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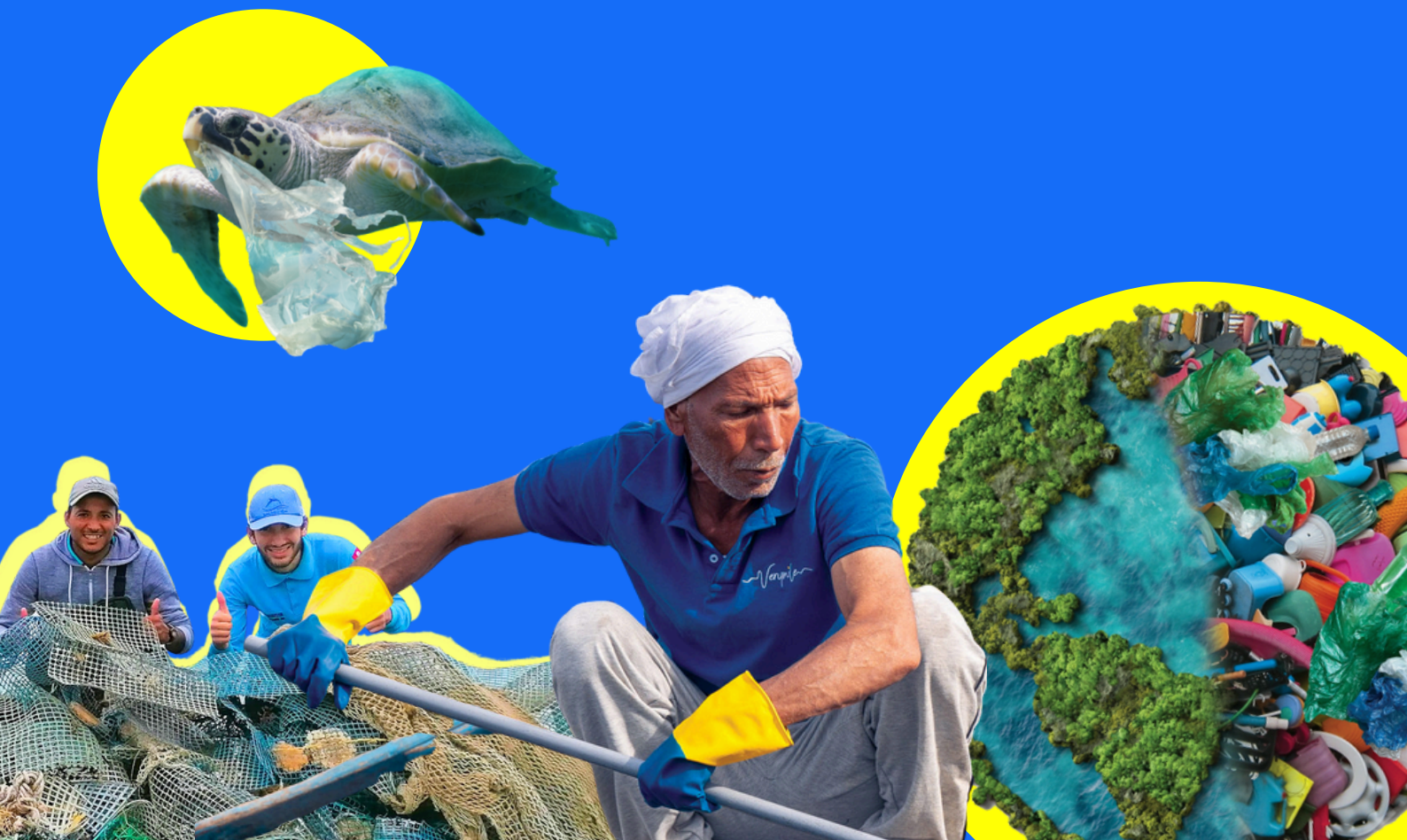
END THE AGE OF PLASTIC

A GREENPEACE MIDDLE EAST AND NORTH AFRICA REPORT

GLOBAL PROBLEM, LOCAL SOLUTIONS

MENA COMMUNITIES DRIVING THE CHANGE AGAINST PLASTIC POLLUTION

DECEMBER 2025



EXECUTIVE SUMMARY

Plastic Pollution in MENA

Plastic pollution has emerged as one of the most pressing environmental crises in the Middle East and North Africa (MENA), with consequences that extend beyond ecological degradation to substantial economic losses and social inequities. Across the region, waste generation is projected to nearly double from 129 million tons today to 255 million tons by 2050, intensifying pressure on already inadequate waste management systems. Despite differing national contexts, common patterns include rapidly increasing waste generation, limited recycling infrastructure, and significant leakage of plastic waste into the environment, particularly into marine ecosystems. Beyond environmental damage, the crisis results in high economic costs. Public health risks are equally severe, with individuals ingesting microplastic particles daily, which is linked to inflammation, reproductive harm, and chronic diseases.

While governments across the region have introduced ambitious policies, from single-use plastic bans to circular economy strategies and national waste management frameworks, implementation remains uneven and often disconnected from community realities, with recycling rates remaining low, even in resource-rich nations.

Community-Led Models

This report examines five community-led initiatives across Egypt, Lebanon, Morocco, Tunisia, and KSA, demonstrating how local actors are filling gaps through innovative, context-sensitive approaches:

VeryNile (Egypt) transforms riverine plastic collection into livelihood opportunities by employing fisherpeople as paid collectors and engaging women artisans in upcycling recovered materials. The initiative demonstrates how traditional knowledge systems, fisherpeople's understanding of the Nile's currents and women's craftsmanship can promote environmental recovery while generating economic returns. By establishing hubs for sorting, processing, and product design, VeryNile creates visible, tangible outcomes that counter the "out of sight" problem typical of aquatic plastics.

Waste Management Coalition (Lebanon) highlights how civil society can convert a crisis into organised, evidence-based advocacy. Born from the 2015 waste crisis, this coalition of environmental, economic, and legal experts combines top-down lobbying with bottom-up community engagement. Its horizontal governance structure shields against corruption, and its evidence-based approach, providing technical, legal, and economic alternatives to government proposals, positions it as a credible proposing body rather than merely an opposition movement.

Pristine (Saudi Arabia) addresses the gap between environmental awareness and sustained behaviour change through youth-focused programs that make environmental action "easy, fun, and fast." By merging activities like plogging (jogging while collecting litter) with gamification apps and training Beach Champions to lead independent cleanups, Pristine builds sustainable habits through repeated engagement rather than one-off events.

Surfrider Foundation Maroc (Morocco) combines direct coastal cleanup action with youth education and data-informed advocacy. The organisation leverages the appeal of surfer culture to engage young people, conducts programs in local Darija to ensure accessibility, and trains volunteers to collect waste data that fills scientific gaps.

Notre Grand Bleu (Tunisia) combines marine conservation with rigorous scientific research and the lived experiences of fishing communities. The organisation acts as an intermediary between policymakers and coastal stakeholders, using data to advocate for policy changes, such as banning plastic fishing gear. By recognising the interconnected well-being of marine environments and coastal livelihoods, they ensure interventions address social, environmental, and economic dimensions.

