



## **Tackling Plastic Pollution and Food Waste in Mar Mikhael - Gemmayze, Beirut**

**Recommendations for Policymakers, MSMEs and Consumers**

**SwitchMed II in Lebanon:**

Demonstrating Sustainable Consumption and Production and Circularity Practices

## United Nations Environment Programme

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# United Nations Environment Programme



The **United Nations Environment Programme (UNEP)** is the leading environmental authority in the United Nations system. UNEP uses its expertise to strengthen environmental standards and practices while helping implement environmental obligations at the country, regional and global levels. UNEP's mission is to provide leadership and encourage partnership in caring for the environment by inspiring, informing, and enabling nations and peoples to improve their quality of life without compromising that of future generations.

UNEP's **Industry and Economy Division** provides solutions for economic decision-makers and helps change the business environment by offering platforms for dialogue and cooperation, innovative policy options, pilot projects and creative market mechanisms. It works through three main branches: Chemicals and Health; Energy and Climate and Resources and Markets.

UNEP **Regional Office for West Asia (ROWA)** coordinates the programme of work in the region, acting as the link between the 12 countries it covers and UNEP's various units, centers and divisions. ROWA collaborates with major groups, private sector, youth and other stakeholders to help bridge the science-policy gaps by keeping the state of the environment under review, identifying environmental threats at early stages, developing sound environmental policies, strategies, legislation and supporting member states in implementing these policies.

# SwitchMed Programme



The policy component of the **EU-funded SwitchMed programme**, led by **UNEP**, aims to develop and implement policies to switch to **Sustainable Consumption and Production (SCP) and Circular Economy (CE)** practices in Lebanon and 7 additional countries across the southern shore of the Mediterranean Sea.

Under SwitchMed I in Lebanon UNEP provided advisory services to the Ministry of Environment in the production and endorsement <sup>1</sup> of the Sustainable Consumption and Production National Action Plan (SCP-NAP; SDG 12.1) with a focus on the industrial sector along the Litani Basin and Qaraoun Lake.

During SwitchMed II, considering the local context in Lebanon and as an entry point for piloting circular loops and SCP patterns, UNEP established a partnership with the civil society organization, Nusaned, to test SCP and CE practices and collect insights through a community-based demonstration project in the Mar Mikhael-Gemmayze area in Beirut. The project aims to develop impactful methodologies to:

- (i) establish circular loops with a focus on plastics and food waste**
- (ii) reinforce the greening of restaurants**

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<sup>1</sup>The SCP-NAP was endorsed by the Lebanese Ministry of Environment and Ministry of Industry.



## UNEA Resolutions

### On Preventing Plastic Pollution and Food Waste

Recognizing the urgency of environmental challenges such as plastic pollution and food waste, UNEP has played a pivotal global role in championing resolutions and initiatives aimed at mitigating these challenges. Through the United Nations Environment Assembly (UNEA), UNEP has adopted resolutions to tackle:

#### (i) Plastic Pollution

In March 2022, UNEA 5.2, marked the historic adoption of the resolution 'End Plastic Pollution: Towards an Internationally Legally Binding Instrument'. The Intergovernmental Negotiating Committee (INC) is leading negotiations on this agreement, aiming to finalize by the end of 2024.

#### (ii) Food Waste

UNEP is committed to promoting sustainable practices and innovative solutions to reduce food loss and waste in accordance with the UNEA Resolution (4/2) 'Promoting sustainable practices and innovative solutions for curbing food loss and waste'. UNEP focuses on capacity building and advocacy facilitating experience and knowledge exchange to improve the enabling conditions necessary to achieve the goal of halving food loss and waste. UNEA Resolution (2/9) on 'Prevention, Reduction and Reuse of Food Waste' emphasises the importance of collaborative efforts especially with other international organizations.

## Nudawwer - SwitchMed Project



UNEP collaborated with the Lebanese NGO "Nusaned" to implement the pilot project *Nudawwer* in Beirut. *Nudawwer* refers to a circular or continuous movement in Arabic and the root of the word may also be associated with recycling. Throughout the project duration (July 2022 – December 2023), the emphasis is on drawing lessons learned from the testing phase to instil circularity, particularly the concepts of prevention and reduction, rather than just promote recycling practices within the community.

The Nudawwer Project targeted a variety of stakeholders within its testing phase: food service providers (10 eateries/restaurants), retailers (7 MSMEs: 4 gyms, 2 markets and 1 spoiler centre (retail store for automotive parts)), households (646 registered as individual users), 1 school and 1 local social enterprise.

