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Pre-conceptualization and support to establish a Plastic Waste Recycling/Upcycling Hub near existing waste management infrastructure

Inception Report

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WATER ENVIRONMENT SUPPORT - BIODIVERSITY AND CLIMATE IN THE NEIGHBORHOOD SOUTH REGION

The regional EU funded “Water Environment Support-Biodiversity and Climate Action (WES-BCA)” project is the continuation of WES project and capitalizes on the experience of three more successful predecessor regional EU funded projects SWIM-Horizon2020 SM, SWIM SM and Horizon 2020 CB/MEP. It supports the countries of the Southern Neighborhood Region in addressing the improvement and protection of the environment, the restoration of biodiversity and the management of scarce water resources, while enhancing the resilience to climate change in the Mediterranean region, strengthening the formulation and enforcement of the relevant policies of the Partner Countries (PCs) and the two regional political frameworks, namely the Union for the Mediterranean (UfM) and the Barcelona Convention. WES-BCA will enhance the capacity of relevant stakeholders in order to support them in formulating and implementing policies in the aforementioned issues, raise awareness, increase knowledge and improve public understanding, stimulating behavioral changes needed for appropriate climate action and environmental protection.

WES-BCA has two components which will run hand-in-hand:

COMPONENT I (Water, Biodiversity and Environment) with the specific objectives:

- to promote an integrated approach to biodiversity protection/restoration and pollution reduction/prevention
- to manage more efficiently scarce water resources in the Southern Neighborhood

COMPONENT II (Communication and Outreach) with the specific objective:

- to raise awareness and better understanding by the general public (and specific segments of the population) including youth and women are promoted stimulating adoption of appropriate behaviors and attitudes towards improved climate action and effective environmental protection.

DISCLAIMER:

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TABLE OF CONTENTS

0	BACKGROUND INFORMATION	7
0.1	ACTIVITY CONTEXT	7
0.2	MAIN OBJECTIVES AND OUTCOMES	8
0.2.1	SPECIFIC OBJECTIVES	8
0.2.2	EXPECTED OUTCOMES	9
0.2.3	IMPLEMENTATION APPROACH	9
0.3	SCOPE OF WORK	10
0.3.1	DELIVERABLES	10
1	INTRODUCTION	11
1.1	PLASTIC SECTOR IN JORDAN	11
1.2	PLASTIC AND SUP INITIATIVES	12
1.3	REGULATORY FRAMEWORK	15
1.3.1	REVIEW OF APPLICABLE JORDANIAN REGULATION	15
1.3.2	NEW REGULATION IN THE PIPELINE OF MINISTRY OF ENVIRONMENT	19
2	PRELIMINARY SCOPING ANALYSIS	21
2.1	DESK REVIEW	21
2.1.1	TARGETED PLASTIC MATERIALS OVERVIEW	21
2.1.2	ADDITIONAL MATERIAL STREAMS OVERVIEW	28
2.2	KEY STAKEHOLDERS' ENGAGEMENT	33
2.2.1	BILATERAL INTERVIEWS	34
2.3	RAPID STAKEHOLDER MAPPING	36
2.4	UPCYCLING HUB CONCEPT	38
3	REFINED METHODOLOGY	40

LIST OF TABLES

TABLE 1: LIST OF DELIVERABLES.....	10
TABLE 2: LIST OF APPLICABLE REGULATION.....	15
TABLE 3: PLASTIC MASS-BALANCE	24
TABLE 4: LIST OF POTENTIAL ADDITIONAL MATERIALS	28
TABLE 5: KEY STAKEHOLDER LIST	33
TABLE 6: LIST OF PROPOSED LOCATIONS FOR THE UPCYCLING HUB.....	35
TABLE 7: LIST OF SECONDARY STAKEHOLDERS	36
TABLE 8: REFINE METHODOLOGY	40

LIST OF FIGURES

FIGURE 1: UPCYCLING HUB APPROACH	8
Figure 2: PLASTIC WASTE FLOW.....	25
FIGURE 3: EXAMPLES OF UPCYCLED PRODUCTS FROM TIRES	30
FIGURE 4: EXAMPLES OF PRODUCTS FROM SCRAP MATERIALS.	31
FIGURE 5: EXAMPLES OF FURNITURE & WOOD.....	33
FIGURE 6: TOUTA YARD BOUNDARIES AND LOCATION	36
Figure 7: INTEREST/INFLUENCE MATRIX.....	37
Figure 8: UPCYCLING HUB SCHEMATIC MODEL	38
FIGURE 9: INTERNATIONAL RECYCLING/UPCYCLING CENTERS	39

ABBREVIATIONS

AVTR	Amman Vision for Treatment and Recycling
C&D	Construction and Demolition
CCEC	Creative Circular Economy Center
ENI	European Neighbourhood Instrument
EPR	Extended Producer Responsibility
EU	European Union
F&B	Food and Beverage
GAM	Greater Amman Municipality
GEF	Global Environment Facility
GG-NAP	Green Growth National Action Plan
GJU	German-Jordan University
HDPE	High Density Polyethylene
HORECA	Hotel, Restaurant, and Café
HTU	Hussein Technical University
JCC	Jordan Chamber of Commerce
JCI	Jordan Chamber of Industry
LDPE	Low Density Polyethylene
MoENV	Ministry of Environment
MOU	Memorandum of Understanding
MSW	Municipal Solid Waste
PE	Polyethylene
PET	Polyethylene Terephthalate
PP	Polypropylene
PPP	Public-Private Partnership
PS	Polystyrene
PVC	Polyvinyl Chloride
R&D	Research and Development Fund
RMG	Ready-Made-Garment
SME	Small and Medium Enterprises
SUPs	Single-use plastics
SWM	Solid Waste Management
UNDP	United Nations Development Programme
WES-BCA	Water and Environment Support – Biodiversity and Climate Action
WM	Waste Management

0 BACKGROUND INFORMATION

0.1 ACTIVITY CONTEXT

The activity “Pre-conceptualization and support to establish a Plastic Waste Recycling/Upcycling Hub near existing waste management infrastructure” is part of the EU-funded Water and Environment Support – Biodiversity and Climate Action (WES-BCA) project under Component I (Water, Biodiversity and Environment). The WES-BCA project aims to enhance environmental protection, biodiversity restoration, and the sustainable management of water resources across the European Neighbourhood Instrument (ENI) South Neighborhood Region, while strengthening resilience to climate change and supporting the formulation and enforcement of environmental policies.

Within this regional framework, Jordan is taking concrete steps toward a greener and more circular economy, guided by national policies such as the National Municipal Solid Waste Management Strategy and Action Plan (2015) and the Waste Sector Green Growth Action Plan 2021–2025. These frameworks set out the country’s ambition to move from a disposal-oriented system toward a resource-efficient and circular model. Over recent years, Jordan has made notable progress in upgrading its solid waste management infrastructure, including engineered landfills, waste sorting, and recycling initiatives, and in piloting innovative sustainability projects such as methane gas capture, composting, and awareness campaigns on single-use plastics (SUPs).

However, despite these advancements, the downstream recycling and upcycling market remains underdeveloped. Studies, including the USAID Market Systems Analysis of Recycling in Jordan (2023), the JSF-GIZ Circularity Report (2023) and the EU-WES Roadmap to address SUP items in Jordan (2023), highlight persistent challenges such as limited domestic demand for sorted recyclables, high export costs, and fragmented coordination among key stakeholders. At the same time, these studies underscore promising opportunities to stimulate local economic growth through circular economy models, particularly by engaging youth, entrepreneurs, and creative industries in turning waste into valuable materials and products.

Building on previous WES initiatives in Jordan, the development of a public-private roadmap to reduce SUPs, the Green Banking Strategy that addressed financial barriers to plastic waste reduction, and a youth awareness campaign promoting responsible consumption, this activity represents a natural next step. It aims to design and support the establishment of an Upcycling Hub that can serve as a practical and innovative space where sustainability, creativity, and entrepreneurship co-exist.

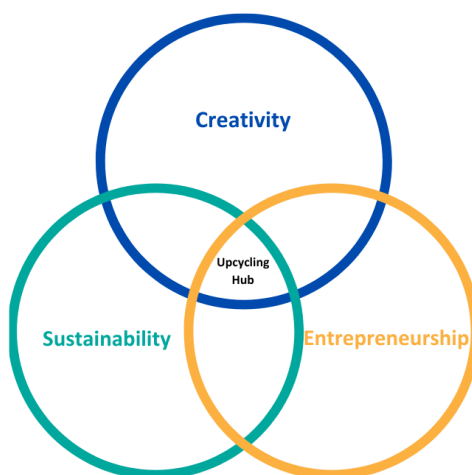


FIGURE 1: UPCYCLING HUB APPROACH

The rationale for this activity is rooted in the need to retain and enhance the economic value of recyclable materials, particularly plastics, while supporting Jordan's transition to a circular economy. The proposed Upcycling Hub will provide an enabling environment to connect public institutions, private sector actors, academia, and civil society in the co-creation of sustainable solutions. It will also promote green innovation and job creation, aligning with national and international frameworks such as the Waste Management Framework Law (No. 16 of 2020), the EU SUPs Directive, and Jordan's Economic Modernization Vision.

0.2 MAIN OBJECTIVES AND OUTCOMES

This national activity aims to promote innovation in the reuse, recycling, and upcycling of plastic waste materials in Jordan, with a particular emphasis on developing practical and scalable models that contribute to the country's ongoing transition toward a green, circular, and resource-efficient economy. The activity is implemented under the WES-BCA regional project and is directly aligned with the priorities of the Waste Sector Green Growth Action Plan 2021–2025, which positions waste as a strategic entry point for economic growth, environmental protection, and job creation.

Jordan has made noticeable progress in advancing its waste management framework and infrastructure; however, the value chain for secondary plastics remains fragmented, with limitations in sorting, market linkages, circular product development, and private sector engagement. The proposed activity seeks to address these gaps by identifying high-potential opportunities for valorising recovered plastics and by enabling collaboration across key actors, including public institutions, private enterprises, entrepreneurs, and civil society organizations. This collaborative approach is intended to stimulate innovation ecosystems that can transform plastic waste into valuable materials and products, reduce environmental impacts, and encourage sustainable economic development.

0.2.1 SPECIFIC OBJECTIVES

1. To identify and assess opportunities for enhancing the economic value of recovered plastic waste streams, focusing on innovative recycling, reprocessing, and upcycling approaches that enable material circularity. This includes analysing existing supply chains, evaluating technological and market readiness, and identifying feasible models for transforming plastic waste into higher-value products. This objective contributes directly to Action WS14 of the

Waste Sector Green Growth Action Plan (2021–2025), which calls for fostering innovation and entrepreneurship in waste-based value creation.

2. To support the efficient and effective use of existing municipal solid waste (MSW) management infrastructure by engaging key actors: public institutions, private sector entities, academic institutions, and civil society in co-developing scalable circular economy solutions. This will help reinforce national waste diversion efforts, strengthen local material recovery practices, and ensure that investments in waste management infrastructure are utilized in a manner that maximizes both environmental and socio-economic benefits.