Cross-Cutting Success Factors and Barriers

Across the five countries studied, community-led initiatives consistently fill operational and behavioural gaps where national policies express ambition but lack local engagement. Local communities play a key role in turning policy commitments into real-world environmental practice. These participatory, place-based approaches generate levels of legitimacy, trust, and continuity that top-down systems alone struggle to achieve.

However, many community initiatives face barriers and challenges that limit their potential. Many countries lack the necessary legal frameworks for social enterprises, and informal waste workers operate without formal recognition or access to resources. Resource constraints remain persistent, with most initiatives relying on volunteer labour, crowdfunding, or seasonal corporate budgets. Infrastructure and expertise gaps are additional challenges, as models that require laboratory access, diving equipment, or extensive institutional partnerships are challenging to replicate in under-resourced contexts.

Finally, community initiatives primarily address downstream waste management and behaviour change and lack the capacity to influence upstream production decisions, a limitation particularly key in petrochemical-dependent economies where plastic production continues to expand despite increasing downstream regulations.

Pathways Forward

A regional transition toward zero plastic waste economies requires strengthening the enabling conditions that allow these initiatives to operate and scale.

- **Legal frameworks:** Governments must establish legal frameworks for social enterprises and formalise and support informal waste workers by recognising them, providing fair compensation, and enabling cooperative formation.

- **Diversified funding:** Funding mechanisms need to diversify beyond project-based grants to include longer-term financing, such as green bonds, revolving funds, and dedicated budgets within national frameworks that recognise community actors as implementers.

- **Adaptive policy-design:** Policy design must become more adaptive, setting outcomes and standards while allowing communities to determine implementation approaches suited to their contexts.

- **Extended producer responsibility**: Extended producer responsibility mechanisms must be strengthened and enforced to shift the burden from consumers and communities to manufacturers through design requirements, take-back schemes, and financing mechanisms that support community collection infrastructure.

Community-led initiatives across MENA are not supplementary to national waste management strategies; they are the foundation for achieving a plastic-free future rooted in both environmental integrity and social justice. These models demonstrate that effective responses to plastic pollution need more than technical infrastructure and regulatory frameworks; they require participatory approaches that generate legitimacy, build trust, and sustain continuity through community ownership.

As MENA countries develop their plastic strategies, national systems must provide the enabling conditions for these proven community-led models to scale and achieve their full potential.

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LIST OF ACRONYMS

CDR	Centre for Development and Reconstruction (Lebanon)
CSR	Corporate Social Responsibility
EPR	Extended Producer Responsibility
GA	General Assembly
ISWM	Integrated Solid Waste Management
LISP	Littoral Sans Plastique
MEAL	Monitoring, Evaluation, Accountability, and Learning
MENA	Middle East and North Africa
MoE	Ministry of Environment (Lebaonon)
MEWA	Ministry of Environment, Water and Agriculture (Saudi Arabia)
FMP	Moroccan Federation of Plastic
ANGed	National Agency for Waste Management (Tunisia)
MWAN	National Centre for Waste Management (Saudi Arabia)
SNRVD	National Strategy for Waste Reduction and Recovery (Morocco)
NGB	Notre Grand Bleu (Tunisia)
NSWMP	National Solid Waste Management Programme (Egypt)
KSA	Saudi Arabia
SWM	Solid Waste Management (Lebanon)
SC	Steering Committee
SFM	Surfrider Foundation Maroc
WMC	Waste Management Coalition (Lebanon)
WMRA	Waste Management Regulatory Authority (Egypt)

INTRODUCTION

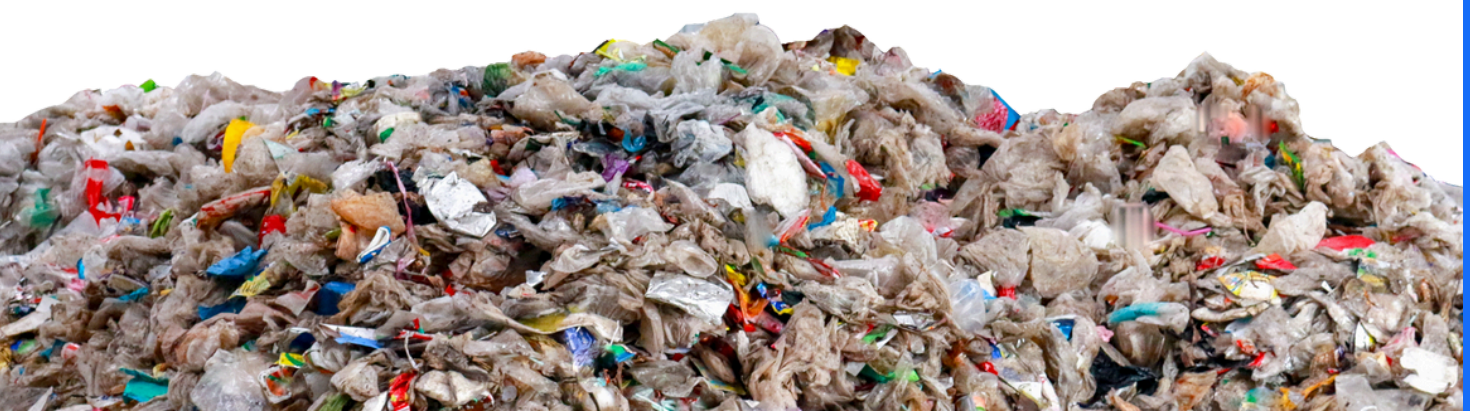
Across the Middle East and North Africa (MENA), plastic pollution has become one of the defining environmental challenges, cutting across ecological, economic and social dimensions.

From the Mediterranean to the Gulf, plastics now contaminate rivers, coastlines, and deserts, threatening biodiversity and community livelihoods. However, the problem transcends waste accumulation; it is embedded in the structure of production and consumption itself. This means that surface-level approaches to addressing the issues of plastic pollution and waste mismanagement generally, which are often centred around recycling or waste management, have proven to be inadequate for the scale and complexity of the problem.

Plastic pollution unfolds across multiple stages of a complex lifecycle, from production and consumption to disposal, leakage and eventual environmental degradation. Each phase presents distinct pressures as well as opportunities for intervention. At the beginning of the cycle, production, packaging and product design influence how much waste will be created and how easily it can be reused or replaced. Once products enter day-to-day use, household practices, local markets, and community behaviours determine whether materials are reused, repurposed, or simply thrown away. At the end of the cycle, the availability and quality of the collection, sorting, recycling, and recovery systems decide how much plastic becomes pollution in the environment.