The project gathered insights on **food waste, plastic waste and restaurants** operations by creating circular loops that fed back into the community.

By creating a replicable model, Nudawwer seeks to promote the adoption of more sustainable practices and policies, with the potential for national impact, leading to a more significant contribution to the global efforts of preventing waste and circularity. This approach will ensure that the project's efforts have a far-reaching impact.



# Good practices, Lessons Learned and Recommendations



This document provides targeted recommendations, based on the ***Nudawwer*** project, for **policy makers** to establish an enabling policy framework and to support **Micro, Small, and Medium-sized Enterprises (MSMEs)** in adopting green and circular business models, as well as recommendations for **consumers**.

Encouraging national policies for sustainable production and consumption among food service providers requires collaboration among all relevant stakeholders, including government agencies at a national and local level, the private sector, and civil society.

A comprehensive approach involves enforcing circular economy models, such as waste prevention, reduction, reuse, recycling and composting, increasing resource efficiency, promoting renewable energy sources, and encouraging innovative practices.

The limited state of waste management infrastructure in Lebanon, combined with inadequate waste segregation practices at the household and business levels, presents a significant challenge which is compounded by the multi-faceted crises the country is facing.

However, there is an opportunity to turn these challenges into positive outcomes by embracing SCP and circular practices, with focus on waste segregation, food waste measurement, redistribution, reuse, recycling and composting, providing socio-economic and environmental benefits within the context of food waste and plastic pollution in Lebanon.

The restaurant industry is a cornerstone of the Lebanese economy, coupled by increasing tourism trend and diaspora flows. According to Lebanon's Economic Vision 2019, the contribution of productive sectors accounts up to 16% of the country's GDP, whereby the Agriculture sector and 'Hotels and Restaurants' sector account for 3% each and Manufacturing accounts for the remaining 10%.

However, restaurants in Beirut are major contributors to food waste generating a substantial 1,620 tons annually. This not only contributes to the waste problem but also results in the release of 4,110 tons of CO<sub>2</sub> emissions. This waste constitutes 0.15% of Lebanon's total organic waste, with Lebanese restaurants producing 34 kg more organic waste daily compared to others serving international cuisines.

While policies and plans in Lebanon have been proposed to promote more sustainable practices, socio-economic instability creates a challenging environment for individuals and businesses to implement, which necessitates innovative strategies for resilience and long-term sustainability.



*Mar Mikhael, Beirut (Left) Gemmayze, Beirut (Right)*

To set the context for the regulatory framework, Lebanon has been a party to the UN Framework Convention on Climate Change (UNFCCC) since December 1994 (Law 359) and ratified the Kyoto Protocol in November 2006 (Law No 738). In 2002, the Environmental Protection Act for Lebanon (Law No 444) was set out outlining the basic principles and general provisions to regulate environmental protection and management, defining the responsibilities and penalties for those who abuse the environmental resources and cause environmental pollution.

Lebanon's framework for Integrated Solid Waste Management is based on the principles of Law 444/2002, prioritizing the principle of preventive action and minimizing solid waste generation, preventing random disposal, open dumping and burning of solid waste, and seeking to enforce the "Polluter Pays Principle". In addition, decree 5605 underscores the principles for sorting domestic solid waste at the source and characterizes them into three categories: organic waste, recyclables, and inert waste.

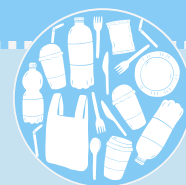
Lebanon's first National Nutrition Strategy and Action Plan (2021-2026) addresses the crucial issue of food waste reduction. This strategic plan sets a milestone in aligning with global sustainability goals, emphasizing the importance of sustainable food systems, and switching to a diet with a lowered environmental footprint while minimizing food waste across the nation.

Recent initiatives, such as the Ministry of Environment's plan emphasizing decentralization and collaboration, indicate progress, yet execution challenges emerge, particularly in the context of enforcing circularity and sustainable consumption and production.

The capacities of the local government need to be well suited and supported to tackle the issues of food waste and plastic waste in collaboration with the private sector. Despite commendable initiatives by civil society, including food banks, private companies, composting programs, and public awareness campaigns, a unified holistic approach is imperative.

# Recommendations for Policymakers

## On Plastics



### National Level

#### National Taskforce Responsible for Implementation

Draft and implement strategies and policies promoting sustainable and circular practices, such as reducing plastic use, banning problematic plastics, single-use plastic items, emphasizing waste segregation at the source while implementing sustainable public procurement strategies and enforcing circular economy models.

