

Tool 3.2 – Evaluation and Improvement of Disposal

Table T 3.2 A: Evaluation of infrastructure and design of disposal sites

Category	Feature	Questions to ask – things to observe – elements to evaluate	Actions and possible improvements
Infrastructure and design	Site location	Is the location of the disposal site adequate? Is the capacity of the disposal site sufficient to dispose of waste in the long run? (Consider a lifetime of at least 10 years)	Use Annexe 5 of the GTH disposal guidelines to assess the location of the current disposal site. Evaluate the necessity of closing the current site if the location is inadequate and find a new, adequate location for waste disposal. Evaluate the remaining space for waste disposal using Chapter 2.1 and Annexe 4 of the GTH disposal guidelines. Start searching for a new adequate location early enough (years) if the remaining space is limited.
	Mitigation measures	Are there mitigation measures in place at the disposal site? Are these measures functioning? ☐ Access control and fencing ☐ Waste placement plan and tipping face management ☐ Waste compaction ☐ Waste covering ☐ Rainwater management ☐ Leachate management ☐ Gas management ☐ Impermeable liner	Use Table 3 of the GTH guidelines to understand the risks and potential impacts related to each mitigation measure if not implemented, and for guidance on how to improve. For existing sites, priority should be given to all the following: • control the access and fence the site • slopes are stabilised • have a waste placement plan • handling the waste at a specific operational area and disposing of it at the tipping face • regular (at least once a week) compacting and covering the waste • managing rainwater by limiting the amount of clean rainwater that enters the site • No tolerance for burning of waste Refer to Chapter 2.3 of the GTH guidelines for more information on mitigation measures and prioritisation. See UN-HABITAT (2021): Waste Wise Cities Tool. United Nations Human Settlements Programme. Kenya. For detailed information on the different levels of controls and corresponding mitigation measures at disposal sites.

Alternatives to waste disposal	Resource recovery and further reducing impacts	Is part of the waste diverted from disposal? (Organic or recyclable waste)	Implement segregation at source and separate the collection and management of organics and recyclable waste to reduce the amount of waste to be disposed of, minimise environmental impacts, and extend the lifetime of the disposal site. Refer to Chapter 3.3 (Organics) and 3.4 (Recyclables) in the HAWAI guidelines core text for guidance on designing and planning new services for resource recovery.
	Special waste	Are any of the special waste fractions disposed of at the disposal sites? • Construction and demolition waste • Disaster waste • Hazardous waste (e-waste, chemicals, etc.) • Medical waste (infectious, hazardous...) • Industrial waste Is there any strategy in place to manage the disposal of these special fractions separately?	Explore safer alternatives for hazardous, medical, and industrial waste, as they should not be disposed of in a domestic/municipal solid waste disposal site. Private companies can be available in-country to treat special wastes – due diligence is necessary to ensure the waste is treated safely and effectively. See Compendium - PART 4: Management of Special Waste Types (pp. 151-168) for more information about special wastes and references. Evaluation of the composition of construction and demolition waste, as well as disaster waste, is essential as it may contain harmful components, such as asbestos, paints, and others. When harmful components are present, special disposal methods need to be considered. Inert construction and demolition waste, as well as disaster waste, can be used as cover material at a disposal site or deposited in a dedicated location within the site.

Table T 3.2 B: Evaluation of service planning, operations and governance of disposal sites

