

Template iWSSP Step 2 - System description

Describing the drinking water and sanitation systems allows for a better understanding of how they operate and how they serve the community. The system description provides the foundation groundwork for the following iWSSP steps. To describe the system, it is important to consider various aspects of the drinking-water supply and sanitation system.

To collect information on drinking water supply and sanitation services, you can use existing documents, descriptions, maps or flowcharts. This template provides a set of questions that can help you collect relevant information related to the drinking water supply and sanitation system.

It is important to note that questions in this template may need to be adapted for use in your local context. This can include the selection of relevant questions depending on the drinking water supply and sanitation services in the area.

The following questions will help you to describe the drinking water supply and sanitation system.

1. General information

Date of this document:

Version:

What is the name of your village or town?

What is the name of your district?

What is the name of your region?

How many people live in your community?

What is your community mostly formed of?

- Rural or low-density settlements
- Sub-urban or peri-urban neighbourhoods, small towns or village centres
- Urban areas

2. Information on sanitation system and drinking water supply

2.1 Type of sanitation

1. What types of sanitation systems are present in your community (please select all that apply)?

- Centralized wastewater collection and treatment (off-site sanitation)
- Decentralized sanitation (on-site sanitation)
- Open defecation
- Other type (please specify):

2. How many people are using the different types of sanitation?

- Centralized wastewater collection and treatment, specify the number of people or percentage of people using a centralized system:
.....
- Decentralized sanitation, specify the number of people or percentage of people using:
.....
- Open defecation, specify the number of people or percentage of people using:
.....
- Other type of sanitation (please specify):
.....

3. What is the volume of wastewater and faecal sludge collected [m³/year]?

Wastewater:

Faecal sludge:

2.2 Type of drinking water supply

4. What is the source of the primary drinking water supply? (please select all that apply.)

- Groundwater
- Spring water
- Surface water (e.g. river, lake, reservoir, dam)
- Other source (*please specify*)

5. What is the population served by your supply (number of citizens / households)?

6. What is the volume of drinking water supplied [m³/year]?

7. Are any alternative drinking water sources present and used by community members (e.g. private wells, rainwater)?

- Yes No

If yes, please include details here.

.....
.....

3. Management

3.1 Management of the sanitation system

Centralized system (only complete if centralized systems are in place)

1. Is the centralized sanitation system managed by the community?

- Yes No

If yes, has your community formally established a group of people responsible for this?

- Yes No

If no, who or which entity is responsible for management and operation of the sanitation system?

.....

2. What is the total number of staff or community members involved in the operation and management of the sanitation system?

.....

3. Who is responsible for the overall operation and management of the system?

Name:

Profession / level of training:

4. What other staff are involved in the operation and management of the sanitation system?

Name:

Specific responsibilities:

Profession / level of training:

Name:

Specific responsibilities:

Profession / level of training:

5. Do you collect sanitation service fees from community members?

Yes No

If yes, how much is charged per month on average?.....

Decentralized system (only complete if decentralised systems are in place)

6. Is the decentralized system (storage, emptying and transport, treatment or disposal) managed by the community?

Yes No

If yes, has your community formally established a group of people responsible for this?

Yes No

If no, who or which entity/entities is/are responsible for management and operation of the sanitation system?

.....

3.2 Management of the drinking water supply system

7. Is your drinking water supply managed by the community?

Yes No

If yes, has your community formally established a group of people (e.g. a water association or water user group) responsible for this?

Yes No

If no, who or which entity is responsible for management and operation of the drinking water supply?

.....
.....

8. What is the total number of staff or community members involved in the operation and management of the drinking water supply?

9. Who is responsible for the overall operation and management of the drinking water supply?

Name:

Profession / level of training:

10. What other staff are involved in the operation and management of the drinking water supply?

Name:

Specific responsibilities:

Profession / level of training:

Name:

Specific responsibilities:

Profession / level of training:

11. Who is/are the contact(s) at your local health office and/or environmental agency?

Local health office:

Name:

Contact details:

Environmental agency:

Name:

Contact details:

12. Do you collect drinking water supply service fees from community members?

Yes No

If yes, how much is charged in total per month on average?