#### Data Collection and Reporting

Develop and implement a robust data collection system at the national level to monitor plastic production, consumption, import and export, recycling rates, and overall environmental impact. Through establishing a reliable national data collection process, monitored by an assigned task force, accurate and accessible annual reports on current relevant projects and initiatives can also be documented.

#### Standardization in Labelling and Recycling

Adopt standardized labels for plastics, especially packaging, enhancing recycling literacy among consumers. Set national standards for the collection and processing of recyclable plastics to ensure consistency and efficiency in the recycling industry which contributes to closing the circular loops.

#### Extended Producer Responsibility and Deposit Scheme for Packaging

Apply extended producer responsibility at the national level, making manufacturers accountable for the entire product life cycle and promoting circular practices that decrease pressure on primary raw materials. Introduce a deposit scheme for single-use packaging, incentivizing consumers and businesses to return items for recycling, reducing litter, and promoting responsible disposal.

#### Integrated Planning for Material Recovery Facilities (MRF)

Facilitate integrated planning at the national level for the establishment of MRFs to enhance the collection, sorting, and processing of recyclable materials. This involves coordinating strategic initiatives, setting national standards, and promoting collaboration among regions.

#### Material Exchange Platform

Establish a national platform to facilitate the exchange of secondary raw materials and products. This platform can serve as a centralized hub for coordinating material exchanges, sharing best practices, and encouraging a standardized approach across the country.

#### Regulatory Measures for the Informal Sector

Put in place regulatory measures for waste pickers, promoting a structured and environmentally conscious approach that prioritizes participation in formal recycling initiatives.

#### National Behavioural Change Campaigns

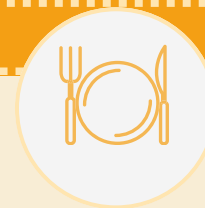
Conduct national public awareness campaigns on plastic waste reduction, educating individuals on responsible plastic use, reuse, recycling and disposal with a focus on the concepts of the circular economy.





# Recommendations for Policymakers

## On Food



### **National Level**

#### **National Taskforce Responsible for Implementation**

Introduce inclusive national strategies, policies facilitating and incentivizing food donation, redistribution and composting, fostering partnerships between food service sector, charitable organizations to facilitate the efficient distribution and donation of surplus food, and with composting facilities to ensure no food waste goes to landfill.

#### **Data Collection and National Food Waste Baseline**

Realize a national food waste estimate for the food service, retail, and household sectors through robust national data gathered via surveys and field activities to collect crucial metrics such as the number of operating restaurants and the volume of meals consumed outside homes.

#### **Good Practices, Guidelines and Incentives**

Provide clear and actionable guidelines and incentives at the national level to encourage businesses to adopt organic waste treatment options. Promote the establishment of tangible targets for food waste prevention and reduction within the food industry, thereby encouraging the adoption of sustainable practices.

#### **Source Separation and Tracking**

Implement a systematic approach to source separation and tracking of food waste at the national level. Enhance the efficiency of waste management processes and enable targeted interventions to address specific areas of concern.

#### **National Subsidies for Local Compost**

Establish national subsidies to support the purchase of local compost, providing financial incentives for businesses to engage in sustainable practices and contribute to reducing the overall environmental impact of food waste.

#### **National Behavioural Change Campaigns**

Conduct national public awareness campaigns on plastic waste reduction, educating individuals on responsible plastic use, reuse, recycling and disposal with a focus on the concepts of the circular economy.





## Local Level

### Municipal or Communal Composting Facilities

Conduct an assessment of suitable and accessible composting unit locations within neighbourhood clusters, encouraging composting by local eateries and residents. Facilitate establishment within urban areas by streamlining permit acquisition process for these facilities encouraging community-led composting initiatives, contributing to local sustainability efforts and waste reduction.

### Urban and Community Gardens

Encourage the establishment of urban and community gardens at the local level to grow produce, promoting local food production and reducing the environmental footprint of food supply chains. This will also ease the provision of carbon-based materials (e.g., dried leaves) to composting projects, supporting local composting initiatives.



### Local Incentive Program

Introduce a pricing and incentives mechanism at the local level that charges entities based on the amount of plastic waste they produce, incentivizing them to reduce waste and adopt more sustainable practices.

### Training for Local Authorities

Provide training for local authorities on food waste management, ensuring the effective implementation of effective policies that contribute to food waste prevention and reduction at the community level.

### Community Engagement and Targeted Campaigns

Conduct public awareness campaigns on food waste prevention and reduction, engaging the local community on responsible consumption and production and the concepts of the circular economy, fostering a sense of ownership through local campaigns adjusted to local challenges and opportunities.