While governments across the region have introduced policies to curb plastic use and strengthen waste management, implementation often unfolds unevenly. In many countries, the expansion of formal systems has not kept pace with rising consumption or the complexity of plastic flows, leaving gaps in collection and upcycling that local actors can step in to address. Informal recyclers, coalitions, women's cooperatives, and small enterprises are all actors that often operate closer to the problem. Their contributions, which are not always reflected in national planning and discourse, demonstrate a wide range of innovations in prevention, collection, reuse, and community mobilisation. Exploring these initiatives provides an opportunity to understand how circular economy principles take shape on the ground, revealing adaptive models that connect environmental goals with livelihoods, gender inclusion, and community strengthening.

This report explores, compiles, and analyses local, community-born and community-led solutions to the plastic pollution crisis in MENA, particularly from Egypt, Lebanon, Morocco, Tunisia, and Saudi Arabia.



THE SCALE OF PLASTIC POLLUTION IN THE REGION

The MENA region is facing a rapidly escalating plastic pollution crisis; rising urbanisation, expanding consumer economies, and acute water scarcity, which drives dependencies on bottled water, intersect with inadequate waste management systems to create both a significant source of plastic pollution and a population highly vulnerable to its consequences.

The intensity of these problems is evident from coastal areas to urban centres, where rising consumption and mismanaged waste increasingly threaten both ecosystems and livelihoods. The Mediterranean Sea is among the world's most plastic-polluted seas. Holding just 1% of the global water, it contains roughly 7% of the world's microplastics.[1] Coastal populations produce some of the highest per capita municipal waste rates globally, ranging from 208 to 760 kilograms per person per year.[2] With population growth and urban expansion, total waste in the MENA region is projected to nearly double from 129 million tons today to 255 million tons by 2050, intensifying pressure on already strained waste systems.[3]

Environmental Impacts

Plastic pollution poses significant risks to both terrestrial and marine ecosystems. In the Mediterranean, floating debris reaches densities of 64 million particles per square kilometre in some areas.[4] At the same time, more than one million tonnes of plastic have settled in sediments, where it can persist for centuries.[5] Marine life, including fish, turtles, seabirds, and mammals, suffers from entanglement, ingestion, and exposure to toxins.[6] Microplastics and associated chemical contaminants infiltrate food chains, posing health risks to humans who depend on seafood.

On land, municipal solid waste is on the rise, with over 50% of waste in MENA ending up in open dumps.[7] This plastic accumulation degrades soil, contaminates freshwater, and undermines agriculture, threatening food security in a region already facing severe water scarcity. Visual pollution and littered landscapes also harm tourism-dependent economies, and deserts and rural areas are increasingly becoming informal dumping grounds.

Economic and Health Costs

Plastic pollution results in substantial economic and human costs. Researchers estimate a loss of 1-5% in marine ecosystem services as a result of plastic pollution, totalling approximately $500 billion to $2.5 trillion per year.[8] Fisheries experience direct costs from damaged gear, lost catches, and cleaning, with annual losses reaching up to 5% of revenue in some sectors.[9]

Public health risks are equally pressing. Individuals may ingest up to 68,000 microplastic particles daily from indoor air, with long-term exposure linked to inflammation, reproductive harm, and chronic diseases.[10] Open burning of waste, a widespread informal practice, releases particulate matter that results in respiratory illnesses and premature deaths.[11] Vulnerable populations, including children, informal waste, pickers, and residents of informal settlements, face the highest exposure to plastic-related hazards, underlining the social inequities inherent in the plastic crisis.[12]

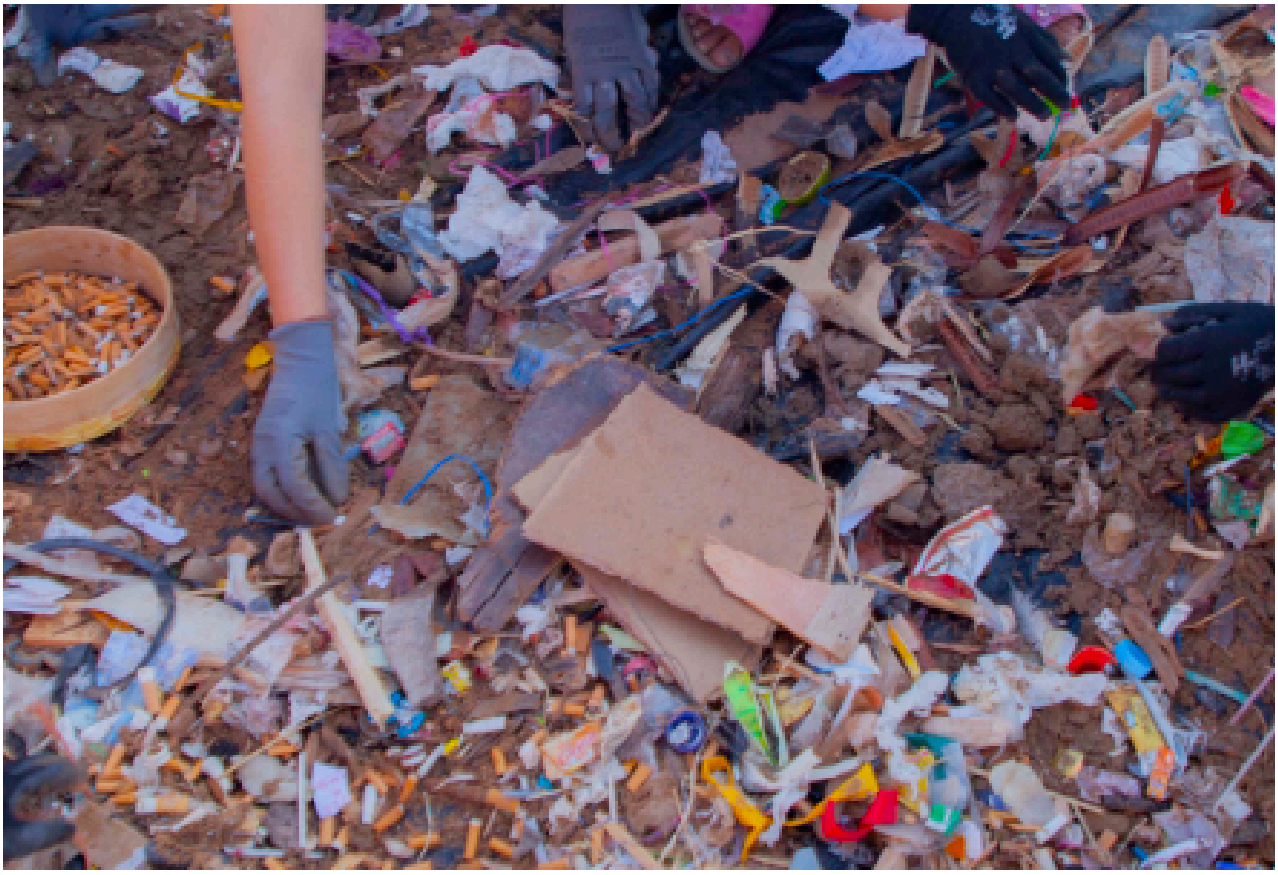


Photo credits: Surfrider Foundation Maroc

Policy and Institutional Context

Governance landscapes across the MENA region significantly influence how countries address the growing issue of plastic pollution. Across the region, infrastructure deficits, including low collection rates, inadequate recycling facilities, and reliance on informal waste sectors, significantly limit effective action.[13] These gaps are further compounded by uneven enforcement of regulations, weak policy coordination across sectors, and limited public awareness initiatives.

