



**UNHCR**  
The UN Refugee Agency

# UNHCR Waste Management

From design, procurement, warehousing and distribution to post-consumer disposal

# UNHCR Waste Management: From design, procurement, warehousing and distribution to post-consumer disposal

## 1. Introduction

UNHCR purchases and distributes significant quantities of relief items and essential goods to address the urgent needs of forcibly displaced and stateless people. This in turn produces a substantive amount of waste. The objective of this concept note is to establish a comprehensive strategy for the management of diverse waste streams generated by these items, while also ensuring their consistent and sustainable life-cycle management.

One of the three priority areas of the UNHCR Operational Strategy for Climate Resilience and Environmental Sustainability 2022-2025 is to improve the sustainability of the end-to-end supply chain. Among the key actions to reduce CO2 emissions, UNHCR aims to minimize and manage the waste generated by its operations. The expected outcome is to incorporate a waste management system to support operations as a standardized activity in Country Operations (full loads, recycling, repurposing, safe disposal)<sup>1</sup> to ensure that goods that have reached the end of their lifecycle are properly managed.

The upward trajectory in global forced displacement is showing no sign of slowing and it is expected that waste generation will continue to increase as the demand for humanitarian aid simultaneously grows. With climate change at a critical juncture, it is essential to find immediate solutions to address waste management problems in humanitarian settings.

Globally, most waste is mismanaged. It is often dumped or disposed of in landfills or incinerated. In many situations, there are no proper waste sorting, storage, collection and treatment systems.<sup>1</sup> This has a serious negative impact on the environment and the health of populations, such as an increase in air, land and water pollution, transmissible diseases and respiratory infections.<sup>2</sup>

Waste can be prevented and minimized at almost any point along the life cycle of a product through sustainable production, sustainable consumption and waste management.<sup>3</sup> There are different management options according to the waste management hierarchy, which include: prevention, minimization, reuse, recycling, recovery and disposal.<sup>4</sup>

To be properly managed and disposed of, waste should be first separated according to each type of material composition (organic, plastic, paper, glass, metal, etc.).

<sup>1</sup> See Annex I - Trends in Solid Waste Management, Source: World Bank.

<sup>2</sup> <https://www.sciencedirect.com/science/article/pii/S0959652623007254> "Mismanaged waste has been suggested to cause between 400,000 and 1 million disease-related deaths a year in low- and middle-income countries."

<sup>3</sup> Global Waste Management Outlook, UNEP

<sup>4</sup> See Annex II - Waste Management Hierarchy

The removal, transportation and treatment of waste should be managed locally, to allow efficient collection and appropriate treatment. Local waste management services can also help reduce the transportation of waste and associated emissions while promoting local jobs. Moreover, raising awareness of proper waste sorting practices can create a higher local value addition and support the population's sense of agency.

Environmental risks often materialize in the context of the work of UNHCR, such as camps, settlements and other situations where no adequate waste management exists. For example, the uncontrollable burning of waste around refugee camps<sup>5</sup> increases the risks to the health and safety of the forcibly displaced, stateless persons and local communities.

Aligning with its overarching environmental strategy, UNHCR is improving the technical specifications of core relief items by promoting the use of recycled material and avoiding single-use plastic packaging. This is already reducing the generation of waste and helping to promote sustainable production.

Some initiatives have been implemented for recycling and reusing plastic and e-waste in the field through cooperative efforts with other aid agencies and non-governmental organizations.<sup>6</sup> Training related to sustainability will also be provided for all staff, with more specific courses made available for supply colleagues, to have a better understanding of ways to function more sustainably, both at work and at home.

## 2. The approach of UNHCR<sup>7</sup>

To understand the approach of UNHCR' to waste management, it's essential to consider the source of various types of waste. This analysis should take into account the following factors:<sup>8</sup>

- 1) **Upstream waste:** This material is generated during the production processes by manufacturing companies, and it does not reach the end-users. **Upstream waste is not considered in this concept note** since it relates to the waste management system of the supplier. However, this aspect should be considered during the selection process of suppliers. It is covered through sustainable sourcing and procurement actions, where UNHCR aims to include sustainability assessments as part of its supplier monitoring efforts.
- 2) **Downstream waste:** This type of waste is generated both by the practitioners (transportation and distribution service providers, partners and UNHCR staff involved in the storage, distribution and delivery of material) and the end users of items. It is the material that is discarded after being used and relates to the process of storage and distribution, as well as the consumption of the goods purchased to support emergency and non-emergency operations.