4. Specific questions per sanitation or drinking water supply step

4.1 The sanitation system

4.1.1 Toilets / open defecation

1. Are people using private toilets and/or public toilets?

Yes No (open defecation)

If yes, please specify:

Household, ___%

Shared, ___%

Public – community, ___%

Private, paid for, ___%

2. What type of interfaces are in place?

Dry technologies

Dry toilet

Urine-diverting dry toilet

Urinal

- Water based technologies
 - Pour flush toilet
 - Cistern flush toilet
 - Urine-diverting flush toilet

3. Do people have problems with toilets? If yes, what problems are experienced?

- No water available for flushing
- Toilets not in use, reason:
- Toilets broken
- Toilets unsafe
- Other (please specify)

4. Are there specific places for open defecation?

- No Yes, where:

If yes, are these places located

- Nearby abstraction points for drinking water (e.g. wells)? No Yes
- Nearby drinking water pipes? No Yes
- Nearby storage tanks? No Yes
- Other:

4.1.2 *Collection and storage*

5. How is excreta collected and stored?

- Open defecation
- Bucket latrine
- Single pit latrine
- Single ventilated improved pit latrine
- Double alternating dry pits
- Double dehydration vaults
- Composting chambers
- Urine storage tank
- Twin pits pour with flush
- Septic tanks
- Anaerobic biogas reactor
- Centralized (sewer system)

6. Do you have information on the construction of the pit latrine(s) or septic tank(s)? Provide an estimate if specific values are not available.

Age:.....

Material:

Method of construction:

Lifespan (how many year useable):

7. What is the depth of the storage container (e.g. septic tank)? meter(s)

8. What is the minimum relative distance of the storage container (e.g. septic tank) to water supply pipes? meter(s)

9. Are pit latrines, septic tanks, or other excreta storage containments and their discharge located near parts of the water supply?

No Yes, where? (specify what part of the water supply):

If yes, are these places located

- Nearby abstraction points for drinking water (e.g. wells)? No Yes
- Nearby drinking water pipes? No Yes
- Nearby storage tanks? No Yes
- Other:

10. Does the containment (e.g. pit latrine or septic tank) sometimes overflow (e.g. during a rainy season)?

No Yes, how often? :

4.1.3 Emptying, conveyance and transport

Decentralized systems

11. Is the containment (storage container e.g. pit latrine or septic tank) ever emptied?

No Yes, how often:

If yes, who empties the containment (pit latrine or septic tanks)?

- Owners
- Municipality
- Private companies
- Others, specify:

12. What happens when a storage container is not emptied?

- Abandoned
- Empties by non-human processes (e.g. during rainy season)
- Other, specify:

13. How often is the storage container (e.g. pit latrine or septic tank) emptied? every

14. How is the storage container (e.g. pit latrine or septic tank) emptied?

- Human powered emptying and transport
- Motorized emptying and transport
- Other, specify:

15. Is personal protective equipment (PPE) used during emptying? (select all that apply)

- No Yes, which and do they use them consistently according to procedures?
- Gloves, used consistently No Yes
- Facemask, used consistently No Yes
- Overalls, used consistently No Yes
- Boots, used consistently No Yes
- Other, specify:

16. Have spills with faecal sludge occurred during emptying?

- No Yes, is the spill removed or cleaned and how?

17. Is personal protective equipment used for discharging the waste? (select all that apply)

- No Yes, which and do they use them consistently according to procedures?
- Gloves, used consistently No Yes
- Facemask, used consistently No Yes
- Overall, used consistently No Yes
- Boots, used consistently No Yes
- Other, specify:

18. Is faecal sludge (raw sewage) spilt during transport (e.g. leaking tank)?

- No Yes, how is this cleaned:

19. Where is the collected waste / faecal sludge taken to?

- Informal disposal site:
- Formal dumpsite:
- Treatment plant:
- Transfer station:
- Other:

Centralized systems (sewer system)

20. Is a sewer system present?

- No Yes:
 - Simplified and solids-free sewer technologies
 - Conventional gravity sewer technologies
 - Transfer and sewer discharge station technologies

21. Does the sewer system receive rain / stormwater (combined sewer system) or is rain / stormwater collected separately?

- Combined sewer system
- Separate sewer system
- Other:

22. What is the approximate length of the sewer network? kilometers

23. Do you have construction information about the sewer network? Provide an estimate if specific values are not available.

Age:

Material:

24. What is the depth of the sewer pipes? meter

And relative depth to drinking water supply pipes? meter

Are the sewer pipes located above or below the drinking water pipes?

- Sewer pipe above drinking water pipe
- Sewer pipe below drinking water pipe
- Sewer pipe at the same height as drinking water pipe

25. Do you have information on grading of materials surrounding the pipe?

.....