0.2.2 EXPECTED OUTCOMES

The activity is expected to generate the foundational knowledge, institutional coordination, and conceptual framing necessary to establish a Plastic Waste Upcycling Hub that is technically sound, context-appropriate, and institutionally anchored. Key outcomes include:

- **Refined understanding of the current landscape**, challenges, and market opportunities for plastic waste valorisation in Jordan, supported by data and stakeholder insights.
- **Stakeholder engagement framework** that identifies and mobilizes relevant actors, including innovators, entrepreneurs, producer responsibility organizations (PROs), municipalities, and industrial partners.
- **Conceptual design elements and operational recommendations** for the Upcycling Hub, outlining potential functions, governance models, partnerships, and sustainability pathways.
- **Enhanced collaboration and knowledge exchange** mechanisms to support ongoing alignment between waste management priorities, private sector innovation, and circular economy principles.
- **Capacity strengthening and awareness raising** that supports the development of new green business opportunities, improved material recovery practices, and greater public and institutional engagement in circular resource management.

0.2.3 IMPLEMENTATION APPROACH

In order to achieve the above objectives, the WES-BCA project will draw on the knowledge and services of LDK CONSULTANTS S.A. (hereinafter referred to as the Consultant), based on its technical expertise in circular economy planning, solid waste management, and stakeholder facilitation. The Consultant will work under the framework of the WES-BCA Project, ensuring alignment with the project's objectives, methodologies, and quality standards.

Close collaboration will be maintained with the Ministry of Environment (MoENV) as the primary national counterpart, along with other relevant institutions, private sector actors, academia, and civil society organizations.

Coordination mechanisms may include structured meetings, bilateral consultations, thematic workshops, and joint validation sessions. Progress updates will be shared with WES-BCA and national stakeholders throughout the assignment, ensuring transparency, inclusiveness, and shared ownership of results.

0.3 SCOPE OF WORK

The scope of work for this activity focuses on the pre-conceptualization and development of a Plastic Waste Upcycling Hub model in Jordan through evidence-based analysis, stakeholder engagement, and conceptual design support. The Consultant is responsible for assessing current conditions, identifying opportunities for value creation from plastic waste, and proposing practical, locally appropriate, and scalable solutions that align with national circular economy priorities.

The work will be carried out in close collaboration with the MoENV and relevant stakeholders across the public, private, and civil society sectors. The Consultant will ensure that all tasks are implemented in a participatory and consultative manner, promoting ownership and ensuring that proposed solutions respond to real needs and opportunities.

An inception meeting will be conducted remotely, tentatively in February 2026, with the WES-BCA team, the Consultant, and representatives from the MoENV, GAM, AVTR, and other relevant stakeholders. The meeting will present and validate the inception phase findings outlined in this report, confirm the scope and objectives of the assignment, refine the proposed methodology as necessary, and agree on next steps, including the engagement of additional stakeholders where relevant.

0.3.1 DELIVERABLES

The table below presents the timeline of this assignment.

TABLE 1: LIST OF DELIVERABLES

Tasks	Deliverables	Expected Date of Completion
Task 0: Kick-off meeting Task 1: Inception Report and Preliminary Scoping of the Recycling and Upcycling Market	Deliverable 1: Inception Report including preliminary scoping study, the methodology.	Feb 2026
Task 2: Stakeholder mobilization for Innovative Plastic Recovery and Upcycling Solutions	Deliverable 2: Stakeholder Mobilization Report with Recommendations on how the upcycling hub can respond to sector-specific vision/expectations and needs.	Apr 2026
Task 3: Pre-Feasibility Study for a National Upcycling Hub and Sustainable Business Models	Deliverable 3: Pre-Feasibility Analysis Report.	Aug 2026
Task 4: Preparation of a Viability/Sustainability Concept Note of a Pilot Upcycling Hub	Deliverable 4: Concept Note showcasing the upcycling hub's viability/sustainability, and a list of potential funding sources and recommendations for funding.	Sep 2026

1 INTRODUCTION

1.1 PLASTIC SECTOR IN JORDAN

The plastic industry in Jordan represents one of the most dynamic and influential components of the national industrial economy. It plays a pivotal role in supporting economic growth, creating employment opportunities, and providing essential inputs for key sectors such as packaging, construction, and consumer goods.

The plastics industries encompass more than 600 registered establishments including around 200 facilities engaged in recycling and reprocessing¹, employing approximately 12,000 workers, equivalent to about 10% of total industrial employment. The sector's annual production value exceeds 650 million Jordanian Dinars (JOD)² (equivalent to €787 million), where the production is heavily reliant on the import of raw plastic granules and virgin polymers³ with an estimation of 230,000 and 250,000 tons respectively, accounting for over 60% of total industrial feedstock⁴ of the national plastic consumption (400,000–450,000 tons annually), spanning packaging materials, industrial goods, and household products.

The current scale of plastic recycling in Jordan remains significantly limited (7%)⁵, reflecting a low capture rate across all polymer types. For instance, Polyethylene Terephthalate (PET) is a high-volume waste stream, yet the quantities collected and recycled locally from post-consumer PET waste do not exceed approximately 3,200 tons annually. This constitutes a fraction of the over 45,000 tons of PET waste estimated to be dumped in landfills each year. As for other types of plastic materials (e.g., PP, HDPE, LDPE), the recycled quantities estimated between 70,000 – 80,000 tons annually which is processed locally⁶.

Looking into waste collection systems in Jordan, municipalities are responsible for the mixed-waste collection, with no formal source segregation for recyclables, which resulted in a fragmented recycling landscape dominated by private companies and informal collectors, who operate outside municipal contracts still perform most of the recovery and sorting activities. Focusing into Plastic waste, recyclable materials enter the recycling chain through multiple channels:

- Post-consumer plastics extracted by informal pickers, brokers, and landfill contractors from street containers, transfer stations, and landfill.
- Source-sorted plastics from commercial and institutional entities such as supermarkets, hotels, and malls, collected by private recycling firms.
- Pre-consumer industrial scrap, handled through formal contracts and sold to processors and reprocesses.

¹ Market System Analysis, USAID, 2023

² Plastic sector study, JCI, 2022

³ Types of materials: Polypropylene (PP), High Density Polyethylene (HDPE), Light Density Polyethylene (LDPE), Polyvinyl Chloride (PVC), Polystyrene (PS), and Polyethylene Terephthalate (PET)

⁴ Department of Statistics report, 2022.

⁵ National Municipal Solid Waste Management Strategy, MoLA

⁶ Market analysis study for recycling clear PET plastic in Jordan, UNDP, 2025

- Pilot scale separate collection through municipalities supported by internationally funded initiatives, collection activities take place in commercial areas, clusters within municipalities, malls, governmental buildings, schools, and specific neighborhoods. Separate waste bins or metal cages are provided to facilitate this process.

These materials circulated within an extensive network of recycling actors, including approximately 10–20 pelletizing plants, 40–80 crushing and washing facilities, and hundreds of aggregators, brokers, and manufacturers. Together, these entities process between 6,000 and 7,000 tons of plastics per month, converting them into flakes, pellets, and non-food-grade products such as garbage bags, irrigation pipes, crates, and plastic furniture.

1.2 PLASTIC AND SUP INITIATIVES

The amount of plastic waste not recovered and leaked to the final disposal sites along with the widespread use of disposable plastics (estimated 3 billion plastic bags are consumed each year, roughly 500 bags per person) has led to serious environmental problems. Littered plastics clog drainage systems and exacerbate urban flash flooding during heavy rains⁷, while improper disposal and burning of plastics contribute to pollution and occasionally to fires. These issues underscore the need for improved waste management with a parallel transition toward sustainable consumption and production practices.

In response to the plastic waste and SUP challenge, Jordan has undertaken multiple initiatives in collaboration with national agencies and international partners. The MoEnv and supporting organizations have launched policies, action plans, and on-the-ground projects to promote a circular economy and reduce SUP pollution⁸. Efforts range from developing strategic roadmaps and regulations at the national level to implementing pilot projects and community campaigns. Below is an overview of key initiatives addressing plastic waste and SUPS in Jordan.

1. EU/WES SM project: National Single-Use Plastics Roadmap

Jordan has formulated a National Roadmap⁹ to Address SUPs in 2023 with the support of the EU/WES SM project, providing a strategic framework to reduce SUP consumption and mitigate plastic pollution. The roadmap identifies four priority product groups (plastic bags, single-use beverage bottles and their caps/lids, food containers (e.g., takeaway packaging), and single-use cutlery and plates), and outlines targeted short- to medium-term actions over the next three to five years, which include public awareness campaigns to shift consumer behavior, voluntary business commitments to reduce or replace SUPs, and infrastructure improvements in waste collection and recycling. Additionally, the roadmap explores policy and financial instruments, such as promoting reusable alternatives, introducing Extended Producer Responsibility (EPR) schemes, and potentially applying regulatory controls or economic incentives to phase out the most problematic SUP items.

Prevention and reduction are emphasized as top priorities, in line with the waste hierarchy, with a goal of gradually phasing out targeted items while enabling the development of sustainable alternatives.

⁷ Green Growth National Action Plan 2021-2025

⁸ Roadmap to address SUP items in Jordan, WES, 2023

⁹ https://www.wes-med.eu/activities_type/n-e-jo-1-contribution-to-the-development-of-a-joint-public-private-roadmap-to-reduce-the-use-of-single-use-plastics-in-jordan/

The roadmap is being advanced collaboratively through consultations with public and private stakeholders to ensure practical implementation and to provide transition support to impacted sectors, such as plastics manufacturers.

Crucially, the SUP roadmap aligns directly with Jordan's Green Growth National Action Plan (GG-NAP) 2021–2025, which aims to drive sustainable economic growth across key sectors, including waste. The GG-NAP promotes circular economy principles, resource efficiency, and innovation, with Action WS14 specifically targeting improved waste recovery and valorization. By supporting policy, infrastructure, and behavioral change, the SUP roadmap advances these priorities and reinforces Jordan's broader goals for climate resilience, sustainable development, and green job creation.

2. UNDP Initiative: Deir Alla Recycling Project

One notable implementation effort is the UNDP-supported plastic recycling project in Deir Alla, in the Jordan Valley. In July 2025, the United Nations Development Programme (UNDP) (with funding from the European Union (EU)), officially launched and commenced operations at a new plastic recycling plant in Deir Alla to strengthen local SWM systems and promote a circular economy. This state-of-the-art facility, built at a cost of about USD 1 million, is fully operational and strategically located on a 5,000 m² site to serve seven municipalities across the Jordan Valley region. The plant is designed to tackle the growing issue of parallel increase of agricultural and municipal plastic waste in these communities by sorting, cleaning, and processing plastic into reusable raw materials, thereby diverting waste from landfills. Beyond its environmental benefits, the Deir Alla recycling hub is creating economic opportunities, it is expected to create over 50 green jobs and stimulates private-sector engagement in waste recycling.