This type of waste is first generated where the material reaches UNHCR warehouses<sup>9</sup>, i.e. global emergency stockpiles and local warehouses. It is associated with the packaging of items (e.g., plastic, cardboard boxes, wooden pallets, etc.), is relatively clean and can be easily sorted. During the distribution of these items to a specific destination for consumption, the waste generated by the delivery

<sup>5</sup> [Domestic and Refugee Camp Waste Management Collection and Disposal - Oxfam Policy & Practice](#)

<sup>6</sup> See Annex III - UNHCR Waste Management Initiatives

<sup>7</sup> Involvement of relevant Clusters will be required in addition to Logistics, such as Global Camp Coordination and Camp Management (CCCM), WASH, Health, etc.

<sup>8</sup> See Annex IV - Examples of pre-consumer and post-consumer material

<sup>9</sup> Some warehouses are not owned by UNHCR, they are under rental agreements with service providers or partners.

activities is also related to the packaging. In addition, there is the expired and obsolete inventory that, once its shelf life has been reached and can no longer be used, needs to be disposed of.<sup>10</sup>

Waste is also generated when the items are consumed by individuals after being deployed from warehouses to settlements, refugee camps or other locations. This type of post-consumer waste is usually mixed (e.g., textiles, plastics, metals, glass, etc.), and requires specific knowledge to be sorted, as its material content is the result of different productions and usages.

The concerted engagement from different UNHCR entities involved in waste management is necessary to develop proper tools and build up a functioning system.

The most involved functions in the regional bureaux and operations are:

- Administration: responsible for waste generated related to the activities of the offices
- Programme/Technical units: responsible for waste generated from the activities of operations implemented directly or through partnership agreements (e.g., with government entities, international or national NGOs)
- Supply: responsible for the purchase of goods and logistic support to UNHCR as well as its partners
- Protection/Field: responsible (among other things) for community mobilization and engagement

Determining the appropriate course of action for various types of waste and establishing global priorities within UNHCR can be challenging, mainly because of the diverse local contexts in which the organization operates. These contexts encompass factors such as local market conditions, barriers to market entry, and resource limitations.

Nevertheless, it is crucial to initiate the development of standardized waste management practices. These practices should serve as a guiding framework for addressing the waste generated by UNHCR operations at the country level. Additionally, it is imperative to ensure that initiatives undertaken at the country level are synchronized and coordinated with the efforts of other organizations. This collaboration promotes synergies and maximizes the efficient use of resources.<sup>11</sup>

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<sup>10</sup> IOM-099/2012 UNHCR Inventory Management Policy. Inventory Category: tents, bedding materials, construction materials, food and other supplies, household items, medical supplies.

<sup>11</sup> For example, WREC Project (Waste management and measuring, Reverse logistics, environmentally sustainable procurement and transport, and Circular economy), of the Logistic Cluster, has produced a guidance tool to support humanitarian field practitioners with conducting assessments of companies specialized in waste management. They also provide a list of identified suppliers for some countries and a focal point contact in case of questions.