26. Are the sewer pipes sometimes blocked (obstructed)?

- No Yes, how often:

27. Do sewer pipe breaks occur?

- No Yes, how often:

28. Are sewer leakage rates known?

- No Yes, what is this rate:

4.1.4 Treatment

(Semi)Centralized systems

29. What kind of treatment is used (please select all that apply)?

- Settler
- Anaerobic baffled reactor
- Anaerobic filter
- Waste stabilization ponds
- Aerated pond
- Constructed wetlands
 - Free-water surface constructed wetland
 - Horizontal subsurface flow constructed wetland
 - Vertical flow constructed wetland
- Conventional treatment
 - Primary treatment
 - Sedimentation
 - Secondary treatment
 - Trickling filter
 - Upflow Anaerobic Sludge Blanket Reactor (UASB)
 - Activated sludge
 - Sedimentation/thickening ponds
 - Tertiary treatment
 - Coagulation / flocculation
 - Slow sand filtration
 - Membranes
- Disinfection
 - Chlorination
- Sludge treatment technologies
 - Unplanted drying beds
 - Planted drying beds
 - Co-composting
 - Biogas reactor
- Other, specify:

30. Monitoring of the treated sewage water (effluent):

Observations, specify

Measurements

Flow rate

Chemicals

COD

BOD

solids

other, specify

Microbiological

E. coli

faecal coliforms

total coliforms

other, specify

Physical parameters)

pH

temperature

other, specify

31. Is it possible that raw sewage water (influent) is not treated (e.g. due to process overflow in case of heavy rainfall)?

No Yes, how often?

32. Do sanitation workers use personal protective equipment (PPE)?

No Yes, which and do they use them consistently according to procedures?

Gloves, used consistently No Yes

Facemask, used consistently No Yes

Overall, used consistently No Yes

Boots, used consistently No Yes

Other, specify:

33. Do you have bypasses and overflows from your sewage works?

No Yes, how often:

34. Has the quantity or quality of raw sewage water and treated sewage water changed in the last years (e.g. increase of raw sewage, higher turbidity of treated sewage)?

No Yes: specify,
.....

In answering this question, you should consider:

- Has there been a change in industrial processes or a new process introduced?
 No Yes
- Has the facility started accepting offsite sewage such as leachate?
 No Yes
- Has the discharge volume increased?
 No Yes
- Has the rate of discharge increased?
 No Yes

35. Do you have clear, adequate functioning operation and maintenance programmes in place at your facility?

No Yes

If yes, do you have an adequate functioning operation and maintenance manual?

No Yes

36. Are procedures in place to deal with an emergency (e.g. contingency plans)?

No Yes

37. Are procedures in place to deal with complaints from the public or external parties?

No Yes

4.1.5 Disposal

Decentralized system

38. Is faecal sludge dumped?

No Yes, specify where:

39. Where is untreated wastewater or faecal sludge discharged or dumped? Specify for different decentralized sanitation systems present.

.....
.....

40. Are waste discharge sites located near parts of the drinking water supply?

No Yes, where:

If yes, are these places located

- Nearby abstraction points for drinking water? No Yes
- Nearby drinking water pipes? No Yes
- Nearby storage tanks? No Yes
- Other, specify:

41. Does legislation regarding discharge / disposal of wastewater exist? If so, list them below.

.....
.....

Centralized system

42. Where is treated wastewater discharged?

.....
.....

43. Is faecal or wastewater sludge dumped or disposed?

- No Yes, specify where:

44. Does legislation regarding discharge / disposal of wastewater and / or wastewater sludge exist? If so, list them below.

.....
.....

45. Are wastewater or wastewater sludge discharge sites located near parts of the water supply?

- No Yes, where:

If yes, are these places located

- Nearby abstraction points for drinking water? No Yes
- Nearby drinking water pipes? No Yes
- Nearby tanks? No Yes
- Other, specify: _____

4.2 Drinking water supply

Specific questions related to the different steps in the drinking water supply can be found in Template 2-B Description of water supply from "A field guide to improving small drinking-water supplies: water safety planning for rural communities. Copenhagen: WHO Regional Office for Europe; 2022. Licence: CC BY-NC-SA 3.0 IGO."

Link: [A field guide to improving small drinking-water supplies: water safety planning for rural communities \(who.int\)](https://www.who.int/publications/i/item/9789289101001)