Policy frameworks vary widely: some countries, such as Saudi Arabia, have established more institutionalised national-level programmes that integrate plastic waste management into broader sustainability and circular economy strategies.[14] Other countries, including Tunisia, Morocco, Jordan, Lebanon, and Egypt, rely heavily on civil society and private-sector interventions to fill the gaps left by limited government infrastructure.[15] Informal waste sectors also play an important role. In Tunisia, the Barbechas, women who collect plastic bottles, play a critical role in recycling, despite working under precarious conditions and receiving little recognition.[16] Similarly, "El-Zabaleen", Egypt's informal waste collectors, take on a lot of the community recycling work.

ROOTED IN OUR OWN COMMUNITIES: MENA'S SOLUTIONS TO THE PLASTIC CRISIS

Community-led responses to plastic pollution in the MENA region are far from uniform, and this diversity is one of the greatest strengths of the landscape.

The initiatives selected for this report were deliberately chosen to reflect a wide range of models, geographies, and operational approaches, allowing the analysis to capture the many ways in which communities interpret, confront, and adapt to the pressures of plastic waste.

From riverine collection systems to coastal conservation, from advocacy coalitions to youth-led programmes, each initiative shines the light on different entry points from action and change. This variety not only reflects the distinct ecological, social, and economic conditions across the region, but also highlights the multiple pathways through which community-driven action can reinforce national goals and address implementation gaps.

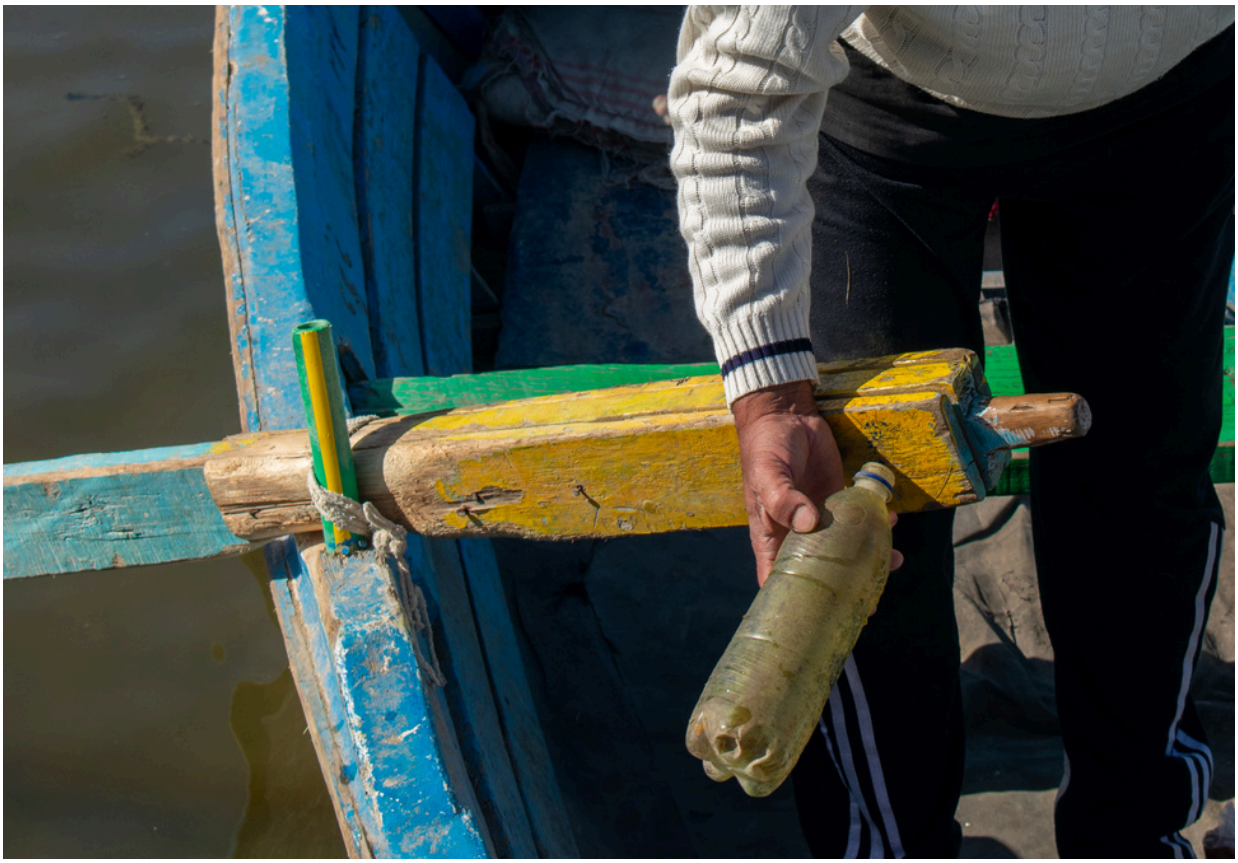


Photo credits: VeryNile

EGYPT

Overview: Plastic Pollution and Waste in Egypt

Egypt sits at the meeting point of two major marine ecosystems and depends heavily on both for trade, fisheries, and tourism, stretching from the Mediterranean in the north to the Red Sea in the east. The country's long coastline, densely populated Nile corridor, and expanding industrial zones make it a regional hub for consumption and production, while aggravating its exposure to pollution and waste pressures. Population growth, now above 110 million, and rapid urbanisation have accelerated material demand, with plastic emerging as one of the most visible symbols of Egypt's modern consumer economy.[17] Plastic is almost always present across nearly every sector, such as packaging for food and beverages, construction materials, textiles, and household goods. Its convenience and affordability have amplified single-use and short-lived products in daily life.

National data suggest that Egypt generates more than 100 million tonnes of waste annually, of which 20 million tonnes is solid waste and around 2-3 million tonnes is plastic.[18] Only 8% of plastic waste is recycled, as of 2023, leaving large quantities discarded and uncollected in open dumps.[19] Much of the leakage occurs through the Nile too, which carries plastic waste downstream to the Mediterranean, making Egypt one of the main contributors of marine litter in the region.[20] Yet, the roots of the problem lie across the entire plastics system; weak incentives for reuse or material substitution, alongside the limited investment in sustainable alternatives, have locked Egypt into a largely linear model of production and disposal. In this context, tackling plastic pollution will require interventions that act across the full plastic lifecycle, from reducing production and redesigning products to promoting reuse and building comprehensive collection systems.