### 3. Proposed Objectives, Outputs and Activities<sup>12</sup>

Objectives	Outputs	Activities
Objective 1: Improve understanding of UNHCR waste management as an essential component of sustainability.	Output 1.1: Assessment of the current situation of the waste that UNHCR generates in warehouses, camps, settlements and urban settings. Based on existing experiences, define baseline and methodology.	<ul style="list-style-type: none"> <li>Identify the different sources, types and the quantity of waste at different operations facilities.</li> <li>Definition and classification of the different types of waste generated by UNHCR.</li> <li>Identify and assess the different waste management treatments options/methods/procedures - for each type of category including risks, challenges and possible solutions.</li> <li>Identify the existing methods/ process of waste management of the country offices/ countries and warehouses.</li> <li>Understand the national/international legal, operational and regulatory framework.</li> <li>Understand the informal sector in waste management in selected countries.</li> </ul>
	Output 1.2: Raise awareness of the importance of waste management among all staff, particularly at the Country Operations level through communications tools and training.	<ul style="list-style-type: none"> <li>Develop training materials incorporating concepts and practices (including guidelines, templates, checklists, e-learning).</li> <li>Develop a communication campaign (infographics, case studies, videos).</li> <li>Promote sharing of knowledge and experience between different Country Operations and with other Organizations.</li> </ul>
Objective 2: Improve and standardize the practices/procedures of waste management of UNHCR.	Output 2.1: Develop tools to support the design or improvement of a waste management system in warehouses and refugee/IDP camps, settlements and urban settings.	<ul style="list-style-type: none"> <li>Identify gaps in current instruments/tools and propose areas of improvement.</li> <li>Develop guidelines with best environmental management practices for waste management in warehouses and field locations.</li> <li>Establish guidelines for waste management standards through outsourcing services (SOP).</li> <li>Design tools and templates for the procurement of waste management services: terms of reference, evaluation criteria, templates, etc.</li> <li>Provide recommendations and guidelines on the development of a waste management system using digital technology tools already available at UNHCR.</li> </ul>
Objective 3: Work with and increase the participation and collaboration of different stakeholders (staff, UN Agencies, the forcibly displaced and stateless persons, partners of UNHCR, government and	Output 3.1: Identify potential local collaboration/ collaborative arrangements in selected target areas, with stakeholders for the provision of waste management services (UN agencies, development	<ul style="list-style-type: none"> <li>Mapping potential local suppliers.</li> <li>Identify existing frame agreements established by UN agencies for the provision of waste management services.</li> <li>Identify other collaborative initiatives.</li> <li>Participate and engage with different initiatives, including a proactive approach to green funding opportunities.</li> </ul>

<sup>12</sup> The timeline of some of these Objectives is by 2025. However, a specific work plan will identify realistic deadlines.

host population) in waste management.	actors, governments, NGOs, suppliers etc.).	
Objective 4: Incorporate waste management services in UNHCR offices and warehouses to reduce the waste they produce.	Output 4.1: Develop an action plan for the establishment/improvement of a waste management system in 70 Country Operations and their warehouses in collaboration with functions involved in priority areas.	<ul style="list-style-type: none"> <li>• Identification of urgent waste issues and selection of the appropriate waste management options.</li> <li>• Determination of objectives, results, activities and roles and responsibilities at Country level.</li> <li>• Assessment of the main obstacles and potential solutions.</li> <li>• Establishment of a timeline</li> <li>• Establishing a monitoring system and setting targets for waste reduction.</li> <li>•</li> </ul>
Objective 5: Establish a waste management system in refugee/IDP camps settlements and urban settings to reduce environmental and health risks.	Output 5.1: Develop an action plan for the establishment of a waste management system in 10 camps/settlements in collaboration with functions involved in priority areas.	<ul style="list-style-type: none"> <li>• Identification of urgent waste issues and selection of the appropriate waste management options.</li> <li>• Determination of objectives, results, activities and roles and responsibilities at site level.</li> <li>• Assessment of the main obstacles and potential solutions.</li> <li>• Establishment of a timeline</li> <li>• Establishing a monitoring system and setting targets for waste reduction.</li> </ul>
Objective 6: Mobilize the resources required to achieve the objectives of the UNHCR waste management initiative.	Output 6.1: Develop an action plan for the mobilization of the resources required to achieve the objectives of UNHCR waste management initiative.	<ul style="list-style-type: none"> <li>• Definition and selection of target areas.</li> <li>• Identify and select the technical expertise and any additional human resources necessary.</li> <li>• Develop a budget for estimated expenses required to manage and implement the activities and possible funding sources.</li> <li>• Establish a strategy to identify fundraising opportunities to cover the needs not funded.</li> </ul>