# Recommendations for Micro, Small & Medium Enterprises



Empowering MSMEs, with a focus on the **food service sector**, to engage in make informed business decisions to actively reduce their environmental impacts and contribute to advancing climate action.

## **Lifecycle Management**

Entities are encouraged to implement comprehensive lifecycle management strategies, integrating sustainability from procurement to the final product, to minimize and prevent waste generation. Encouraging composting, reusing and recycling throughout this process not only reduces environmental impact but also leads to economic savings by optimizing resource use.

## **Sustainable and Local Sourcing**

Adopt a sustainable sourcing policy with specific guidelines for seafood, meat, dairy, and plant-based products aligns entities with environmentally conscious practices. Collaborating with suppliers to reduce packaging waste, such as purchasing in bulk and avoiding single use packaging and reducing dependence on the cold chain further underscores the commitment to sustainability.

## **Waste Analysis and Sorting at the Source**

Waste composition analysis enables entities to identify areas for improvement in waste sorting and validate data accuracy. Distinguishing organic waste for composting from recyclable and non-recyclable waste ensures a more effective waste management system that is continuously monitored and improved.

## **Single-Use Plastics Reduction and Food Waste Prevention**

Single-use plastic reduction and promoting reusable alternatives aligns eateries with the global movement to minimize plastic waste and pollution. In parallel, eateries can combat food waste by incorporating "ugly produce" into meals or donating it to food banks, contributing to both environmental sustainability and social responsibility. Implementing meal tracking systems allows eateries to monitor and minimize organic waste, fostering a more efficient operation while targeting a reduction goal.

## **Energy and Water Efficiency**

Perform monthly audits to enhance energy efficiency through regular maintenance and the adoption of energy-efficient lighting and equipment is essential for reducing the environmental footprint of eateries. As well as auditing water consumption and implementing water-saving practices can contribute significantly to resource conservation.

## **Certification and Ecolabels**

Harmonize certification schemes and ecolabels ensures consistency and authenticity in green practices. Training staff on these sustainable procurement practices, coupled with supporting local economies, strengthens the overall commitment to sustainable and ethical operations.

## **Communication, Branding and Capacity Building**

Design and implementing awareness programs and training initiatives to create a green organizational culture within eateries. Prioritizing sustainability, communicating on eco-certifications and providing practical tips and engaging in dialogue with employees and customers fosters innovation and local climate action and promotes a positive and responsible brand image.

# Recommendations for Consumers



Through making informed and conscious decisions, consumers can contribute significantly to reducing their environmental impact and fostering positive change.

## **Stay Informed and Advocate for Change**

Empower yourself to make informed decisions by staying informed about environmental issues related to plastics and food waste and the impact of consumer choices. Promote action and advocacy within the private sector and civil society by emphasizing the impact of individual action.

## **Mindful and Conscious Purchasing**

Consider purchasing items in bulk to minimize packaging waste. Bulk buying not only reduces the use of single-use packaging but often offers cost savings. Prioritize products with minimal packaging, be conscious of expiry dates, proper storage and ways to use leftovers to minimize food waste.

## **Reusables, Less Single-use**

To prevent plastic pollution, reducing the use of single-use items by using reusables such as bottles, bags, and containers. Embracing durable, long-lasting alternatives to prevent and reduce plastic waste contributing to the circular economy model.

## **Support Sustainable and Local**

Promote and support brands that prioritize sustainability, ethical and local sourcing. If possible, choose products from companies actively working towards reducing their environmental impact and introduce local companies to sustainable alternatives by advocating for reusables. Attend and support local farmers' markets and community events that promote resilient local economies and sustainable living to contribute to individual climate action.

## **Plant-based and Seasonal Produce**

Support local farmers and reduce the carbon footprint of your food by choosing locally produced and seasonal items. This supports local economies and reduces transportation-related environmental impact and decreases reliance on the cold chain. This choice reflects a commitment to reducing energy consumption, minimizing greenhouse gas emissions, and promoting resilient local economies.

## **Reduce Energy and Water Consumption**

Choose energy-efficient appliances and practice energy and water conservation at home. Being mindful of energy and water usage contributes to a reduced environmental footprint.

## **Participate in Recycling and Composting Initiatives**

Separate recyclables from non-recyclables and participate in community-based recycling programs to ensure proper disposal and recycling of waste. Extend your commitment to sustainability by composting at home, turning food waste into nutrient-rich compost which may be used for house plants or if you plant own herbs at home.