Key National Actors and Entities

Egypt's response to plastic pollution is situated within a broader shift toward integrated waste governance and circular economy planning. The Waste Management Regulatory Authority (WMRA), established under Law 202 of 2020, acts as the central public body for oversight, licensing, and strategy coordination.[21] It sets technical standards, regulates private operators, and works with governorates to align local systems with national targets. The Ministry of Environment complements this with awareness campaigns, pilot projects, and public-private partnerships that focus on prevention and substitution. The national "Reduce It" campaign, launched in 2025, seeks to reduce single-use plastics in retail, tourism, and food packaging, while supporting domestic production of biodegradable alternatives.

At the same time, there is a growing network of Egypt's circular economy programmes; the Circular Economy Project for Plastics, which was launched in 2021, promotes eco-design, alternative materials, and recycling infrastructure, producing national standards for reusable and biodegradable bags and supporting technical assistance to local manufacturers.[22] Parallel EU-backed initiatives such as EU-GREEN, SwitchMed, and the National Solid Waste Management Programme (NSWMP) integrate private-sector engagement, SME support, and industrial policy, with environmental objectives.[23]

Despite this growing institutional landscape, fragmentation persists; overlapping responsibilities among ministries, governorates, and donor-led projects often result in parallel efforts rather than coordinated implementation. Data on plastic flows is partial, and monitoring is uneven between different entities. The informal sector, "El-Zabaleen," the garbage collectors, continues to take on most of the country's recycling work without full formal recognition or access to finance.[24]

Regulations and Governance Frameworks

The Waste Management Law 202 of 2020 is considered to be Egypt's most comprehensive framework for regulating the plastics lifecycle, from production to disposal. It defines integrated waste management, prohibits open dumping and burning, and grants the WMRA authority to license and enforce compliance.[25] Executive regulations issued in 2022 translated these principles into practice, establishing requirements for extended producer responsibility (EPR) and giving the government the power to designate priority product categories.[26] There are also Governorate-level decrees that complement the national framework, notably the Red Sea governorate's ban on single-use plastics in tourism and coastal zones, enforced through fines and awareness campaigns.[27] Enforcement capacity, however, remains uneven: while urban centres such as Cairo and Alexandria have access to organised collection systems, many rural areas lack the means to comply with new licensing and reporting obligations, contributing to the continued prevalence of open dumping as a default disposal method in several governorates.[28]

Beyond waste management, the government is encouraging industrial adaptation through incentives under the Investment Law and Egypt Vision 2030, both of which prioritise green manufacturing and local production of alternatives.[29] Yet the regulatory trajectory still places more weight on end-of-pipe solutions, such as recycling, rather than on the reduction of production and material substitution. In fact, as part of its industrial policy, Egypt committed multi-billion dollar investments[30] in 2025 to expand petrochemical production, for instance a new petrochemical complex in the Suez Canal Authority Zone, which exemplifies how the government continues to prioritise petrochemical production.

Public Attitudes and Behaviours

Perceptions of plastic pollution in Egypt are shaped by the visibility of waste in everyday life, particularly along the Nile and in densely populated urban areas. A recent study highlights a prominent gap between public attitudes and actual behaviour. Strong concern about plastic-associated risks does not automatically translate into meaningful action to reduce plastic use.[31]

Despite the clear gaps between awareness and practice, there is a growing sense of local ownership among segments of the public, reflected in the rise of community-led initiatives that respond to plastic pollution in their immediate environments. Local and grassroots initiatives are reframing plastic pollution from a distant environmental issue into an everyday economic and social concern. Examining such work can provide insights into how civic mobilisation can address policy gaps, influence behavioural norms, and demonstrate scalable pathways toward Egypt's circular economy and waste management ambitions.

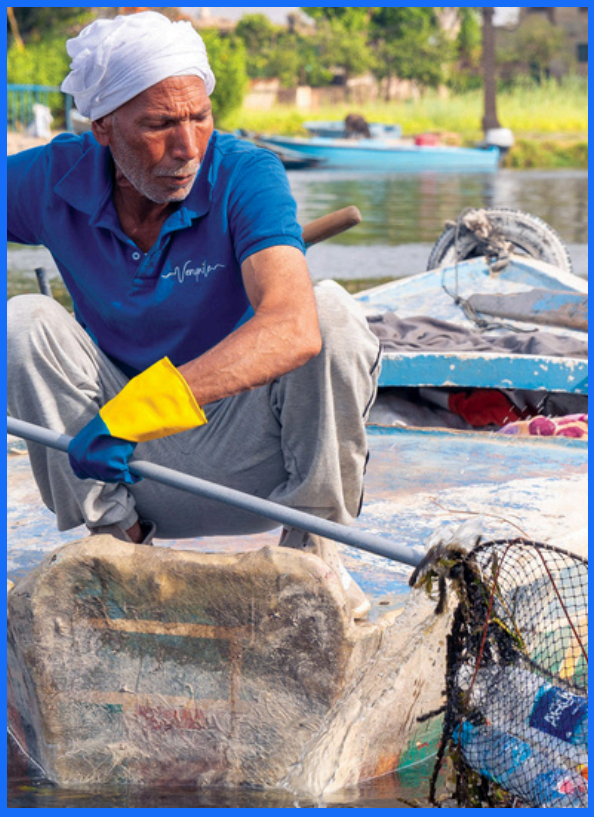


Photo credits: VeryNile

Fisherpeople, Plastic and the Nile: Lessons from VeryNile

As the Nile is a hotspot for plastic waste reaching the Mediterranean, local initiatives along its banks play a crucial role in tackling pollution at its origin. Among them, VeryNile, established in 2018, stands out for combining environmental recovery with community development. VeryNile addresses multiple pressure points along the plastics lifecycle, not just end-of-pipe clean-up. At the collection and recovery stage, they integrate fisherpeople as paid riverine collectors who can reach inlets and riverbanks that municipal systems miss, with the materials transferred to a dedicated hub on Qursaya Island, in Giza, for sorting and compaction. This targets high-leakage fractions such as bottles, containers, and mixed caps, while also confronting low-value films that are typically unrecoverable in city systems.[32]

Model and Approach

1 **Transformation of river clean-ups into a source of employment and livelihood for local communities:** At its core, VeryNile operates several major pathways, comprising an in-house line that presses recovered caps into products, small accessories, with a current design pivot toward fashion hardware, such as buttons, to create a stable demand signal for hard plastics.

Another pathway is the community upcycling led by women artisans who co-design products from upcycled plastic bags, integrating local techniques. These pathways embed behavioural change through experiential learning, including corporate and school visits to the hub in Qursaya Island, as well as a community kitchen that anchors awareness activities in everyday life. This combination increases visibility of riverine leakage, turns recovery into income, and connects community participation to tangible products, which counters the "out of sight" problem often found in aquatic plastics.

2 **Recognition of gendered and traditional knowledge systems in its operations:** VeryNile's model demonstrates how community-based environmental action can thrive when it is grounded in local knowledge systems rather than externally designed interventions. From its inception, it recognised that the fisherpeople's intimate understanding of the Nile's currents and seasonal fluctuations would be a core pillar of a sustainable plastic recovery strategy. This knowledge, accumulated through generations of working on the river, helps identify pollution hotspots, optimise collection routes, and monitor changes in waste composition throughout the year.