### 3. References

[UNHCR Operational Strategy Climate Resilience and Environmental Sustainability](#)

[What a waste 2.0: A global snapshot of solid waste management to 2050](#)

[UNHCR Environmental Guidelines](#)

[UNHCR Emergency Handbook, waste management standards](#)

[UNEP Global Management Outlook](#)

[Guidance on Waste Definitions, Circular Plastic Alliance, 21 September 2021](#)

[Oxfam, Domestic and Refugee Camp Waste Management](#)

[Circular Plastic Alliance, Guidance on Waste Definitions](#)

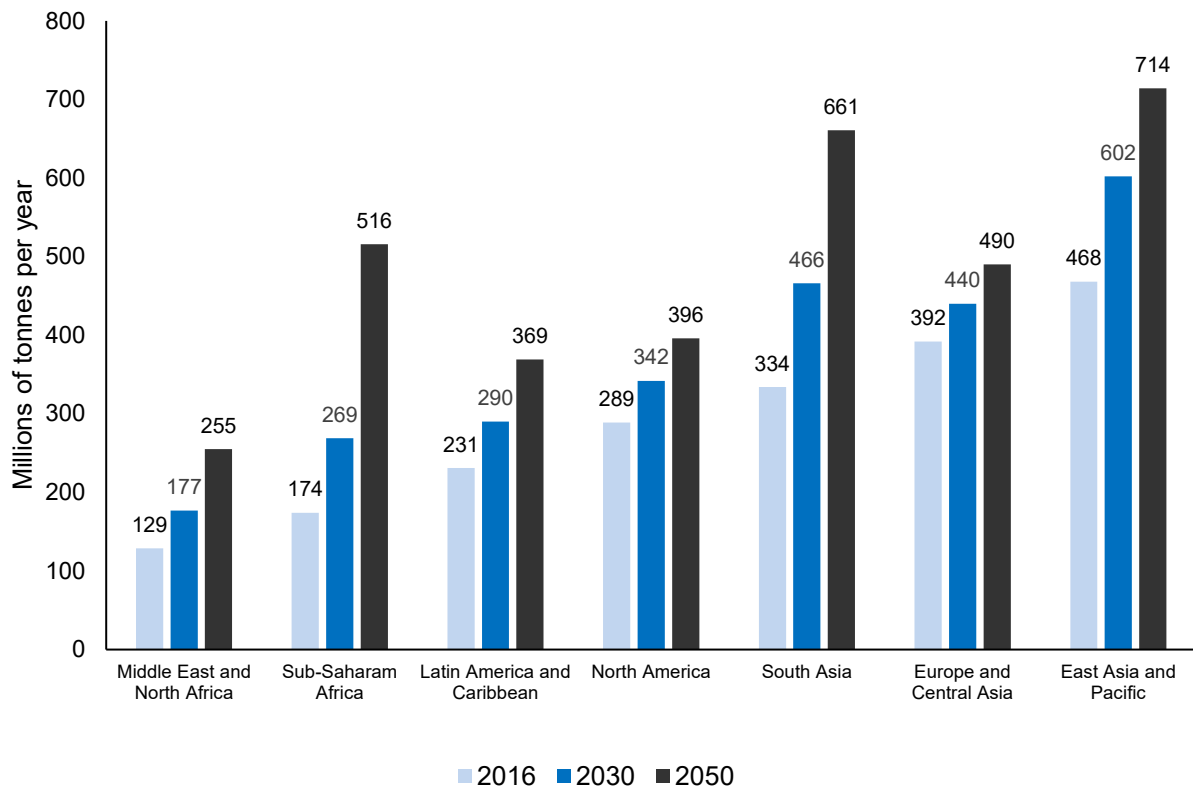
## 4. Annex

### Annex I - Trends in solid waste management

The data reported are predominantly from 2011–2017

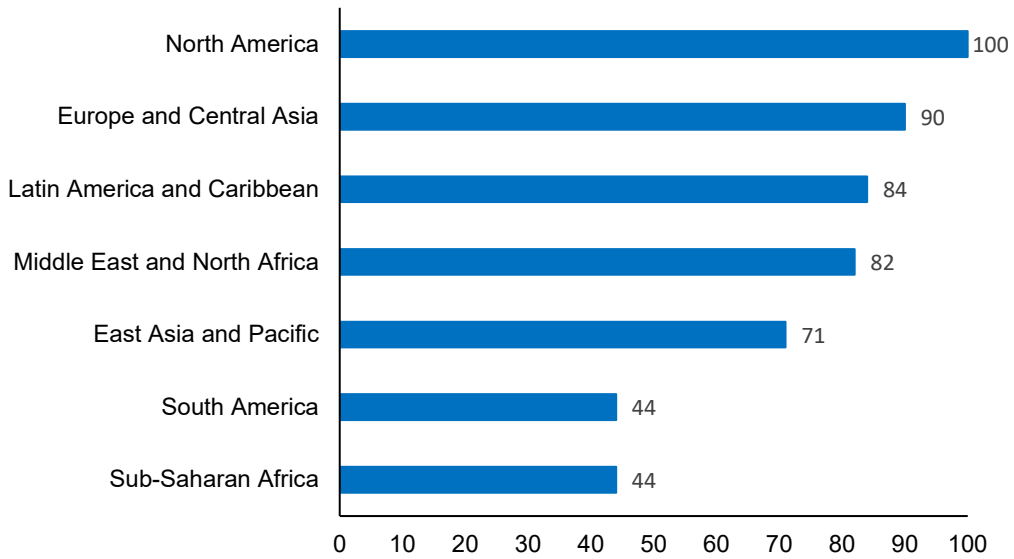
