Tool 2 – Summary – Storage, Collection and Transport – Asessment and Improvement

Waste storage, collection and transport are essential elements of the SWM service chain. Often, most available SWM resources are spent on it. Evaluating and improving the storage, collection, and transport service can enhance effectiveness and financial sustainability, freeing resources to expand the collection service and/or allocate these resources to safer treatment and disposal.

Description

Evaluating waste storage, collection, and transport services is essential to assess the service quality and identify potential improvements. Such improvements can lead to more efficient and, consequently, more effective systems. Evaluations should focus on logistics efficiency, examining all elements of the collection chain and how they interact with one another, from waste generation to final treatment or disposal. The tool addresses both physical components and essential elements of planning and governance. Key principles and priorities for evaluating efficiency include:

- Optimise time and effort required at each task
    - Make loading/unloading the waste easy
    - Ensure waste containment for collection (loose waste is strenuous to handle and requires additional cleaning)
    - Avoid idle time during collection and transport (waiting for residents to deliver their waste for collection, time spent in traffic jams or complex vehicle manoeuvring)
- Ensure adequate planning and monitoring
    - Ensure setting and use of efficient routes
    - Make sure to use the maximum load of the vehicle during transport efficiently
    - Optimise storage capacity (at collection points, containers, transfer station)
    - Ensure staff availability, training and occupational health and safety
    - Ensure vehicle availability (preventive and corrective maintenance)

Steps for the assessment and improvement of storage, collection and transport:

1. **Plan and prepare the assessment (1-2 days)**
    a. Engage with key stakeholders who can provide information, contribute to the assessment, and support implementation during the assessment and improvement process, as well as beyond. These stakeholders may include current service providers, local government representatives, informal waste pickers, planners, camp managers, and WASH promoters. Empowering stakeholders from the outset ensures their ownership of the process, strengthens local capacity, and facilitates a smoother transition when humanitarian actors phase out.
    b. Gather any secondary information you can find on the SWM system in the area of interest.
    c. Prepare key staff who will be involved in the assessment using the proposed additional resources below.
2. **Gain an overview of the current storage, collection and transport system (1-2 days*)**
    a. Use the **Tool 2.1 – Overview of Storage, Collection and Transport.** You may consider using **Table T 2.1 A** multiple times if the service delivery differs from one area to another. Observe the collection and transport system in action and get information from key stakeholders.
3. **Conduct the evaluation (1-3 days)**
    a. Use the **Tool 2.2 – Evaluation and Improvement of Storage, Collection and Transport:** use **Table T 2.2 A** to evaluate elements of the infrastructure and design suitability, and then **Table T 2.2 B** to evaluate elements of planning and governance. Note that some elements might not be relevant for a given context, as they are prepared to fit any collection system.

4. **Analyse and process the evaluation's results (1-2 days)**
    a. Identify which key elements are critical to improve your system, while also considering the priorities for efficiency.
    b. Look at the options regarding possible improvements, as listed in the **Tool 2.2 – Evaluation and Improvement of Storage, Collection and Transport** and assess if these are feasible with the available resources you have. Use **Tool 8 – Cost Evaluation**.
    c. Prepare a list of the key improvements to implement.
5. **Plan for implementation of improvements (2-3 days)**
    a. Prepare the details of the improvements you have selected and allocate resources.
    b. Plan a timeline for the implementation.
    c. Prepare a communication plan to inform users when relevant.
6. **Implement improvements (over weeks with follow-up monitoring and adjustments)**
    a. Implement the changes in the collection system.
    b. Collect data and monitor the changes made, adjust if necessary.
    c. Consider redoing an assessment of the system in the future for further evaluation and improvement.

Time requirements are a rough indication and will highly depend on the resources available for the assessment, the size and complexity of your collection and transportation system.

**If a waste generation and composition study is done, consider 15 additional days.*

🕮 Resources

Tool 2.1 – Overview of Storage, Collection and Transport

Tool 2.2 – Evaluation and Improvement of Storage, Collection and Transport

Tool 8 – Cost Evaluation

The assessment and improvement of storage, collection and transport directly links to the following chapters of the Compendium:

- **Storage (pp. 42-53)**
- **Collection and Transport (pp. 54-71)**

🕮 Additional resources

Manus Coffey and Adrian Coad, 2010. Collection of Municipal Solid Waste in Developing Countries. UN-Habitat. **PDF**

Ewers, L., Gensch, R., Hayman, S., Krähenbühl, M., Kucharski, M., Machado, A., Mertenat, A., Salem, F., Tosi Robinson, D., Ubbiali, S., Zurbrügg, C. (2025): Compendium of Solid Waste Management in Humanitarian Contexts. German WASH Network (GWN), Swiss Federal Institute of Aquatic Science and Technology (Eawag), Global WASH Cluster (GWC), International Federation of the Red Cross and Red Crescent Societies (IFRC), Sustainable Sanitation Alliance (SuSanA). Berlin. Germany. ISBN: 978-3-906484-81-5. **PDF**

Eawag and EPFL (2018). Municipal Solid Waste Management online course. Improving efficiency of waste collection and transport. **Video**