

IMPACT STORY

PROBLUE



AT A GLANCE

Region	Country	Funding
Middle East, North Africa, Afghanistan and Pakistan	Lebanon	USD 250,000

Caption: Litter lining the beach in Lebanon.
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Lebanon's Costing Model for Solid Waste Management

Supporting the financial sustainability of the waste sector

THE CHALLENGE

Lebanon's economic and financial crisis of 2019 has significantly accelerated the collapse of the waste management sector. Many waste treatment facilities ceased operations due to limited funding to run and maintain them. As a result of inadequate waste collection and disposal practices, extensive amounts of marine litter flowed into the Mediterranean Sea. In 2021, around 3 kilograms of plastic waste per person and per year leaked from the waste sector into the sea in coastal cities, according to the [Marine Litter Baseline](#) conducted by the World Bank, with funding from PROBLUE. This was six times higher than that of a well-performing solid waste management system.

RESULTS

The aim of the PROBLUE support to Lebanon was to strengthen the financial sustainability of waste management services and reduce marine litter. Based on the baseline analysis, a [Costing Model for Solid Waste Management](#) the Model was developed and tested in 56 municipalities across the country.

The Model piloted the implementation of the draft Cost Recovery Law for Solid Waste Management¹, which supports Lebanese municipalities in estimating solid waste management costs and provides the basis for setting service fees. The cost of the waste services vary between **\$44-\$82 per ton per month**, depending on the type of collection, treatment and disposal.

¹ The draft Law for Cost Recovery in Solid Waste Management was approved by the Council of Ministers of Lebanon in November 2023 and is now being discussed at the Parliament for its eventual ratification.

APPROACH

-  Close coordination with the Ministry of Environment, local authorities and other stakeholders.
-  Efforts to ensure alignment with the national context, particularly when determining waste management costs and charges.
-  Alignment with the World Bank engagement strategy in Lebanon to continue to protect the people and businesses from the impact of the compounded crises, help prepare for the recovery of the economy and advance the reform agenda.
-  Systematic collection of data on waste generation, collection, treatment and disposal.



GENERATION



COLLECTION



TREATMENT &
DISPOSAL

Technical data

Quantity &
Composition

Waste density

Trucks and containers
capacities

Distances

Fuel consumption

Staff working times

Financial data

Unit costs of
equipment

Staff costs

Maintenance

Revenues from sale of
recyclables/compost

Unit cost of
equipment

Civil works and
facility infrastructure

LESSONS LEARNED

- Costing models can be useful. To support national plans of waste management, the Model provides the real cost of waste collection, treatment and disposal. This will ultimately enable authorities to improve the operational and financial sustainability of the sector.
- Evidence can shape responses. The Marine Litter Baseline found that inadequate collection practices and open dumping have impacted Lebanon's Blue Economy, which spurred greater action.

NEXT STEPS

- A clear understanding of the cost of waste services will help the World Bank and other partners to prepare new interventions, while ensuring the sustainability of the waste sector and protecting the ocean.
- This Costing Model can be replicated in other countries as it provides a practical foundation for planning, transparency, and financial sustainability of the waste sector.



The Costing Model allowed us to estimate the real cost of the waste management services in our cluster, which is around \$70/ton, while we had estimated the cost to be around \$40/ton. Based on the Model, we are working to address the main expenditures which occur in our current system to prevent losses and reach our objective to adopt a zero-waste approach."

Mr. Fawzi Kalash, Mayor of
Beshmezzine, El Koura Cluster



Caption: Municipal officials at a training workshop in July attended by 50 municipalities to test the Model. Between June 2024 and March 2025, the Model was tested in six municipal clusters to generate the data and ensure consistency and alignment with real life conditions.

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