This initiative is highlighted as a model of how improving waste infrastructure at the local level can contribute to Jordan's broader green growth and Economic Modernization Vision goals. By establishing a local market for recycled plastics and encouraging communities to participate in waste sorting, the Deir Alla project demonstrates a practical step toward integrated and sustainable plastic waste management in Jordan. UNDP and national authorities intend for this recycling plant to be a catalyst for scaling up recycling efforts and possibly for future PPPs in the waste sector¹⁰.

3. UNDP Initiative: “Plastic Reboot” Programme

At a national policy level, Jordan has also joined the Global Environment Facility (GEF)-funded Plastic Reboot Programme, which aims to tackle plastic pollution through upstream solutions. In October 2025, UNDP Jordan and the MoEnv launched the “Circular Solutions to Plastic Pollution” project under this program, focusing on the Food & Beverage (F&B) sector. Unlike traditional waste management approaches, the Plastic Reboot initiative emphasizes reducing plastic waste at the source. It seeks to eliminate about 5,000 tons of SUPs from Jordan's F&B sector by 2030, which is projected to avoid roughly 17,000 tons of CO₂-equivalent emissions. To achieve this, the project is advancing a package of interventions. Firstly, it will support policy and institutional reforms for example, developing regulations to ban or restrict certain SUP items in the F&B sector, setting standards to increase recycled content in packaging, and clarifying definitions (such as what qualifies as “biodegradable” plastics).

¹⁰ UNDP, press release 2025, <https://www.undp.org/arab-states/press-releases/undp-eu-launch-new-agricultural-plastic-recycling-plant-deir-alla-advance-circular-economy>

Secondly, it engages the private sector by demonstrating and piloting alternative business models: hotels, restaurants, supermarkets and other businesses are encouraged to adopt reusable or refillable packaging systems and other alternatives to SUP packaging.

Thirdly, the programme will help mobilize financing for sustainable plastic solutions for instance, by facilitating funds or incentives for SMEs to develop green packaging enterprises and innovative refill/reuse services.

Finally, Plastic Reboot includes a strong awareness and capacity-building component, aiming to educate consumers and build public support for sustainable consumption while sharing knowledge and best practices across sectors. The project will concentrate efforts in major urban centers (such as Amman, Zarqa, Russeifa) and key economic areas like Aqaba¹¹. By reforming markets and behavior in the F&B sector, the Plastic Reboot initiative complements Jordan's regulatory roadmap on SUPs, working to shift the economy away from SUPs and scale up circular economy solutions in production and consumption¹².

4. "Green Wheels" Community Recycling Campaign

Green Wheels is a prominent community-based campaign in Jordan that addresses plastic waste through public engagement and charity. Launched in 2014 by a Jordanian youth group, the Green Wheels initiative encourages people to collect and donate recyclable plastic materials most famously, plastic bottle caps which are then sold to recycling companies. The proceeds from recycling are used to fund humanitarian causes, effectively turning plastic waste into charity.

Over the years, Green Wheels has grown from a small volunteer effort into a nationwide movement under the umbrella of the Zaha Cultural Center (a municipal youth and culture organization). Its impact goes beyond raising environmental awareness; the campaign has translated recycling into tangible social benefits. For example, Green Wheels has used funds from collected plastic to support children with cerebral palsy and provide wheelchairs and medical aid to individuals with disabilities. Most recently, the initiative contributed to the construction of Jordan's first school and rehabilitation center for children with cerebral palsy, a major project financed entirely through plastic cap donations and recycling revenue.

The slogan often associated with the campaign, "Recycle It and Help Others," reflects this dual environmental and social mission. Green Wheels has also built extensive partnerships to widen its reach. It collaborates with schools, universities, companies, and even hotels to set up collection points and run drives for plastic caps and bottles.

As of 2025, the campaign's coordinators report that Green Wheels operates collection activities in 70% of hotels in Jordan, over 100 schools, and numerous public institutions, with support from some embassies and private-sector sponsors. Innovative tools such as smart collection machines and dedicated recycling bins have been introduced to motivate participation and make recycling convenient¹³.

¹¹ Plastic Reboot, <https://plastic-reboot.org/en/projects>

¹² UNDP release press, <https://www.undp.org/jordan/press-releases>

¹³ "Green Wheels" is a Jordanian Initiative Turning Plastic Waste into Charity, <https://www.sadanews.ps/en/news>

1.3 REGULATORY FRAMEWORK

This section dives into the local regulation governing Waste Management (WM) in Jordan, as the sector is actively moving to be modernized. This transition is emphasized by significant policy actions centered around the Waste Management Framework Law and the Green Growth National Action Plan (GG-NAP) 2021-2025.

The review focused on two main segments; the **applicable regulations** and the **new/under revision regulation**, in which a holistic overview of the WM regulation would be clear.

1.3.1 REVIEW OF APPLICABLE JORDANIAN REGULATION

TABLE 2: LIST OF APPLICABLE REGULATION

Strategy / Legislative	Description
Waste Management Framework Law No. 16 of 2020	The Waste Management Framework establishes a comprehensive legal and regulatory authority for managing both Municipal Solid Waste and hazardous waste streams in Jordan. The law introduced the following key principles: 1. Waste Hierarchy: It mandates adherence to the waste hierarchy, prioritizing Prevention, Re-use, and Recycling over other forms of recovery and, finally, disposal. 2. Extended Producer Responsibility (EPR): This principle makes producers financially and/or operationally responsible for managing their products' waste (especially packaging) after consumer use. 3. Polluter-Pays Principle: It ensures that those who generate waste, or cause pollution, bear the costs of its management and remediation. 4. Prevention Principle: Requires adopting measures to avoid or limit waste production and reduce its harmfulness to the lowest possible level.
The National MSW Management Strategy 2024 (NMSWMS)	The updated national Municipal Solid Waste (MSW) Management strategy in Jordan represents a fundamental shift from a disposal-centric model to an integrated, resource-efficient system based on four key principles: circular economy, private sector engagement, climate change, and governance. The updated NMSWMS aligned with Green Growth National Action Plan 2021-2025 as the waste management sector is positioned as a key pillar, linking waste diversion and material recovery to national goals for climate change mitigation (reducing methane emissions) and job creation.
Economic Modernization Vision 2023 – 2033	Jordan's Economic Modernization Vision focuses on accelerating economic growth and improving citizens' quality of life, all while prioritizing sustainability. Solid waste management is a recognized key pillar within the vision, specifically targeting the enhancement of waste management, resources recovery and circularity. The vision will be

Strategy / Legislative	Description		
	executed through eight economic growth drivers which cover 35 main sectors and sub-sectors, encompassing more than 360 initiatives.		
	Sustainability is treated as a fundamental element of Jordan's economic future, emphasizing the promotion of resource efficiency, circularity, climate responsiveness, nature protection, human well-being, and social inclusion.		
	Through the EMV, several initiatives were launched Improving waste management, recycling and reuse through the first phase of the implementation (2023 – 2025) ¹⁴ .		
	Project Name	Responsibility	Achieved percentage
	Waste recycling project from the commercial sector	GAM	61%
	Separation at source from commercial sector	GAM	46%
	Implementing Mechanical-Biological waste treatment (MBT) project	GAM	50%
	Developing waste recycling sector	Ministry of Environment	87%
	Implementing EPR system for the packaging waste sector	Ministry of Environment	100%
Waste Sector Green Growth National Action Plan 2021-2025	It is Jordan’s framework for transitioning the waste management sector toward a more sustainable, circular, and economically productive model. The GG-NAP centered on four main objectives designed to leverage waste as an economic resource, reduce environmental impact, and enhance governance: 1. Increase Diversion from Landfills and Promote Circularity This objective focuses on shifting waste management practices away from disposal and toward resource recovery, directly impacting packaging materials: Reduce, Reuse, and Recycle (3Rs): The plan emphasizes increasing the volume and percentage of Municipal Solid Waste (MSW) diverted from landfills by prioritizing the "reduce, recycle, and reuse" approach. Creating Sustainable Business Models: Actions are aimed at building a "virtuous cycle" where sustainable business models offset waste management costs for urban areas, moving toward a self-sustaining system.		

¹⁴ <https://pmda.gov.jo/> as of December 2025

Strategy / Legislative	Description
	Targeting Plastics: A specific action involves developing a joint public-private roadmap to reduce the use of single-use plastics at household and commercial levels. Infrastructure for Recovery: The plan includes objectives to develop MSW infrastructure to promote recycling and enhance the use of sanitary landfills. 2. Enhance Institutional and Human Capacity This area focuses on governance, knowledge, and labor force development: • Improved Governance: Actions include establishing a National Center for Excellence on Waste Management and Circular Economy to promote innovation, training, Research & Development (R&D), investment, and policy work. • Information Management: The plan seeks to improve information management and sharing mechanisms across the sector to provide better data for decision-making. • Green Jobs: A key initiative is the development of a baseline study and roadmap to transition toward green jobs in the waste sector, linking environmental goals with employment creation and formalizing the labor market (including informal waste workers). 3. Stimulate Behavioral Change and Accountability toward Resource Efficiency: This addresses the generation and handling of waste by consumers and businesses: • Source Separation: Actions are included to stimulate and promote behavioral change among Jordanians regarding responsible waste generation and handling (waste reduction, source sorting, and prohibiting littering). • Promoting Culture: The plan aims to promote the culture of waste separation at the source, facilitating recycling and composting. • Industrial Stewardship: It focuses on improving private sector and industrial waste management stewardship through awareness and identifying opportunities for better practices. 4. Climate Mitigation and Environmental Health: The plan ties waste management directly to national environmental and climate goals: • GHG Reduction: By reducing landfilling and increasing organic waste management (composting/recovery), the plan contributes to reducing greenhouse gas emissions, particularly methane, which is a significant contributor to the sector's climate impact.