Gender inclusion is also a defining element of VeryNile's approach, as it is reflected in how the initiative recognises and builds upon women's traditional knowledge and creative skills. There is an acknowledgement of how women are central to the upcycling and product design processes, where their craftsmanship and sense of aesthetic detail shape how recovered plastics are transformed into marketable goods, which provides returns to both VeryNile and, inherently, the community in Qursaya Island and other governorates.

3 **Making impact visible and credible through data and transparency:** VeryNile measures its impact through tangible environmental outcomes and community participation indicators rather than complex monitoring systems. It tracks the total volume of waste collected, types of materials recovered, and the number of people engaged in clean-ups or awareness activities.[33] Data collection is conducted through direct weighing at sort hubs and manual logging of materials, supported by basic digital tools, namely an app called "Inclusive", which helps ensure transparency and trust with fisherpeople. Waste volumes, recycling outcomes, and community engagement data are periodically shared and validated through VeryNile's campaigns and social media posts.

However, the VeryNile team recognises the need to move toward a more systematic quantitative approach to measuring outcomes. This reflects an awareness that, as the model scales, more rigorous data tracking will be essential for accountability and for attracting institutional partners and funders.

4 **Scaling model across governorates through context-sensitive adaptation:**
VeryNile demonstrates context-sensitive replication, using fisherpeople as the entry point to build trust, then adapting the economic model to local skills and markets. This philosophy has led VeryNile to adopt a gradual, participatory scaling, beginning by mapping community capacities through local civil society, then co-creating upcycling lines that reflect local craft rather than importing a fixed product "menu." Rather than exporting the Cairo experience wholesale, they treat each site as a learning process, in which community feedback continuously informs design and delivery.

Across sites, VeryNile's iterative model has produced qualitative scalability rather than quantitative expansion. Each replication becomes a context-specific ecosystem in which community members take ownership of environmental practices. This makes the initiative resilient to differences in geography and governance, but it also highlights structural limits to scale. Expansion beyond the Nile corridor would require intermediaries who can replicate the participatory process with comparable cultural fluency, and local authorities that are willing to embed such participatory models within broader waste and river management planning.

"[WHEN] WE STARTED WORKING IN ASYUT, WE FIRST EXPLORED WHO WE SHOULD TALK TO, WHICH ENDED UP BEING A LOCAL ORGANISATION [THERE], AND THEN THROUGH THIS ORGANISATION WE CAME ACROSS DIFFERENT GROUPS OF WOMEN. WE STARTED TALKING TO THEM, ASKED THEM WHAT THEIR SKILLS ARE, WHAT THEY WOULD LIKE TO DO WITH IT, ETC."

LEADERSHIP REPRESENTATIVE, VERYNILE

Spotlight: Talli Threading in Asyut

VeryNile embedded its upcycling program within Asyut's local skillset by having women artisans combine recycled plastic with Talli threading, a traditional Egyptian embroidery technique, creating items with both environmental and cultural value.

"We didn't want to bring Cairo's model to Asyut," explained a leadership representative from Very Nile. "We wanted to create something that was truly theirs."

Limitations and Challenges

One of the main institutional challenges VeryNile faces is the absence of a legal framework that recognises social enterprises in Egypt. The current regulatory system classifies entities as either private companies, NGOs, or cooperatives, leaving hybrid initiatives, such as VeryNile, without an appropriate category that reflects their model and activities. Operating as a private enterprise subjects the initiative to commercial taxation and administrative requirements that do not reflect its environmental and social mission. This includes difficulties in obtaining exemptions, access to public tenders, streamlined licensing for waste handling and river operations. The lack of clarity also complicates its ability to apply for specific grants or long-term partnerships.

Despite these constraints, VeryNile has managed to build a cooperative working relationship with government stakeholders, such as the Ministry of Environment, which was formalised through an

agreement that facilitates cleanup and awareness activities, enabling it to operate openly and contribute to national environmental ambitions, including joint public cleanups and awareness events. VeryNile's accomplishment in navigating this system does not negate the existence of a deeper structural issue: the absence of an enabling policy environment for Egypt's growing ecosystem of social and green enterprises. This means that without regulatory recognition or incentives, initiatives like VeryNile will continue to face administrative burdens that limit their potential to scale and embed themselves within Egypt's broader circular economy efforts.

RECAP

VeryNile is a social initiative launched in 2018 under the environmental platform Bassita, with a mission to remove plastic waste from the Nile and transform it into a social and economic opportunity.

This initiative links environmental conservation with livelihood creation by working with fisherpeople as river collectors and engaging women artisans in upcycling and product design. Through cleanup campaigns, awareness activities, and partnerships with the Ministry of Environment, VeryNile has built a strong community base that connects local communities with collective environmental action.

The VeryNile team is also currently working toward developing a more systematic Monitoring, Evaluation, Accountability, and Learning (MEAL) framework to strengthen data reliability and policy visibility. VeryNile's model demonstrates how environmental recovery, gender inclusion, traditional knowledge systems and innovation can converge to create measurable and inclusive impact at the local level.

How can this initiative be scaled and replicated?

VeryNile's scalability lies in its adaptive replication model rather than direct duplication, demonstrating how environmental objectives can be localised by aligning interventions with community skills, traditions, and economic conditions using a bottom-up rather than top-down community engagement.

Initiatives like Very Nile can be a part of the solution by:

- Operating in a system that fosters community-led models.
- Integrating environmental goals with livelihood creation, gender inclusion, and traditional knowledge.
- Prioritising investment in data and monitoring capacity-building.
- Scaling up through adaptive replication and upholding local and traditional knowledge systems during expansion.

LEBANON

Overview: Plastic Pollution and Waste in Lebanon

In the past years, Lebanon has faced a series of overlapping crises — from the financial and economic collapse in 2019, compounded by the dual impact of the COVID-19 pandemic and the devastating Port of Beirut explosion in 2020, to the recent repercussions of the Israeli war in the region, leaving Lebanese communities to cope with the remnants of crises, demolition and grief. Against this backdrop, Lebanon faces a number of pre-existing and continuous environmental crises driven by the open dumping and burning of waste, which releases hazardous pollutants into the air and into the ocean.