Source: [What a waste 2.0: A global snapshot of solid waste management to 2050](#)

Projected waste generation by region (millions of tons) from 2016 to 2050



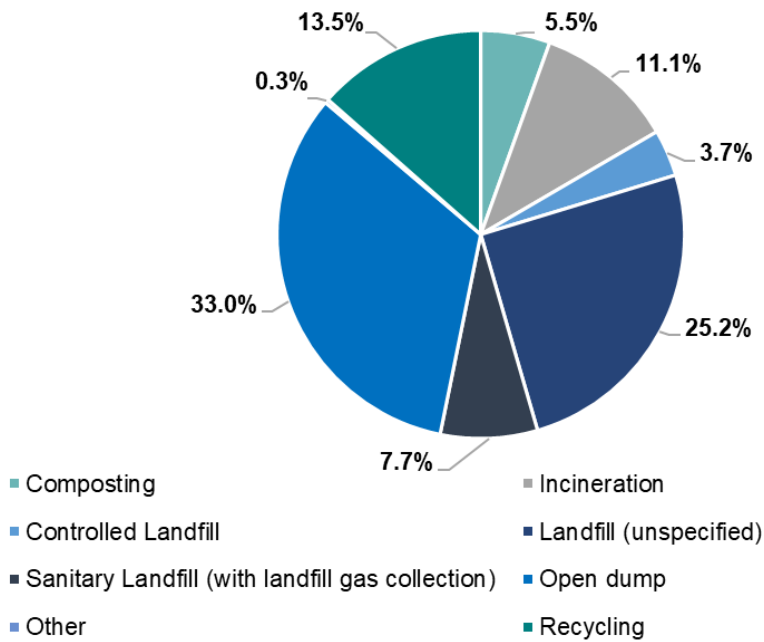
Percentage increase of projected waste from 2016 to 2050: 66,3% in Sub-Saharan Africa, 49,5% in South Asia, 49,4 % in Middle East and North Africa, 37,4% in Latin America and the Caribbean, 34,5% in East Asia and Pacific, 27% in North America and 20% Europe and Central Asia.

### Waste Collection rates per region (per cent)



Waste collection provided by municipal services in rural and urban areas per region. In rural areas for low-middle-income countries, waste collection is approximately 53% less than in urban areas.