Strategy / Legislative	Description
	• Remediation: It addresses the need to improve air and water quality, and soil health, especially around key landfill sites like Swaqaa, through improved waste handling and remediation efforts. The plan addresses plastic waste under a dedicated action, recognizing it as a major environmental challenge that contributes to environmental degradation and clogs urban drainage systems, aggravating flash flooding: 1. Action No. WS12: Develop a joint public-private roadmap to transition to reduce the use of single use plastics at household and commercial levels with an estimated budget of 3M JOD. 2. Action No. WS14: Establish a national upcycling hub nearby appropriate waste management infrastructure as part of the broader strategy to reduce single-use plastics and promote circular economy principles in Jordan. With a budget of 16.5M JOD, the upcycling hub will serve multiple functions including material innovation, business incubation, training programs, and support services for entrepreneurs and innovators working on sustainable alternatives to single-use plastics. It will focus on creating sustainable business models that can offset waste management costs while generating economic value from waste materials.
Non-hazardous solid waste management Regulation No. 44/2022	The regulation stipulates that all non-hazardous solid waste producers, with the single exception of the domestic (household) sector, must comply with a set of operational requirements. This compliance involves actively taking the necessary measures to enforce the fundamental solid waste management principles detailed in the framework law. Furthermore, these entities are required to appoint qualified personnel specifically trained to handle these waste streams, and must provide the essential equipment, containers, and internal systems needed for the proper on-site collection, subsequent transport, and preliminary sorting of the materials.
The Regulation for Nuisance Prevention & Waste Collection Fees within Municipal Borders No.68/2016 and its Amendment No. 59/2019	The Regulation prohibits any person, entity, or activity from causing any nuisance to anybody or from damaging public health. Such nuisances may include odors, noise, waste (solid waste, effluents), or any other practice deemed harmful to public health or sanity. Furthermore, the regulation places significant operational restrictions on waste handling within municipal boundaries, while also granting municipalities flexibility in how they manage their services and offering financial incentives for responsible waste generators.
Instructions for applying the national mechanism to the principle of extended product responsibility to address the negative effects	An EPR system for packaging was introduced under the Waste Management Framework Law, where companies that bring packaging materials to the market will be obliged to pay a fee, where the collected fees are intended to finance the establishment and expansion of separate

Strategy / Legislative	Description
resulting from waste packaging materials (2022)	waste collection, sorting, and recycling infrastructure, thereby promoting a sustainable recovery system and increasing the national recycling rate. The operational aspects of the system are overseen by a Producer Responsibility Organization (PRO). Amman Vision for Treatment & Recycling (AVTR) assigned as the PRO, and its implementation instruments (like the PRO's plans and reports) require approval from the Ministry of Environment (MoENV). ¹⁵
manufacture, import and trade of biodegradable plastic bags Regulation No. 45 of 2017.	Establishes mandatory standards for biodegradable plastic shopping bags, including composition requirements, degradation timelines, and compliance monitoring protocols. Material composition standards Biodegradability certification requirements Import and distribution controls Penalty framework for violations

1.3.2 NEW REGULATION IN THE PIPELINE OF MINISTRY OF ENVIRONMENT

Drawn from the GG-NAP, MoENV is developing new strategies and updating related instructions in relation to plastic waste management with the collaboration of UNDP. The UNDP program is developing a new executive program for the strategy of Cleanliness and Littering Reduction for the year 2026 – 2027, where SUP reduction and littering will be addressed based on four main pillars, addressing the phenomenon of indiscriminate littering through an integrated system of regulatory, technical, supervisory, and awareness-raising measures. Also, the ministry is updating the “Environmental and Technical Requirements for Sorting at Source of Recyclable Materials from Non-Hazardous Solid Waste”, the instruction was issued under the Non-Hazardous Solid Waste Management System No. (44) for the year 2022 and take effect six months after their publication in the Official Gazette

The instructions do not explicitly refer to Plastic or Plastic Waste, rather than define the requirements for Recyclable Materials. The update focused on Commercial and industrial waste generators, excluding households, as the instruction specifies to sort in two categories: Recyclable Materials and Other Waste.

The implementation planned to extend over three years from the effective date, as follows:

1. Phase I: Applies to producers generating 600 tons or more of solid waste annually.
2. Phase II (One Year Later): Applies to producers generating 300 tons or more annually.
3. Phase III (Three Years Later): Applies to smaller "Craft Establishments".

¹⁵ https://www.petra.gov.jo/Include/InnerPage.jsp?ID=79316&lang=en&name=en_news

MoENV planned within the instruction to design and implement incentive programs, issue certificates, and grant awards to encourage high recycling rates, as well as provide a discount on waste fees for producers who comply with the sorting requirements with the collaboration of municipal authorities. Furthermore, the landscape of the packaging materials separation and collection is expected to be changed as the Extended Producer Responsibility (EPR) system is near to being implemented through Producer Responsibility Operator (PRO). The existing market of recycling will be modernized and developed at the same time increasing the amount of source separated “clean” materials.

2 PRELIMINARY SCOPING ANALYSIS

2.1 DESK REVIEW

2.1.1 TARGETED PLASTIC MATERIALS OVERVIEW

Different types of plastics identified within the plastic sector in Jordan, where these types were assessed for their recycling availability, recovery rate, generation sources, and quantities.

1. Polyethylene Terephthalate (PET):

PET value chain in Jordan is a high-priority environmental concern, primarily due to its prevalence in single-use beverage bottles, food containers, and general packaging, a factor that makes it a key target for Single-Use Plastic (SUP) policies¹⁶. The total volume of PET waste generated annually in Jordan exceeds 45,000 tons, however the post-consumer recovery rate remains low, estimated at well below 10% for PET, with only about 600 tons/year recovered from mixed waste. In contrast, pre-consumer PET from industrial sources (such as rejected bottles and off-cuts) is recycled at a rate greater than 90%, yielding around 3,000 tons/year and demonstrating an effective closed-loop system for high-quality industrial scrap¹⁷.

Collection of post-consumer PET relies heavily on the informal sector, involving an estimated 1,500–2,000 street waste pickers and 1,000–1,500 itinerant buyers who collectively supply several thousand tons per month to aggregation systems¹⁸. However, this PET material largely forms a separate, export-oriented value chain due to the limited domestic high-value processing capacity for bottle-to-bottle recycling, which is further underutilized due to regulatory restrictions concerning food-grade recycled PET (rPET). This reliance on exports, coupled with high exposure to international commodity prices, leads to significant income volatility for the informal actors who dominate the primary collection effort, posing risks to their livelihoods as the sector undergoes formalization efforts.

2. Polypropylene (PP):

PP value chain exhibits a distinct operational profile compared to PET, characterized by its stronger integration within the domestic recycling channel and its wide use across food containers, caps, household goods, automotive components, and industrial packaging. PP constitutes a significant share of the plastics recovered locally per year with 21,000 – 25,000 tons recovered annually. Its recycling success is driven by high recovery rates for clean industrial scrap and a stable domestic demand for recycled PP pellets, which are remanufactured into various end-products such as pipes, crates, furniture, and moulded goods.

The high local circularity is supported by an established national recycling infrastructure that includes an estimated 10–20 PP pelletisers and 40–80 processors (crushers/washers), with the total processing capacity estimated at 6,000–7,000 tons per month. The informal sector

¹⁶ Roadmap to address SUP items in Jordan, WES, 2023

¹⁷ Market analysis study for recycling clear PET plastic in Jordan, UNDP, 2025

¹⁸ Assessment for the engagement of the informal sector in the solid waste management sector in Jordan, Oxfam, 2021.

participates in the PP stream primarily at the initial collection and sorting stages; however, its role is less dominant than in the PET value chain, as domestic processors often source directly from industrial pre-consumer streams, resulting in comparatively lower reliance on informal post-consumer collection.

3. Polyethylene (PE: HDPE & LDPE):

PE stream, which encompasses both High-Density Polyethylene (HDPE) and Low-Density Polyethylene (LDPE), represents the largest plastic stream by volume in Jordan. LDPE, primarily used in flexible films and bags, is a major component of disposed plastic waste and is therefore central to single-use plastic reduction efforts, while HDPE is utilized in more durable applications such as bottles, crates, and pipes. PE collectively accounts for 70% of the plastics recovered in the country with an estimated quantity of 50,000 tons/year¹⁹, with household, commercial, and industrial sources contributing film, bags, wraps, and off-cuts. Recycling performance is bifurcated: HDPE recycling rates are relatively high, benefiting from cleaner industrial streams (although contamination rate estimated at 15% - 35%²⁰, but LDPE recycling is severely constrained by high contamination (due to its use for household garbage bags and food wrapping, globally contamination rate is estimated to be 30% - 50%²¹) and collection inefficiencies. The recycled PE material is ultimately used in low-grade products like pipes and plastic lumber. Collection of the lower-value LDPE is highly dependent on informal pickers operating in streets and landfills, where they handle significant volumes despite facing low unit prices and high occupational risks. While the overall PE recycling infrastructure is considered relatively well established, the processing of flexible plastics is limited by a lack of dedicated washing and densification facilities, which restricts material quality and depresses market value.

4. Polyvinyl Chloride (PVC):

PVC stream in Jordan is primarily defined by its use in construction products, such as pipes and profiles, and is generally not considered a priority recycling stream due to the presence of chemical additives and associated environmental concerns. PVC waste quantities are relatively low and originate predominantly from construction and demolition (C&D) waste. Consequently, recycling rates are very low (around 4,500 – 6,000 ton/year), with only a limited number of specialized processors engaging in its recovery. PVC is often excluded from general mixed plastic sorting streams, and the informal sector's engagement is marginal because the material offers low market value and involves higher handling risks, making its collection commercially unattractive to waste pickers.

5. Polystyrene (PS):

PS is primarily used for single-use food service items (cups, plates, trays) and Expanded Polystyrene (EPS) protective packaging, making it highly policy-relevant and environmentally problematic as a key Single-Use Plastic (SUP). While no systematic national quantification exists, PS represents a small fraction of plastic waste by weight but a disproportionately high fraction by volume, with primary waste streams originating from households and the HORECA

¹⁹ Recycling Value Chains Analysis, USAID, 2023

²⁰ Washing Post-Consumer Flexible Polyethylene Packaging Waste, Noyan, Venkatesh and Boldizar, 2022

²¹ <https://recyclops.com/understanding-recycling-contamination/>

sector. The recycling rates for PS are very low with an estimation of 2,400 ton/year²², due to severe structural constraints, including its low material density (especially EPS) which makes transport uneconomical, high contamination risk from food residues, and a lack of domestic end-markets and specialized infrastructure (such as densifiers or compactors).

Consequently, PS is largely excluded from plastic sorting operations, typically ending up in landfills, and the informal sector avoids its collection because of the material's low unit value and unfavourable volume-to-weight ratio. In summary, lacking integration into both the domestic and export recycling channels, PS is effectively treated as a non-recyclable material under current market conditions.

6. SUP alternatives:

The Single-Use Plastics (SUP) category is a cross-cutting and policy-relevant priority in Jordan, consisting of items like bags, bottles, food containers, and cutlery, which are composed of materials such as PET, PE, and PP. These items are the focus of policy interventions, including those aligned with the EU SUP Directive, due to their high visibility and short lifespan. SUPs are predominantly generated by households, HORECA (Hotel, Restaurant, and Café), and retail sectors, which are identified as the key leverage points for waste management intervention. Despite the high generation volume, the recycling performance for SUPs remains weak due to pervasive issues like contamination, a lack of source segregation, and heavy dependence on informal collection, where actors only manage to capture value at the lowest tiers of the supply chain. The immense constraints on the SUP recycling system are rooted in significant infrastructure gaps, including the absence of enforced Extended Producer Responsibility (EPR) schemes, inadequate sorting at the source, and limited downstream markets for the resulting low-grade recycled materials.

By developing SUP Roadmap, Jordan's SUP reduction efforts focused on three main categories of alternatives, with reusable products consistently identified as the highest-impact, prevention-oriented option, particularly in commercial and urban settings.