Lebanon's coastal lines experience high levels of marine pollution, with 77.7% of marine litter consisting of hard and soft plastics.[34] Whether originating from landfills or open-air dumps, waste continues to find its way into the sea due to mismanagement, a lack of proper treatment, and accidental dumping.[35]

Additionally, Lebanon's Centre for Development and Reconstruction (CDR) reports that 98.7% of waste ends up in landfills, burned, or illegally disposed of, despite Lebanon's waste management facilities utilising only 6% of its operational capacity. This underutilised infrastructure indicates the deeply rooted systemic issues that underlie the enforcement of any long-term strategies and solutions. Weak and centralised governance structures, fragmented and sectarian political systems, the prevalence of corruption, and a lack of coordination have crippled the sector and undermined the introduction or enforcement of any reforms to the sector.[36]

Key National Actors and Entities

The main mandate for Solid Waste Management (SWM) lies with the Ministry of Environment (MoE) at the central level and is meant to be relegated to local authorities and municipalities at the regional level.[37] Yet, efforts to decentralise have been fraught due to the intertwined role of the private sector with central government, specifically in Beirut and Mount Lebanon. This centralisation in urban cities coupled with crisis-driven limited public funding, has led to the deterioration of SWM public services in remaining Lebanese districts with municipalities grappling with limited resources and technical expertise to adequately manage their waste.[38,39]

Underlying this network of actors, most crucially, lie informal waste actors, including street sweepers, garbage truck drivers, the garbage collectors, and informal networks of waste pickers in search of recyclables.[40] These informal actors, while invisible, play a critical role in underground networks that move materials and connect them to recycling facilities.

Regulations and Governance Frameworks

In response to the 2015 crisis and pressing demands from a frustrated civil society, the Government of Lebanon introduced Law No. 80/2018 on Integrated Solid Waste Management (ISWM), establishing the main legal framework to promote basic waste management principles (e.g., the 3Rs: Reduce, Reuse, Recycle and the polluter-pays principle). While successfully passed, many of the needed decrees and decisions to enforce this law have either not been drafted, endorsed, or implemented.

Several legislative decrees, MoE decisions, and Memos have been introduced. For instance, the legislative decree 7975/1931 sought to ban dumping around residential areas, placing the responsibility of collection on municipalities.

In an attempt to introduce a holistic strategy for the country, Lebanon launched a Comprehensive National Waste Treatment Strategy in 2024 based on the 3Rs principles.[41] This strategy came after successive attempts at ISWM, in 2006, 2010, 2014, 2015 and 2019 that yielded no outcomes. Such legislative efforts and strategies represent a step in the right direction. However, in the absence of well-designed, economy- and ecology-compatible solutions that are effectively enforced, much work remains to be done.

Public Attitudes and Behaviours

Communities in Lebanon bear the brunt of a system that has failed to address waste and pollution. People are reminded and confronted by the consequences of waste in their daily lives; when walking down streets, living near overflowing landfills, or bearing the smoke and spillage from incinerators and open-air dumps. Lebanese society experiences plastic pollution in many forms, notably through microplastics present in seafood consumed due to marine Lebanese plastic pollution.[42] In terms of waste produced from plastic use, it has witnessed an increase from 10-13% to 11-14% of total waste generated, suggesting a shift of public behaviors toward more plastic use for affordability and availability.[43]

The holistic solution to waste management cuts across the entire value chain and starts at the source, with awareness. For instance, a study conducted in several rural households in Lebanon showed a positive attitude toward reducing, recycling, recovering, and reusing.[44] Despite this positive association, fewhouseholds reported sorting their waste, expressing their motivation driven by concerns for the environment and the economy. Remaining non-sorting households expressed that an absence of a societal norm did not incentivise them, noting that "nobody is doing it in the village". Others found the absence of a system to collect recyclables, and the time required to separate and drop off garbage, demotivated them.

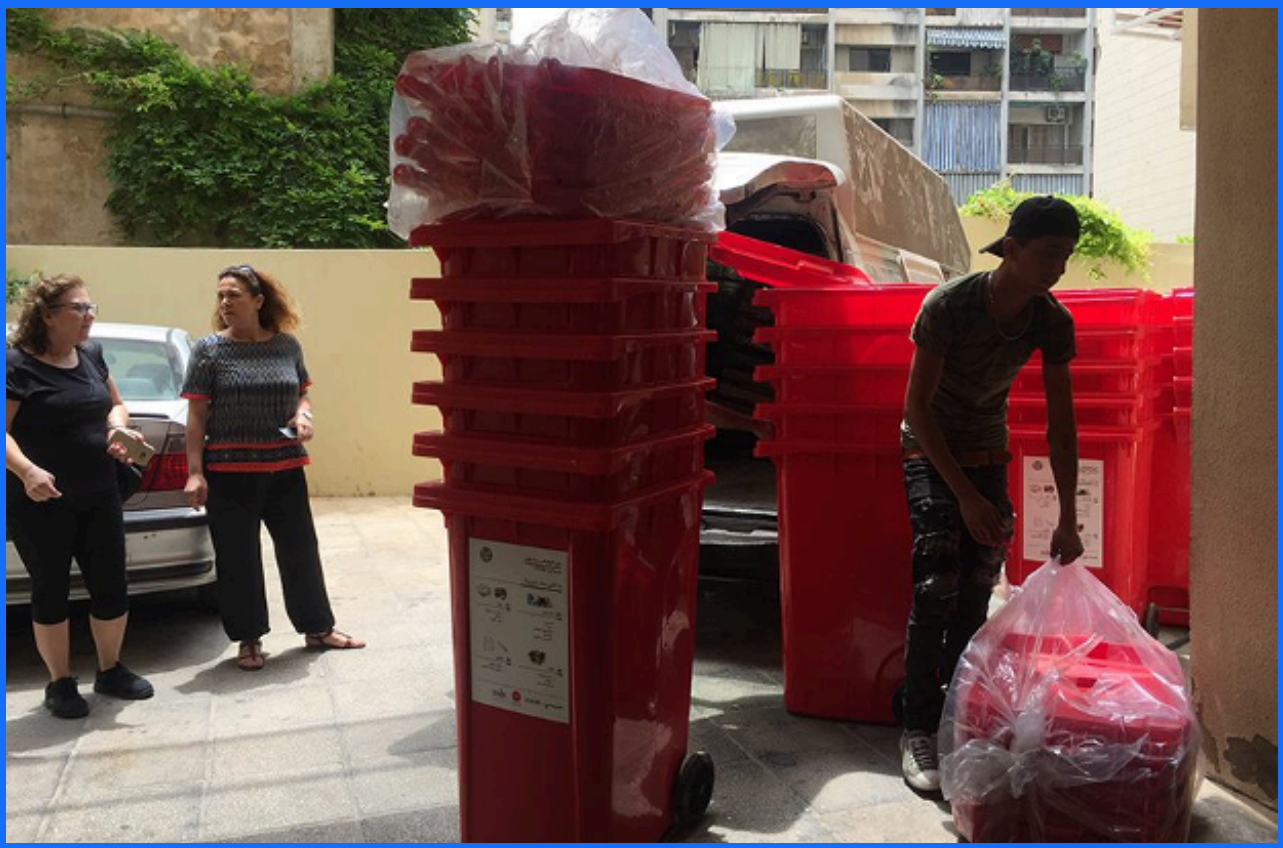


Photo credits: Waste Management Coalition

From Crisis to Collective Action: The Lebanon Waste Management Coalition

The breaking point of the 2015 waste crisis pushed Lebanese civil society activists and local communities alike to take to the streets and demand their government to step up. In response to the government's failure to address the waste crisis, the Waste Management Coalition (WMC) was born. WMC is a coalition of civil society actors, experts and NGOs who joined forces to address the government's mismanagement of the waste sector and lobby and advocate for a comprehensive integrated waste management strategy applying circular economy principles.