Category	Feature	Questions to ask – things to observe – elements to evaluate	Actions and possible improvements
Management plan	Filling plan	Is there a defined filling plan for the disposal site?	Prepare or improve the filling plan to guide the orderly placement of waste and the construction of basic site features, such as slopes, drainage, roads, and cover, to ensure stability and proper rainwater management throughout the site's life.
	Operational plan	Is there an operational and environmental control plan in place for the disposal site to implement the necessary mitigation measures? Is the operational and environmental control plan being followed, and are the planned mitigation measures being implemented as intended?	Prepare or revise the operational and environmental control plan to manage day-to-day waste placement and site activities, ensuring that mitigation measures are implemented and environmental impacts are minimised. Revise if mitigation measures are implemented according to best practices and are functional to achieve their goal. See chapters 3, 4, and 5 of the GTH guidelines for guidance on operations at a disposal site.
	Fire control	Is there waste burning or evidence of previous waste burning at the disposal site? Is there a rapid response plan in place for extinguishing fires in the event of an emergency?	Implement mitigation measures to reduce the risks of burning, such as controlling access to prevent unauthorised access, compaction, and covering the waste. Have staff supervising the site and have an extinguishment plan in place in case of a fire, to be deployed rapidly.
Staff	Adequate staff and occupational health	Is the staff sufficient for the required operations at the site? Is the staff trained? (safety and occupational health, use of PPE, disposal site operations) Is the staff vaccinated and have access to healthcare whenever needed? Is the staff protected with PPE? Is there a contingency plan in place if individuals are unable to work due to illness or other reasons?	Prepare an occupational safety plan and Standard Operating Procedures for the disposal site. Train all staff on occupational safety and proper handling of waste, equipment, and machinery. Equip all staff with the necessary adapted personal protective equipment required for the facilities. Health checks and adequate vaccinations should be ensured according to a physician's advice. Provide access to basic personal hygiene amenities for staff, including toilets, handwashing facilities with soap, showers, a changing room, and separate break and eating areas. Refer to the Compendium - X.4 Occupational Health and Safety (pp. 134-137) .
Vehicles	Adequate fleet	Are there sufficient vehicles to spread, compact and cover the waste? (heavy-duty vehicles). Specify the vehicles available on site. Are vehicles always available when needed? Is there a contingency plan in place in case vehicles break down? Are there vehicles available to bring cover material on site? (if cover material not available on site)	Heavy-duty vehicles are required for mechanical operations at the disposal site. Consider purchasing, renting, or borrowing heavy-duty vehicles for regular or punctual operations, both for waste and cover material handling. Implement regular preventive and corrective maintenance to avoid breakdowns. Plan for alternative solutions (such as asset-sharing schemes with other stakeholders) in advance in case of unexpected vehicle downtime.

Control	Adequate supervision	Is the disposal site supervised? Is there a mechanism for staff to report problems/issues at the disposal site?	Supervisor positions are essential for an efficient and functional service. Ensure that you recruit qualified managers for supervision and monitoring.
	Adequate monitoring	Are there current data collection and monitoring processes in place? (amount, type, provenience) Is there any track record of waste deliveries at the disposal site?	Monitor each waste delivery and record the amount of waste, using either an estimated volume or measured weight (ideally with a weighbridge). Provenance of the waste, as well as verification of its type, is also essential.
Informal waste pickers	Inclusion	If waste pickers are present at the disposal site, are they included in the planning process for improving the disposal system? Are the contributions of informal waste pickers to waste management acknowledged and supported?	Include waste pickers when planning for changes and improvements in the SWM disposal system to account for their needs, challenges and possibilities to support waste management. Collaborate with waste pickers to reduce their risks at the disposal site by supporting them in accessing recyclables as soon as possible in the waste management chain (at source, if possible).
	Interaction with the waste disposal service	Are there negative impacts from waste-picking activities on the disposal service? (spreading waste, burning, disruption of normal operations, accidents, etc.) Are there positive impacts from waste-picking activities on the disposal service? (amounts of waste to collect reduced)	Identify, discuss and plan for alternatives to minimise negative interactions and maximise positive impacts.
	Regulation and support	Are waste pickers allowed to access the disposal sites? Is waste picking regulated to prevent the spreading, dumping, or burning of waste? Are informal waste pickers supported in increasing the recovery of materials and avoiding negative interactions with waste disposal services? (trainings, equipment, PPE, easier access to waste, etc...)	Collaborate with waste pickers to reduce unsafe waste practices and their presence at the disposal site – support them in accessing recyclables sooner in the waste management chain (at source, if possible). Provide training, infrastructure, space, equipment, and PPE to informal waste pickers to support them in achieving safer working conditions, improved waste recovery, and increased income. Include and communicate with all waste pickers about their rights and obligations – with the intention to minimise uncontrolled dumping and burning of waste.
Governance	Regulatory framework	Are local, regional and national laws and regulations followed? Are rules and regulations regarding SWM clear and established? Are there mechanisms in place to enforce simple rules and regulations? (prohibit dumping, burning, payment, and the obligation to use the service)	Establish simple rules and regulations that support the existing solid waste management system and align with local, regional, and national laws and regulations.
	Stakeholder engagement	Are the roles and responsibilities of the stakeholders involved in waste disposal clear? Is there close coordination with other humanitarian sectors? (shelter, WASH, health, planning) Is the local community engaged in SWM planning and implementation? Are local authorities and other relevant local stakeholders engaged in the planning and implementation? Has collaboration been discussed? Is sharing of infrastructure and capacity an option? Are there efforts to integrate the informal sector into the SWM system?	Create a stakeholder map to identify all relevant stakeholders and engage them at different levels: inform, consult, involve, collaborate, and empower. Clarify roles and responsibilities with the relevant stakeholders. Early engagement and empowerment of local stakeholders and authorities will allow smoother transitions for long-term SWM. Collaborate with waste pickers to reduce unsafe waste practices – support them in accessing recyclables sooner in the waste management chain (at source, if possible). Prohibiting access to the disposal site for informal waste pickers without providing an alternative solution to sustain themselves is not recommended.