- **Reusable bags (cloth, woven PP, durable plastic)** are viable substitutes for LDPE shopping bags, with policy interventions like taxes shown to rapidly shift consumer behaviour, though effectiveness relies heavily on ensuring multiple reuse cycles to justify their higher upfront cost. Similarly, reusable food containers and cups are feasible in closed-loop environments like universities, corporate offices, and venues with centralized waste management (e.g., hotels and malls), though their adoption is constrained by the need for established washing infrastructure and clear food safety standards.
- **Paper and Fiber-based alternatives**—such as paper bags and melded fiber products (bagasse)—are currently the most widespread substitutes, benefiting from Jordan's strong paper/cardboard recycling sector. However, a critical limitation is that many paper products are plastic-lined or coated, rendering them non-recyclable and raising concerns about adopting "false alternatives" that merely shift environmental impacts.
- Finally, **biodegradable and compostable plastics (bioplastics)**, despite increasing market visibility, are treated with high caution and are not a priority SUP alternative under current Jordanian conditions, as the country lacks the industrial composting infrastructure

²² Recycling Value Chains Analysis, USAID, 2023

required to process them, leading to a high risk of contamination in conventional plastic recycling streams. Alternative non-plastic materials, such as wooden cutlery, metal, and glass, are also viable but face limitations due to higher costs and import dependence.

In summary, **TABLE 3** demonstrate the mass-balance of the mentioned plastic types.

TABLE 3: PLASTIC MASS-BALANCE²³

	Plastic type	Waste generated (tons/year)	Recovered (tons/year)	Processed & recycled (tons/year)
1.	PET ²⁴	45,000	3,600	2,100
2.	PP	270,000 (315,000 tons including all types of plastic waste ²⁵)	34,800 – 43,200	21,600 – 25,200
3.	HDPE		47,280 – 57,600	28,800 – 33,600
4.	LDPE		23,640 – 28,800	14,400 – 16,800
5.	PVC		8,100 – 10,020	4,500 – 6,000
6.	PS		2,160 - 2,400	2,160 - 2,400

Upcycling in the context of plastic waste is the process of transforming discarded materials into new products of higher value, increased functionality, or better aesthetic quality than the original. Considering the definition, the main upcycling approaches are categorized into the following:

- Mechanical upcycling (including high-end furniture, designer textiles, architectural panels, and food-grade circular packaging.);
- Chemical upcycling (including catalytic depolymerization and solvolysis);
- Thermal upcycling (including pyrolysis, gasification, and hydrothermal);
- Biological upcycling (including enzymatic degradation and microbial conversion);
- Flash joule heating (graphene production)²⁶.

Through the definition of upcycling mentioned above, higher quality discarded plastic must be targeted for upcycling as contamination (food, oils, adhesives) weaken polymer bonds, which can be sourced from post-consumer (bottles, packaging) and Post-industrial (manufacturing scraps) through strict sorting activities (by type e.g., PET, HDPE, PP and by color) to maintain material integrity.

Therefore, to identify the plastic type and quantity to be targeted within the activities of the upcycling hub, the material lifecycle is mapped from its entry into the economy through to its final treatment or disposal as shown in **Figure 2**. The plastic materials flow identifies the critical intervention points where plastic can be diverted for upcycling rather than being lost to landfills.

²³ Recycling Value Chains Analysis, USAID, 2023

²⁴ Market analysis study for recycling clear PET plastic in Jordan, UNDP, 2025

²⁵ Market System Analysis, USAID, 2021

²⁶ Plastic Upcycling into Advanced Materials, 2025, <https://doi.org/10.1002/admt.202501385>

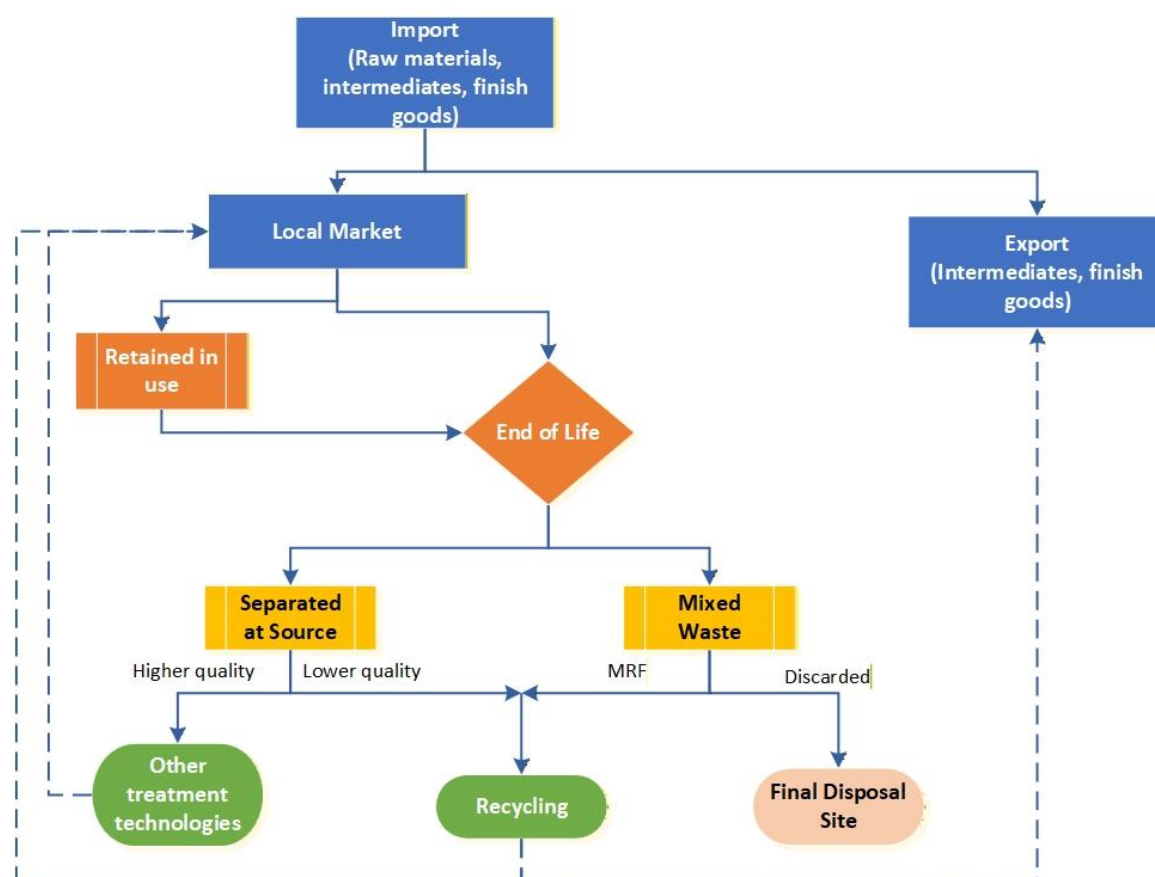


Figure 2: PLASTIC WASTE FLOW

To determine the required capacity of the upcycling hub, waste projections were modeled using the plastic mass balance (TABLE 3) and waste flow analysis (Figure 2). These projections estimate plastic waste volumes from the 2023 baseline through 2034, aligning with Jordan's long-term national targets and the following key assumptions:

TABLE 4: LIST OF ASSUMPTIONS

Assumption	Value
Recovery rate of waste of 2024 ²⁷	25%
Recovery rate of waste of 2034	65%
Recycling rate of waste of 2024	15%
Recycling rate of waste of 2034	50%
Annual waste generation growth rate	4%
Global upcycling rate ²⁸	2%
Average High-quality fraction of plastic ²⁹	30%

²⁷ Recovery rate and Recycling rate of 2024 and 2034 are obtained from National Solid Waste Management Strategy, 2015

²⁸ The New Plastics Economy: Rethinking the future of plastics, Ellen MacArthur Foundation.

²⁹ Green Pavement, DOI: 10.20944/preprints202308.0251.v1

The lifecycle (**Table 5**) begins with the total End of Life volume, which represents the total plastic entering the waste stream annually. This figure is projected to rise steadily as the population and economy grow, reaching nearly half a million units by 2034. Within this flow, the Recovered volume accounts for all plastic successfully diverted from landfills, encompassing both traditional recycling and advanced treatment methods.

The most critical metric for the Upcycling Hub's design is the Expected upcycling input (kg/day), which dictates the operational capacity of the proposed upcycling hub. This specific input is a subset of the other treatment category, representing the highest-quality, source-separated plastic fraction designated for high-value recovery rather than standard downcycling. The projection showed that the Upcycling Hub would be in operation in 2027 with an initial capacity of 672 kg/day. This starting point reflects a phased implementation strategy, allowing the hub to establish its sorting and processing protocols before scaling up.

As the projection moves toward the 2034 national target, the hub's daily capacity requirements increase significantly. From its 2027 inception, the daily input is expected to grow by nearly 285%, reaching 2,591 kg/day by the end of the period. This growth in upcycling capacity is a vital component of the broader waste diversion strategy, as it works in lineup with Recycling activities to reduce the burden on Landfills.

TABLE 5: PLASTIC LIFECYCLE PROJECTION FROM 2023 TO 2034.

	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
End of Life	315,000	327,600	340,704	354,332	368,505	383,246	398,575	414,519	431,099	448,343	466,277	484,928
Recovered	132,600	81,900	98,804	116,930	136,347	157,131	175,373	203,114	228,483	255,556	284,429	315,203
Recycling activities	75,000	18,837	24,701	31,571	40,904	51,853	63,134	79,214	95,963	115,000	136,526	157,602
Other treatment	-	-	-	-	818	1,037	1,263	1,584	1,919	2,300	2,731	3,152
Disposal (San. Landfills)	240,000	308,763	316,003	322,761	326,783	330,355	334,178	333,720	333,217	331,043	327,021	324,174
Expected upcycling input (kg/day)	-	-	-	-	672.40	852.38	1,037.83	1,302.16	1,577.47	1,890.41	2,244.26	2,590.71

2.1.2 ADDITIONAL MATERIAL STREAMS OVERVIEW

In addition to plastics, the Upcycling Hub may selectively integrate a limited number of complementary waste/material streams in order to enhance operational viability and financial sustainability. These additional streams are not assumed to be equivalent to plastics in scale, processing requirements, or market structure, nor are they intended to dilute the Hub's core focus on plastic waste. Rather, they are considered as supporting or enabling streams that could contribute to revenue diversification, risk mitigation, skills development, or awareness-raising functions, depending on their characteristics.

Given that non-plastic materials (e.g., textiles, tires, paper/cardboard, or furniture and wood) differ substantially from plastics in terms of collection systems, processing technologies, regulatory requirements, market maturity, and value density, their potential inclusion will be subject to a separate and explicit assessment during the pre-feasibility phase. This assessment will examine, on a stream-by-stream basis, the technical prerequisites, minimum viable scale, infrastructure needs, regulatory constraints, and institutional arrangements required for their integration, alongside economic viability, market demand, and environmental impact.

Only those material streams that demonstrate clear complementarities with plastic-focused operations, do not introduce disproportionate complexity or capital requirements, and contribute meaningfully to the Hub's long-term sustainability objectives will be considered for inclusion in the final hub configuration.

TABLE 6 presents (indicatively) the source of origin, the method of management and the final recipient for the most important categories of potential additional materials.

