to? Was it removed by a service provider?". These should generally be broken up into two separate questions.

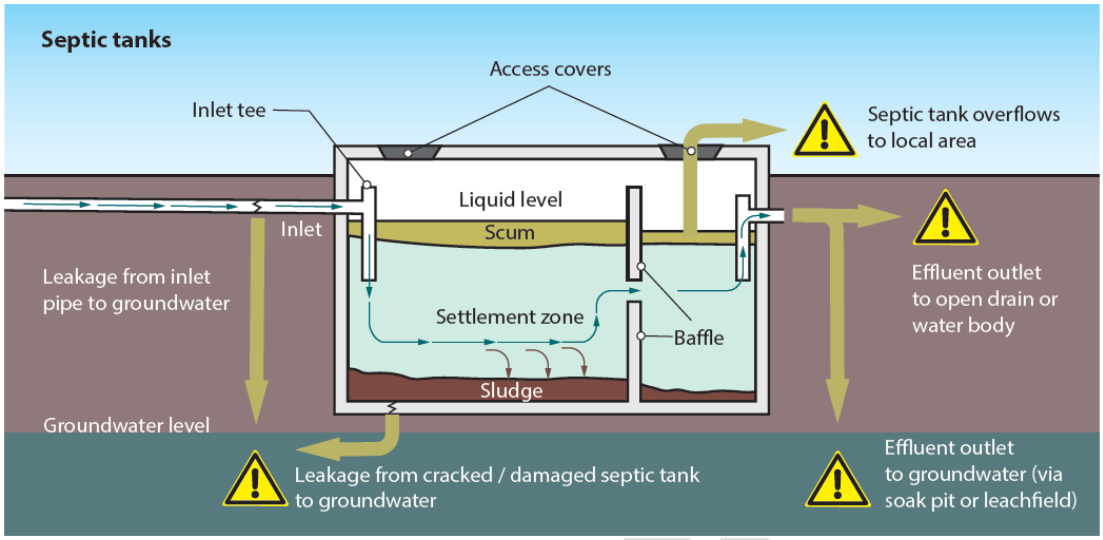

Figure B1. Diagram of a septic tank and potential issues with containment. Source: WHO, "Guidelines on sanitation and health," World Health Organization, Geneva, 2018.

B.4 Sampling for household questionnaires

The sampling for household questionnaires depends on the approach taken and intended scope. For questions integrated into existing national surveys, the sampling will be as per the national survey. These often follow an approach similar to those outlined by the DHS and MICS international household survey programs sampling guides, referenced below.

For a dedicated household survey, the sampling may depend on the intended scale of survey and budget. Some phase 1 pilot countries conducted nationally representative surveys that could inform national estimates (e.g. Bangladesh, Serbia and Zambia), while others conducted targeted surveys to test methods in greater detail and include priority demographical contexts (e.g. Kenya). These were typically a smaller sample size than the national multi-topic surveys and ranged from 1500-23,000 respondents. Details of the sampling from Phase 1 pilots are found in the country reports, available at: https://washdata.org/monitoring/sanitation/safely-managed-on-site-sanitation

Other guidance for sampling from national survey programs includes:

- USAID 2020 DHS Survey Design: Sample Size (English)
  - Web page: https://dhsprogram.com/publications/publication-dhsm16-dhs-questionnaires-and-manuals.cfm
  - PDF : https://dhsprogram.com/pubs/pdf/DHSM16/DHSM16.pdf
- UNICEF MICS 3 Designing and selecting the sample
  - Web page: https://mics.unicef.org/tools
  - PDF: https://mics.unicef.org/files?job=W1siZiIsIjIwMTUvMDQvMDIvMDgvMDAvMTkvODEwL01JQ1MzX0NoYXB0ZXJfNF9fX0Rlc2lnbmluZ19hbmRfU2VsZWN0aW5nX3RoZV9TYW1wbGVfMDYwMjE5LnBkZiJdXQ&sha=3d97a05358bb0e37