### Global treatment and disposal of waste (per cent)

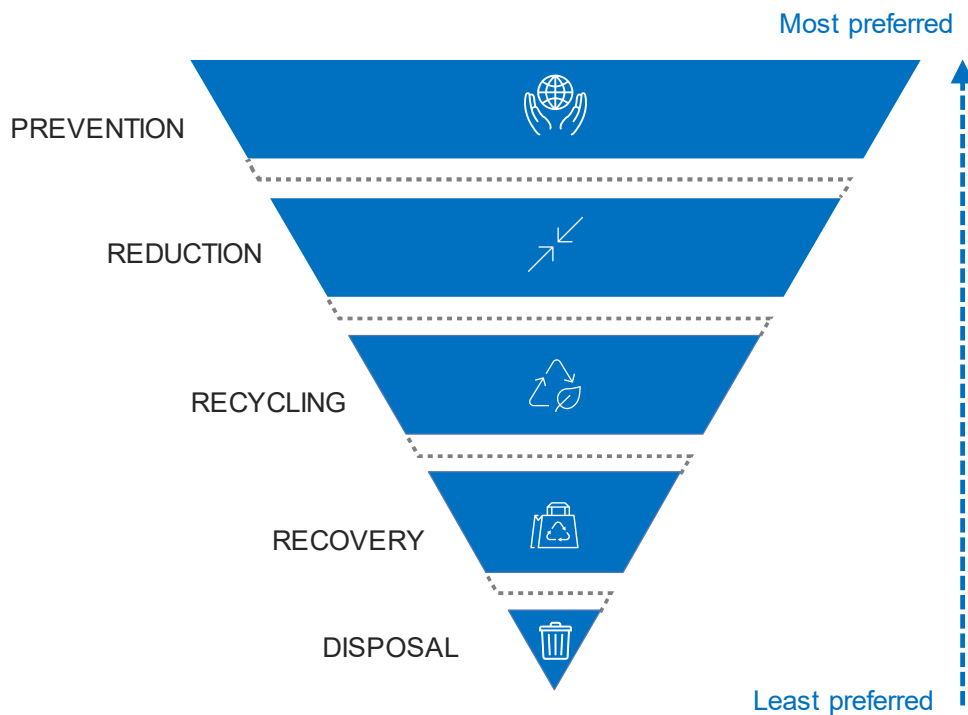


36,6% of waste is disposed of in landfills, 33% is openly dumped, 19% goes into recovery (13.5 recycling and 5.5% composting) and 11% is incinerated.



## Annex II - Waste management hierarchy

Source: UNEP Global Management Outlook



There are different versions of the waste management hierarchy, however, they usually reflect the order of priority to prevent and minimize waste. It is also often referred to as the 3 Rs (Reduce, Reuse, recycle) or 4Rs (Reduce, Reuse, Repurpose, Recycle).

**Prevention:** is the first option to be prioritized and involves reducing the amount of waste generated through different means, such as product design, manufacturing processes and consumer behaviour.

**Reduction:** If waste generation cannot be completely avoided, efforts should be made to minimize or reduce the amount of waste produced. This can be done through actions like improving production efficiency, implementing recycling and reuse programs and promoting sustainable consumption patterns.

**Recycling and reuse:** Recycling involves the collection, sorting and processing of waste materials to manufacture new products or raw materials. Before considering disposal, waste materials that still have value can be reused or repurposed for another use. This can involve repairing, refurbishing or redistributing products or materials.

**Recovery:** If waste materials cannot be recycled or reused, they can be used as a source of energy through processes, like combustion (controlled burning) or pyrolysis (temperature decomposition of organic material). Resource recovery also includes other methods such as composting.