TABLE 6: LIST OF POTENTIAL ADDITIONAL MATERIALS

Category	Description of input materials	Materials source	Process	End-user
Textile	Clothes in good condition, shoes in good condition, bags, belts, hats, gloves, bags, accessories, sheets, blankets, towels, curtains, carpets	Households, textile industries, clothing stores	Sorting, disinfection, repair, redesign, cutting, and sawing etc.	Citizens, Social institution, furniture workshops (upholstery)
Tires	Used tires, Damaged tires	Tires repair shops, port and logistic companies	Sorting, disinfection, repair, shredding, cutting, molding, and painting	Citizens, construction companies, landscape companies
Scrap materials from C&D	Doors, Windows, toilet seat, sink, bathtub, sockets	Households and hotels renovation projects	Sorting, disinfection, repair, cutting, and shaping	Households, interior designers, event planners, offices, and

Category	Description of input materials	Materials source	Process	End-user
				landscape companies
Paper & cardboard	Books, notebooks, magazines, paper, storage boxes	Households, offices, logistics companies, commercial establishments, and educational institutions	Sorting, disinfection, refurbish, repair, cutting, shaping, decoration, crafting, recycling, and compression	Educational institutes, households, event planners
Furniture & wood	Bulky furniture, sofas, tables, chairs, armchairs, etc.	Households, hotels, businesses	Sorting, disinfection, repair, cutting, shaping, repair	Households, cafes, restaurants, hotels, educational institutions, landscape companies, and offices

2.1.2.1 Textiles:

Textile waste in Jordan is generated mainly from the industrial (pre-consumer) sector, particularly garment manufacturing. It is estimated that 2,000–3,000 tons/year of pre-consumer textile waste recovered, primarily as fabric off-cuts and rejects³⁰. Post-consumer textile waste from households is not systematically recovered and remains largely unquantified.

Almost all the textile waste ended up in final disposal sites. Currently, few recycling and upcycling initiatives exist in different areas across Jordan i.e., Aqaba, Ajloun, Qouaireh, as women-led initiatives that upcycle small amounts of fabric, textile, and wool into crafts, bags, and filters. In addition, a couple of recycling companies (still under establishment) aim to recycle textile waste from Ready-Made-Garment (RMG) into new intermediate materials for garment production. It is worth mentioning, Government of Jordan in 24/06/2025 issued a memo (Memo. No. 25/11/1/14205) prohibiting textile waste from being disposed of in the final disposal sites by the beginning of 2026, urging the need to utilize the generated waste in more sustainable way.

Textiles consist of unwanted used clothes, fabric scraps, blankets, etc. each type of textiles can be utilized in producing different products at the Upcycling Hub. Various categories of products can be produced in the Upcycling Hub that aligns with the core function of the Hub.

³⁰ Recycling Value Chains Analysis, USAID, 2023

The following list of product shows preliminary products that can be produced - not limited to:

- **Fashion and Accessories:**
 - Patchwork clothing: Combining scraps of different fabrics to create unique garments.
 - Accessories: Creating bags, wallets, and jewelry from fabric scraps.
- **Home and Interior Design:**
 - Quilts and blankets made from fabric scraps.
 - Pillows and cushions with shredded textile filling.
 - Rugs and carpets woven from recycled yarn.
- **Furniture:**
 - Upholstery for furniture using recycled fabrics.
 - Furniture made from compressed textile waste i.e., footrest.
- **Art and Crafts:**
 - art installations, sculptures, and other artistic expressions

2.1.2.2 Tires:

Waste tires represent a significant and distinct non-plastic stream within Jordan's overall waste management landscape. The management of used tires is primarily channeled toward energy recovery, with approximately 40,000 tons per year absorbed by dedicated energy recovery facilities³¹. Material recovery facilities (MRFs) handle a much smaller fraction, processing around 4,000 tons per year for recycling material. Separately, an estimated 10,000 tons per year of tires are utilized by the local tire re-treading and dressing industries.

The existing tire sector presents a promising opportunity for the upcycling hub to intervene and utilize these recovered tires for upcycling initiatives. By transforming used tires into value-added products, such as rubberized surfaces, planter, or outdoor furniture (**FIGURE 3**).



FIGURE 3: EXAMPLES OF UPCYCLED PRODUCTS FROM TIRES

³¹ Recycling Value Chains Analysis, USAID, 2023

2.1.2.3 Scrap Materials from C&D:

The current situation of building scraps and recycling practices in Jordan shows that scrap materials are primarily managed through informal waste picking and scrap yards, where the scrap metals, plastics, aluminum, nylon, paper, and cardboard.

Building scraps, including old windows, doors, and iron bars, present high-potential resources for creative upcycling into valuable, unique, and stylish products. Upcycled window glass, for example, can be transformed into intricate decorative art pieces, such as stained glass, adding a distinctive touch to interior design. The durable material from aluminum window frames is ideally suited for remanufacturing into attractive outdoor furniture (e.g., garden benches, tables, and chairs) or used to construct small garden structures like storage units and greenhouses. Furthermore, the aluminum bars from these frames can be repurposed into custom-designed fences, gates, or railings, offering both modern aesthetic and functional security. Old doors provide a wide array of creative possibilities; they can be turned into rustic furniture such as tables, headboards, and bookshelves, or elegantly refinished for use as unique home décor, display cases, or storage units. Finally, iron bars, valued for their inherent strength and industrial aesthetic, are excellent for welding into robust furniture frames (tables, chairs, bed frames) or for crafting security and ornamental fences and gates. By integrating these diverse building scraps into upcycling processes, the construction sector can significantly reduce waste while creating unique, value-added, and sustainable products.

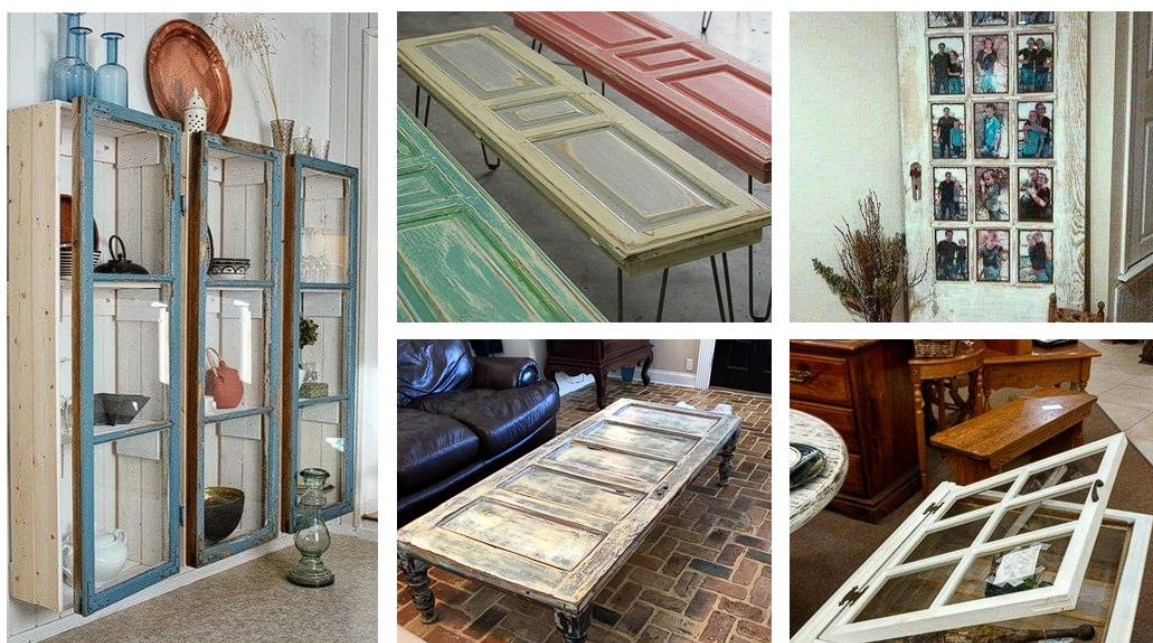


FIGURE 4: EXAMPLES OF PRODUCTS FROM SCRAP MATERIALS.

2.1.2.4 Paper/ Cardboard:

Paper and cardboard constitute one of the fastest-growing recycling streams in Jordan. Export volumes increased from 100,000 to 180,000 tons/year (75% of the recovered quantities³²) over the past two years, driven by high global prices³³, where only 20,000 – 30,000 tons recycled domestically by local recyclers to produce low quality products such as egg trays.

The utilization of used paper and cardboard products can significantly support the production of educational, artistic, and packaging materials through creative reuse and upcycling, circumventing the need for establishing an expensive and technically demanding industrial recycling plant. As setting up a large-scale paper recycling facility involves high capital costs and challenging environmental permitting (particularly near residential areas), this approach focuses on non-industrial material valorization. Specifically, materials like used books and notebooks can be manually refurbished into marketable second-hand books or usable stationery. Schools and art centers can readily benefit from using upcycled paper to create educational kits and craft materials. Furthermore, used paper offers simple, practical, and eco-friendly solutions for gift wrapping and packaging. Small-scale artisans can also transform these materials into decorative items, home accessories, and event decorations. Finally, by manually compressing and reshaping used paper, lightweight storage boxes and organizational items can be crafted, providing innovative and sustainable solutions that are highly scalable without reliance on costly, centralized industrial infrastructure.

2.1.2.5 Furniture & Wood

Furniture and wood waste is a small-volume stream, with approximately 600 tons/year recovered³⁴, mainly from commercial and industrial sources such as carpentry workshops and furniture manufacturers. The market is niche and locally contained, driven by small processors producing secondary products. There is no significant export market, and demand remains limited.

Furniture & Wood could be recirculated to provide creative furniture pieces such as tables, chairs, benches, storage units, beds, decorative items, garden planters, light fixtures. And the production processes for both used furniture and wood pallets require dedicated workshop spaces with assigned areas for each stage, ensuring efficient and safe production.

³² Market Systems Analysis, USAID, 2023

³³ Recycling Value Chains Analysis, USAID, 2023

³⁴ Recycling Value Chains Analysis, USAID, 2023



FIGURE 5: EXAMPLES OF FURNITURE & WOOD

2.2 KEY STAKEHOLDERS' ENGAGEMENT

The following stakeholders were defined as key stakeholders of the implementation of the assignment, the role and responsibility of each as follows:

TABLE 7: KEY STAKEHOLDER LIST

	Stakeholder	Role
1.	Ministry of Environment (MoENV)	MoENV plays the main role in the solid waste management schematic in Jordan, developing and overseeing the national-level planning, policy, and legislative frameworks for the SWM system.
2.	Greater Amman Municipality (GAM)	Operates as the primary operational authority for SWM within Amman. GAM manages the largest landfills (like Al Ghabawi), oversees waste collection and transfer services, and implements local sorting and recycling programs.
3.	Amman Vision for Recycling & treatment (AVTR)	In alignment with the Economic Modernization Vision, in 2022 GAM established Amman Vision for Treatment and Recycling, revolutionizing SWM services and providing recycling solutions in Amman. Currently the SWM services are being handed over to AVTR from GAM.

2.2.1 BILATERAL INTERVIEWS

During the inception phase several consultation meetings were conducted with the key stakeholders to align the objectives of the project with the stakeholders' expectations and to create a mutual understanding of the upcycling hub aspects (input materials, location, hub's scope & vision).