Governance	Conflict management	Are there any conflicts regarding the disposal site and its impacts? (host communities, any settlement around the disposal site) Are there any persons directly affected by the presence of the disposal site? (air pollution, water pollution, windblown waste)	Evaluate the severity of the impacts on the surroundings of the disposal site. Develop a conflict management plan to identify, address, and resolve disputes that may arise from operating a waste disposal site. Ensure stakeholder engagement, transparency, fairness, and sustainability.
	Equal access to services	Was the host community approached to collaborate on waste disposal, for instance, to plan for a common, safe waste disposal site? Is support also given to host communities?	Ensure that waste disposal services are available to both displaced persons and host communities. If the host community lacks access to safe disposal, integrate them into the same disposal site where possible, promoting shared use, economies of scale, and equitable access. Provide resources, support, and coordination to prevent disparities or tensions between communities.
	Strategic planning	Is there a long-term strategy to improve and/or at least maintain service provision? Is there monitoring of key indicators to facilitate planning and informed decision-making? (waste generation, amounts collected and disposed of at the disposal site, etc....) Is there a forecast for future trends and needs related to waste disposal? (population, expansion of service, change in collection system, future segregation of specific waste streams, etc.)	Improving SWM typically involves a stepwise approach, with long-term strategies and a clear vision guiding gradual improvements. Define and measure key performance indicators for waste disposal. Do a forecast analysis to help plan for future changes that can impact the disposal service.
	Financing and cost recovery	What are the current costs of waste disposal? Can the current costs be reduced? Are the current costs sustainable in the long term? What are the current revenue sources, and how can they be sustained? Is there a strategy in place to cover the long-term operational and capital costs? Has a gate fee or any other cost recovery mechanism been implemented?	Define precisely the yearly costs of the service, including capital costs and operational costs. Tool 8 – Cost Evaluation can be used for support. Evaluate waste disposal and improve efficiency to reduce costs. A gate fee at the disposal site can be implemented for cost recovery. Consider implementing tariffs for service provision to waste generators (users) to offset the costs associated with waste management. Early collaboration and empowerment of local stakeholders is essential for the long-term sustainability of SWM services.
	Public awareness and participation	Are there opportunities for participatory planning and public consultation? Is there a regular education and public awareness program in place?	Engage the community in planning and decision-making to ensure waste management meets local needs, encourages ownership, and improves compliance. Implement regular education and awareness activities on safe waste handling, disposal practices, and environmental protection to promote responsible waste management.