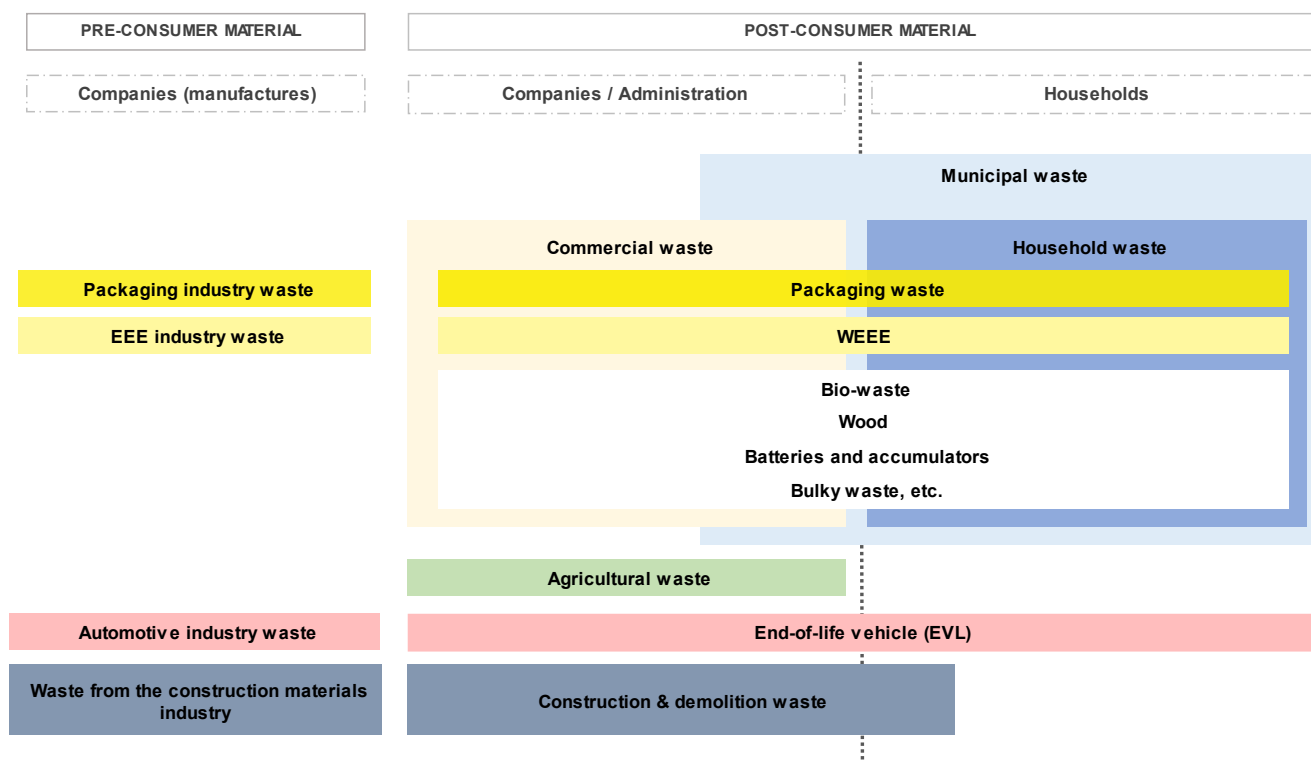
**Disposal:** final action, which involves discarding the unwanted material through controlled facilities, where the waste can be disposed of.

### Annex III - UNHCR Waste management initiatives

No	Organizations	Location	Year	Description
1	UNHCR and Zoa Netherlands	Ethiopia	2016	Reuse of plastic shopping bags by refugee women to create useful household products such as table covers. <a href="#">Web story</a>
2	UNHCR	Algeria	2017	Use of discarded plastic bottles that are filled with sand to build houses. <a href="#">Web story</a>
3	UNHCR and Innovation Norway	Algeria	2021	A workshop in the Sahrawi refugee camps to improve plastic management in the camps, while creating additional income of source for refugees and host communities.
4	UNCHR, GIZ, UNITAR, WFP, OIM		2022	E-waste task force: a group that works towards joint activities to ensure safe and effective e-waste management in the operations of humanitarian agencies.
5	UNHCR, IUCN	Bangladesh	2022	Youth groups are improving waste management, including by making and distributing bins made from bamboo, planting gardens in open areas where people used to throw their rubbish <a href="#">Web story</a>

### Annex IV- Example of pre-consumer and post-consumer material

Source: Guidance on Waste Definitions, Circular Plastic Alliance, 21 September 2021



Pre-consumer material originates from the production of a product, while post-consumer material originates from its use.

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