The first meeting after the project's kick-off was held on 25/09/2025 with the presence of representatives from MoENV, GAM, & AVTR where the following topics had been discussed

1. **Scope:** the hub should be able to handle all types of plastics, with priority on clean SUP from post-production waste and clean commercial waste.
2. **Strategic alignment:** the hub should support achieving national goals and targets and Economic Modernization Vision through increasing waste diversion from landfills and higher recycling/upcycling rates, creating green jobs, valorization of the SUP value chain, and improving quality of living for the formal and informal workers.
3. **Sustainability:** to ensure financial viability and sustainability, the hub must be established as for-profit model with a clear revenue-based service line.
4. **Potential locations:** GAM has proposed different potential locations to host the upcycling hub.
 - a. Near to sources of plastic waste in industrial areas.
 - b. Near to Sha'er transfer station.
 - c. Near Al Ghabawi landfill.

Subsequent meetings were conducted with the stakeholders individually. During MOENV meeting, the regulatory framework of SWM were discussed to understand the legal stand of the upcycling hub and explore any regulatory updates that would impact the establishment of the hub. Furthermore, the teams had demonstrated the newly signed MOU with the German-Jordan University (GJU) to support Green and Circular Ecosystem, which could be a starting point in designing and implementing a campus-based upcycling initiative that could provide real-evidence to the establishment of the upcycling hub.

With the individual meetings with GAM's working team, a comprehensive discussion was made regarding the potential locations leading to total change in the list of potential locations after taking into consideration the scope of the hub. The proposed locations (**TABLE 8**) were assessed based on the availability of input materials and possibility of implementing source separation.

TABLE 8: LIST OF PROPOSED LOCATIONS FOR THE UPCYCLING HUB

	Site	Pros	Cons
1.	Waste Banks (Amman)	- The sites are still under construction where design changes can be made. - Located within two commercial areas, which provides a sustainable source of sorted materials. - the waste bank project owned by Environmental studies directorate in GAM which can be utilized without long and complicated approvals	- Small area for waste operations (receiving, sorting, and redistribution), if the site is equipped with small scale upcycling machinery it would not be expandable. - Operational and business models of waste banks were designed for PPP framework, where materials will be handled, and sold according to the market prices.
2.	GAM's public gardens and parks (i.e., Al Hussien parks and King Abdullah Park)	- Availability of workshops and workplaces within the premises owned by GAM that can be utilized. - Separation at source could be implemented to source input materials within the gardens and parks. - Better public visibility and perception.	- Limited supply of input materials from the visitor's activities. - Environmental requirements and Licensing requirements would be stricter, since the hub would be in direct contact with the public. - The ownership of the gardens and parks is located under agriculture department in GAM.
3.	Touta Yard (Downtown Amman)	- Proximity to recyclable materials sources (Downtown commercial sector). - Availability of space within boundaries (9,850 m²). - Separation at source initiative implemented by GIZ is currently taking place where 25 -30 tons of packaging materials are collected monthly.	- Regardless of the current operation, the yard lacks proper license to conduct waste treatment activities.

Exploring the new potential locations, the most promising location would be Touta yard (**FIGURE 6**), for various reasons, where most important is input materials constant supply through the separation at source collection initiative in nearby commercial sector; this initiative would contribute into Upcycling Hub financial viability by reducing collection and sorting cost, also, the location proximity to the Downtown commercial sector would supply the Hub with high quality input materials.

Although Touta yard holds great potential as intervention location further assessment for the design, collection operations, environmental impact, regulatory and licensing compliance should be conducted.



FIGURE 6: TOUTA YARD BOUNDARIES AND LOCATION

2.3 RAPID STAKEHOLDER MAPPING

Through the key stakeholders' interviews and consultations, plastic value chain actors were identified and assessed for their role, interest and influence in the upcycling hub operations and engagement as shown in **TABLE 9** and **Figure 7**.

TABLE 9: LIST OF SECONDARY STAKEHOLDERS

Category	Organization	Role
Governmental bodies	Ministry of Local Administration (MoLA) – WM directorate	Policy coordinator Local governance
	Jordan Chamber of Industry (JCI) – Energy & Environmental Sustainability center	Sector representatives and facilitator
	Jordan Chamber of Commerce (JCC)	Sector representatives and facilitator

Category	Organization	Role
	Jordan Customs	Import / Export data provider
	Ministry of Investment	Waste Management for Industrial sector
Private sector	Plastic industry (Middle East Plastic Packing Industry LLC, Al Dhilal Plastic Industries, Basics for Plastic Industries, etc.)	Technology partners, end-market buyers
	SWM operators, Recyclers (Hadaret Al-Buruj Plastic Industries Co., Econest Recycling, BE environment, Faster steps, etc.)	Supply chain partners
Supporting	CSO/CBO (Future Pioneer, Jordan environment society, Jordanian Federation for Environmental NGOs, etc.)	Community engagement and awareness
	Development institutions (JEDCO, UNDP, GIZ, GGGI, Oxfam, etc.)	Business support, project alignment with other initiatives
	Educational institutes (HTU, GJU)	Innovation and R&D support, Recycling initiatives / Pilot scale recycling hub
Informal Sector	Scrapyard dealers, waste pickers, etc.	Supply chain partners

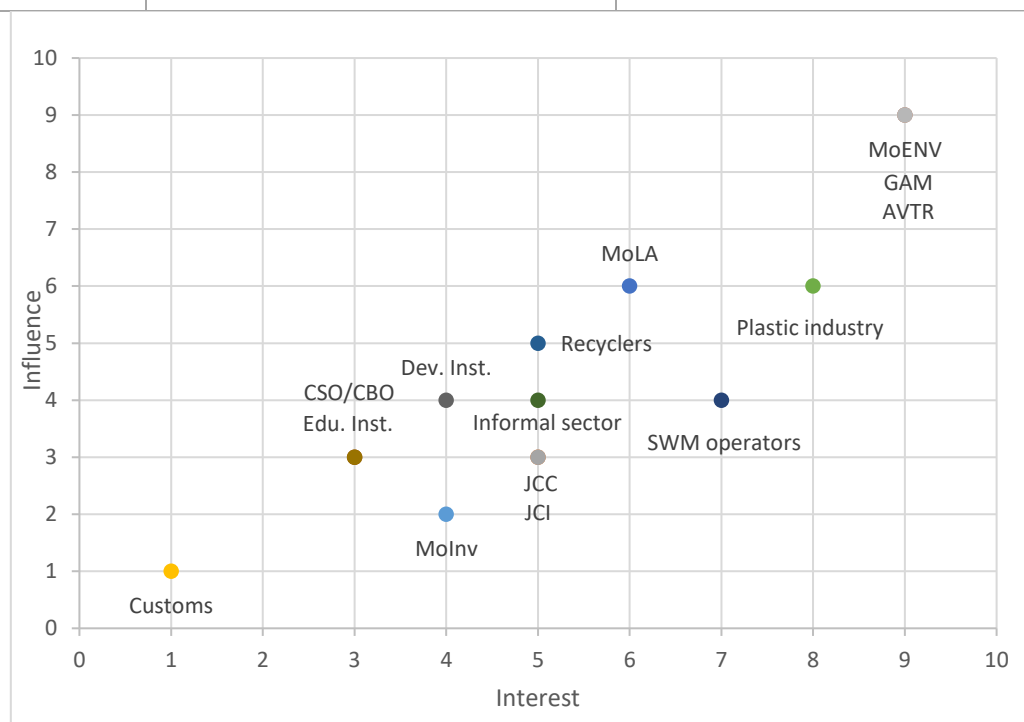


FIGURE 7: INTEREST/INFLUENCE MATRIX

2.4 UPCYCLING HUB CONCEPT

Upcycling hubs are innovative facilities that operate at the intersection of waste management, sustainable entrepreneurship, and community development. Their core function is to divert reusable and repairable materials away from landfills by facilitating creative reuse, repair, remanufacturing, and upcycling processes. These hubs serve as collection points for various waste streams such as plastic, textiles, electronics, and construction and demolition (C&D) materials which are then sorted, processed, and transformed into new products or raw materials with added value. By extending the lifecycle of materials, upcycling hubs contribute to reducing environmental impact, conserving resources, and promoting circular economy principles.

The operational models of upcycling hubs vary widely but generally share key characteristics. Many hubs operate as multi-functional spaces that combine material recovery, retail operations, training workshops, and public engagement activities (**Figure 8**). These facilities often partner with municipal waste authorities to ensure consistent material inflows and integrate with local waste management systems. Business models are typically hybrid, drawing on a mix of revenue sources such as resale of upcycled goods, training services, public or donor funding, and private partnerships. This diversified approach enhances financial sustainability and resilience to market fluctuations.

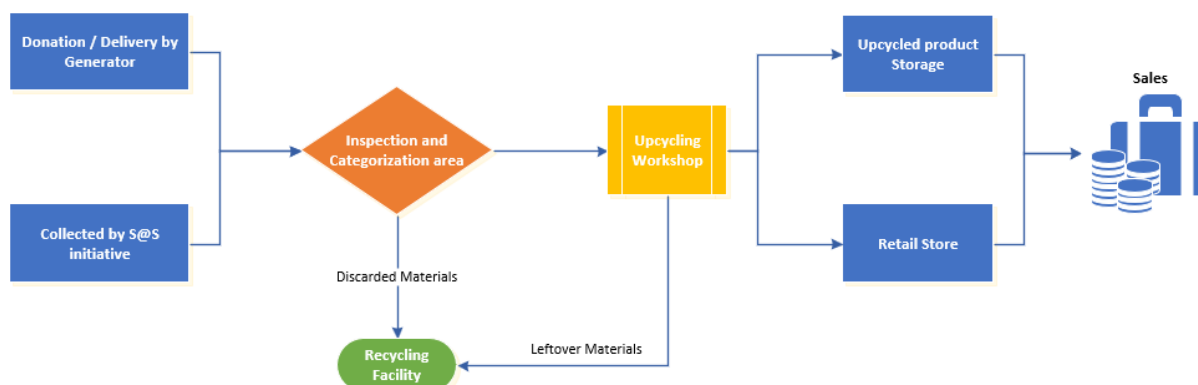


FIGURE 8: UPCYCLING HUB SCHEMATIC MODEL

Upcycling Hubs had several benefits; economically, upcycling hubs generate new livelihood opportunities through green job creation, support for small-scale circular enterprises (SME's), and skills development programs. Socially, they serve as inclusive platforms that empower marginalized communities, foster volunteerism, and build public awareness about sustainable consumption and waste reduction. Education and outreach are central to many hubs, helping embed circular economy values across society.

Valuable insights for designing effective upcycling hubs could be drawn from International best practices. For example, as shown in **FIGURE 9**, the ReTuna Återbruksgalleria in Sweden is co-located with a recycling center, allowing direct capture and resale of reusable goods. Its integration of collection, repair, and retail operations has transformed it into a commercial and educational hub for circular practices. Similarly, the 48er-Tandler in Vienna showcases how municipal leadership, strong branding, and mobile collection services can drive citizen participation and maintain steady material flows.

Other successful models include La Recyclerie in Paris and Kretsloppsparken Alelyckan in Gothenburg, which demonstrate how upcycling hubs can evolve into lifestyle destinations. By combining repair workshops, cafés, exhibitions, and educational spaces, they appeal to a broad public audience and foster a culture of environmental stewardship. Additional examples from cities like Ljubljana and those in Italy and Belgium highlight the importance of embedding social inclusion and vocational training into hub operations, particularly through partnerships focused on reusing construction and demolition waste.



FIGURE 9: INTERNATIONAL RECYCLING/UPCYCLING CENTERS

A similar vision is taking shape in Jordan with the planned establishment of the Creative Circular Economy Center (CCEC) in Aqaba. This center will serve as a localized upcycling hub designed to promote resource recovery, reuse, and circular innovation through the implementation of 9R's principles. Situated within a residential area, the CCEC will function as a collection and transformation point for reusable materials, while also offering community-based education, training, and entrepreneurial support. By integrating with the local waste system and engaging citizens through outreach and cultural activities, the CCEC aims to become a pioneering model for sustainable material management and circular economy implementation in Jordan. Looking into upcycling hub types, two distinctive types could be evaluated within the pre-feasibility phase: Semi-industrial hubs and Creative hubs.

- **Semi-industrial upcycling Hub:** These hubs act as a bridge between raw waste collection and high-end manufacturing, designed to produce a standardized, high-quality raw material (pellets or flakes) that can compete with virgin plastic in an industrial setting.
- **Creative upcycling Hub:** These hubs focus on the "creative reuse" aspect of upcycling. They transform waste directly into finished products within the same facility.

3 REFINED METHODOLOGY

The methodology includes field visits, stakeholder engagement, and thorough desk research, building on existing knowledge of the waste management sector. Through the collaboration with the Client, Ministry of Environment (MoEnv), and other key stakeholders (GAM and AVTR), the Consultant will ensure that the project aligns with local priorities and objectives, and regular progress updates will be provided on a monthly basis to keep all parties informed and engaged.

Hence, the following methodology details the technical approach that will be used by the consultants to handle the tasks and activities at hand:

TABLE 10: REFINE METHODOLOGY

S. No.	Task	Methodology	Duration	Expected outcome
Task 0: Kick-off Meeting				
1	Methodology and timeline development	Initially, the consultant developed a project methodology framework to guide our work, which will include defining overall approach and the specific steps we'll take including clear timeline outlining key milestones and dependencies to ensure the project stays on track.	09/2025 01/2026	– - Refined methodology - Project timeline
2	Key stakeholders' identification	Following the project kick-off meeting, the consultant will identify the primary stakeholders engaged in the project activities and engage with them in aligning project objectives and outcomes.	09/2025 01/2026	– Primary Stakeholder mapping
3	Gather available reports, studies, information about the scope	The consultant will collect and analyze existing reports on Circular Economy, waste management studies, and previous Plastic-related initiatives in Jordan, to document and set the baseline information and knowledge gaps.	09/2025 01/2026	– - Information repository - Baseline data related to Plastic in Jordan
Task 1: Inception Report and Preliminary Scoping of the Recycling and Upcycling opportunities				

S. No.	Task	Methodology	Duration	Expected outcome
4	Literature Review and Preliminary Scoping	A systematic review and analysis of all collected reports and studies will be conducted focusing on SUP to identify household plastic waste generation patterns, and industrial plastic waste with upcycling potential. This review and analysis will guide mapping of plastic product lifecycle, production and consumption trends and seasonal variations. Although the focus will be on plastic and SUP, the consultant will explore other alternative waste streams (i.e., packaging materials, textiles, tires) to enhance the viability and sustainability of the upcycling hub taking into considerations materials availability, handling procedures and environmental impact.	09/2025 01/2026	Preliminary scoping of the upcycling opportunities
5	Key stakeholder interviews and Preliminary Stakeholder Mapping	Structured interviews with key stakeholders will be conducted to validate the findings and baseline information and collaboratively identify secondary stakeholders in public and private sectors to develop project stakeholder's matrix categorizing the stakeholders by influence and interest level.	09/2025 01/2026	Preliminary stakeholder matrix
6	Intervention Area validation	Through the key stakeholder interviews, the consultant will validate the proposed intervention locations for the upcycling hub by assessing the resources availability, current capabilities (i.e., collection, sorting, storage) and location constraints.	09/2025 01/2026	Intervention area assessment
7	Inception meeting	A meeting will be arranged with key stakeholders' representatives to present the findings of the inception phase, align the scope of the Upcycling Hub with the national vision, and agree on the way forward in the next phases regarding the Upcycling Hub scope, expected operations, and intended scale. As well as assigning roles and responsibilities of each party.	02/2026	Approved inception report and presentation
Task 2: Stakeholder mobilization for Innovative Plastic Recovery and Upcycling Solutions				
8	Public-Private Dialogue Facilitation	Following the inception phase, the core of the mobilization phase will involve designing and executing Targeted Engagement Activities, which will include a mix of bilateral interviews, focus group discussions, and multi-stakeholder roundtable dialogues. These activities will be tailored to each stakeholder	11/2025 04/2026	Stakeholder Mobilization Report including findings, potential partners,

S. No.	Task	Methodology	Duration	Expected outcome
		group, ensuring the collection of detailed insights on specific challenges in plastic recovery and upcycling, identification of existing or emerging innovative practices, and exploration of potential synergies between the public and private sectors.		and recommendations
	Pilot scale design	During stakeholder mobilization, the consultant with the collaboration of a selected university will design upcycling pilot initiative focusing on plastics and other up-cyclable materials, which will inform the sizing and technical requirements of the infrastructure. Furthermore, the pilot initiative will design and set up a dedicated, accessible space for the Permanent Exhibition and Awareness Hub, including initial educational materials and signage. The pilot design will propose a potential funding mechanism to procure and install the necessary small-scale sorting infrastructure (bins, sorting stations) and basic upcycling equipment (e.g., shredder, small extruder/injection machine).	11/2025 – 04/2026	Campus-based upcycling pilot initiative
Task 3: Pre-Feasibility Study for an Upcycling Hub and Sustainable Business Models				
9	Upcycling Hub Development	Utilizing the findings from the inception report and stakeholder mobilization report, the consultant will identify upcycling hub core function placing special emphasis on specific plastic waste streams and other potential waste streams (e.g., packaging materials, textiles, tires) based on the type of the expected hub and the anticipated scale. The core function development will span material innovation, business incubation for upcycling ventures, specialized technical and vocational training, and the provision of essential business support services, ensuring these functions directly address current market gaps and leverage local material availability. The additional materials will be assessed based on the following key criteria: Technical feasibility: evaluates the efficiency with which a material can be effectively re-integrated into the circular economy through upcycling,	03/2025 – 08/2026 03/2025 – 08/2026	Pre-Feasibility Analysis Report

S. No.	Task	Methodology	Duration	Expected outcome
		repair, or repurposing using available technologies. The assessment critically considers factors such as the material's ease of handling, the adequacy of the existing infrastructure for refurbishment or reuse, and any inherent limitations that may hinder processing efficiency. Consequently, materials requiring minimal processing steps and benefiting from established, proven recycling or reuse pathways are prioritized as the most technically feasible. - Market Demand: The proposed selection criteria for Market Demand will be systematically assessed using a scoring matrix approach. This approach involves defining five distinct pillars, each representing a key aspect of market viability. To reflect their relative importance, each pillar is assigned a specific weight. Materials will be evaluated against each pillar using a standardized scale ranging from 1 (Very Low), signifying weak demand, low availability, or poor incentives, to 5 (Very High), indicating strong demand, high availability, or significant incentives. The overall prioritization score for each material will be determined by the sum of its weighted scores, calculated by multiplying the assigned score for each pillar by its corresponding weight. Consequently, materials achieving the highest total scores will be prioritized for intervention or investment. Environmental impact: Evaluating the Environmental Impact of materials is a critical step in ensuring that all upcycling activities demonstrably contribute to core sustainability objectives. The analysis examines each material's alignment with environmental priorities, focusing on its potential to reduce landfill waste, lower carbon emissions, conserve natural resources, and minimize pollution. Crucially, the assessment also incorporates a comprehensive look at associated environmental risks, such as emissions generated during processing, the potential for microplastic release, or risks related to chemical exposure. By quantifying and understanding the complete environmental footprint associated with handling each material, this criterion supports the selection of options that		

S. No.	Task	Methodology	Duration	Expected outcome
		guarantee ecological responsibility and ensure full alignment with national environmental goals.		
10	Market Analysis and Comparative evaluation	Following hub function identification, the consultant will execute market analysis to assess the current market demand and national production capacity for sustainable alternatives to Single-Use Plastics (SUPs), including both upcycled products from the proposed hub and other non-SUP substitutes. A subsequent comparative evaluation will critically assess the selected alternatives based on their environmental performance, reusability potential, and socio-economic impact, with specific attention to the implications for the informal waste management sector and potential for job creation and skill development	03/2025 08/2026	–
11	Business Model and funding mechanisms Development	Various viable operational models will be evaluated to ensure the Upcycling hub's long-term financial sustainability without reliance on perpetual external funding. Therefore, the consultant will explore a mix of Public-Private Partnerships (PPPs), service-based revenue streams (e.g., paid incubation services, material testing, consulting), dedicated Research and Development (R&D) funds derived from industry contributions or grants, and exploring carbon credit or extended producer responsibility (EPR) linkages, ultimately selecting and detailing the most promising model(s) with clear financial projections and risk assessments.	03/2025 08/2026	–
12	Policy Recommendations	Concurrently, the consultant will formulate Policy and Financial Recommendations with a preliminary Roadmap, where specific enabling policy incentives will be proposed to accelerate the transition away from SUPs and support the upcycling ecosystem, such as targeted tax rebates, exemption from import duties on specialized upcycling equipment, or preferential procurement policies for upcycled products. Based on all previous findings, a practical, tentative roadmap will be developed for the phased establishment and scaling of the national hub, outlining critical milestones, associated timelines, required	03/2025 08/2026	–

S. No.	Task	Methodology	Duration	Expected outcome
		resources, and measurable outcomes to serve as the foundational blueprint for subsequent, more detailed implementation planning.		
Task 4: Preparation of a Viability/Sustainability Concept Note of a Pilot Upcycling Hub				
13	Concept Note Drafting	The Consultant will consolidate critical evidence from the preceding Market Scoping Study, the Pre-Feasibility Analysis, and the University-Based Pilot Project findings to align and define the value proposition of the upcycling hub and structure business model as well as financial model including revenue-based cash flow and sales projections. All compiled information will be integrated into a professional funding proposal format to mobilize private sector investment and other donor funding. The Concept Note will conclude with a clear and practical proposal for scaling and replication, outlining the mechanisms and phased approach for expanding the pilot into a sustainable national model, ensuring that the entire document demonstrates the project's economic, social, and environmental sustainability and its potential to drive significant systemic change.	07/2025 – 09/2026	• concept note/funding proposal • A list of potential funding sources and strategic recommendations