Founded in 2017, WMC is a specialised, sector-specific group, consisting of independent environmental, economic and legal experts and organisations, that has transformed the community's frustrations into an organised, evidence-based movement. This case study is a testament to how civil society can react, regroup, and remobilise in the emergence of political opportunity and unmet societal need.

"THERE WAS A PRESSING NEED AT THE TIME; IT WAS A WASTE CRISIS, LITTER ON THE STREETS, PEOPLE WERE BURNING THE TRASH IN RESIDENTIAL AREAS, COMMUNITIES WERE BREATHING IN TOXINS, IT WAS A DISASTROUS AND DANGEROUS SITUATION, AND THEY [LEBANESE GOVERNMENT] WERE PLANNING MULTI-MILLION INCINERATORS WHILE THE COUNTRY WAS GOING BROKE. IT DIDN'T MAKE ANY SENSE; WE COULD NO LONGER AFFORD TO REMAIN SILENT ABOUT IT."

STEERING COMMITTEE AND FOUNDING MEMBER, THE WASTE MANAGEMENT COALITION

Model and Approach

The WMC embeds top-down and bottom-up approaches to engage local communities, civil society, the private sector, municipalities, central government, and the international community. This two-pronged approach is achieved by influencing politicians and local governments, and achieving public buy-in from local communities. WMC has adopted several strategies that enabled them to progress their mission:

1 **Establishing an independent and impartial coalition of civil society actors:**
To maintain impartiality, independence, and commitment to their mission, WMC has a fully horizontal structure. With no single leader to the organisation, the Coalition is led by a steering committee (SC) consisting of founding members and representative organisations, along with a General Assembly (GA) of Member Organisations. This structure ensures a decentralised decision-making process that shields the Coalition from attempts at corruption, bribery, or misalignment with leadership decisions. Furthermore, the SC must collectively decide which organisations or individuals can join the Coalition. This is especially relevant for their engagement with the private sector; ensuring that no corporation abuses the Coalition as a means for potential greenwashing.

Finally, the initiative's funding relies mainly on membership fees, crowdfunding, and fundraising events. All members of the SC are volunteers and donate their time and expertise to the initiative. To this end, no donations are accepted from political parties, foreign institutions, or members of the parliament or government.

2 **Exploring legal, technical and oversight pathways to provide alternative solutions:**
WMC's advocacy approach centers on identifying critical entry points for change, realizing that successful civil society movements must transition from a state of objection to one of proposing alternative solutions. This recognition led WMC to adopt an evidence-based strategy that clearly articulates their demands and solutions. They build this case using legal, technical, and economic expertise, which they translate into action through litigation (e.g., appeals to central and local government) and oversight. The solutions WMC proposes target the whole waste value chain to achieve a circular economy, including banning single-use plastics, encouraging sorting at source, and promoting policies like Extended Producer Responsibility (EPR)[45] for importers.

3 **Engaging a multi-stakeholder network along the waste value chain:**
For an advocacy and lobbying body such as WMC, the network and connections it has ultimately defines its influence and success. Beyond its Member Organisations, the Coalition maintains a broad base of stakeholders including INGOs, Municipalities, Parliament members, Ministries, Syndicates, media and marketing companies, journalists and influencers. Engaging these diverse actors takes shape through open letters, technical meetings, public dialogues, and bilateral informal conversations.

4 **Mobilising and the general public:**
WMC leverages multi-media platforms and channels, convenes protests and demonstrations, exposes government mismanagement through disseminating videos and evidence on social media, hosts online campaigns, participates in TV interviews, holds press conferences and public debates on pressing issues related to the sector. It also leverages creative outlets, such as festivals, art exhibitions, films, and documentaries.

5 **Engaging the local community through awareness raising:**
To achieve buy-in from the community, WMC ensures holistic approaches by engaging with and centring local communities in their efforts through a series of activities engaging households and neighbourhoods such as pilot projects to sort at source, awareness campaigns, informational sessions about household level sorting and composting; and SWM planning workshops for municipalities showcasing success stories from other municipalities.

Limitations and Challenges

First, scarcity of human resources is the Coalition's most significant constraint. WMC relies on voluntary contributions and crowdfunding to maintain its impartiality and independence from political or major donor funding. However, this means the Coalition's momentum is often hampered by the availability of volunteers or dependence on external triggers (like a crisis or new law). This internal resource challenge is compounded by external factors: government mismanagement, marked by its reliance on foreign experts, non-expert journalists, and personal interests, have led to temporary solutions unfit for local context. WMC's advocacy strength relies on its ability to successfully channel diverse local experts (legal, environmental, and economic) to validate and back its proposed solutions.

Second, WMC's initial goal was to cease to exist once its mission was achieved, making external monitoring, reporting, and documentation secondary to its purpose. While Monitoring and Evaluation support was offered, the Coalition emphasized that limited time and resources prevented implementation. This highlights a fundamental conflict for grassroots activists: they are often compelled to invest in donor-focused metrics and reporting to secure funding, forcing them to divert finite resources and energy away from their action-oriented mandate.

"THE COALITION WAS MADE NOT TO STAY... THE GOAL IS TO APPLY PRESSURE TO SOLVE A PROBLEM, AND IF IT IS SOLVED, WE DON'T WANT TO KEEP IT [THE COALITION] GOING. IT ISN'T MEANT TO BE AN INSTITUTION THAT GROWS AND STARTS REPORTING, THAT IS NOT OUR GOAL. OUR GOAL IS TO MAKE A DIFFERENCE."

STEERING COMMITTEE AND FOUNDING MEMBER, THE WASTE MANAGEMENT COALITION

RECAP

The Waste Management Coalition (WMC) is a civil society movement made of technical experts, activists and organisations with a mission to achieve a truly integrated Waste Management sector in Lebanon and to promote a circular economy. Born in response to the 2015 waste management crisis, WMC's advocacy approach centres around identifying critical entry points to influence change by engaging local communities, civil society, the private sector, municipalities, the central government, and the international community.

How can this initiative be scaled and replicated?

WMC's model is a testament to how civil society can react and remobilise in response to unmet societal needs. The success of their top-down and bottom-up strategies focuses on reflection, reassessment, and repositioning. Their decentralised leadership and independent funding notably shield the mission from corruption. This two-pronged approach, influencing politicians while achieving public buy-in, creates holistic advocacy that can be contextually adopted by grassroots groups across the region.

Initiatives like WMC can be a part of the solution by:

- Adopting structures that maintain impartiality and decentralised governance to shield against corruption and conflict.
- Working with local cross-disciplinary experts to create holistic, scientific, evidence-based strategies that are difficult for policymakers to refute.
- Adopting a model that moves from solely protest-based objections to becoming a proposing body that offers plausible, feasible alternative solutions.
- Leveraging international and regional activist networks to provide lessons, strategies, and inspiration to local activists.

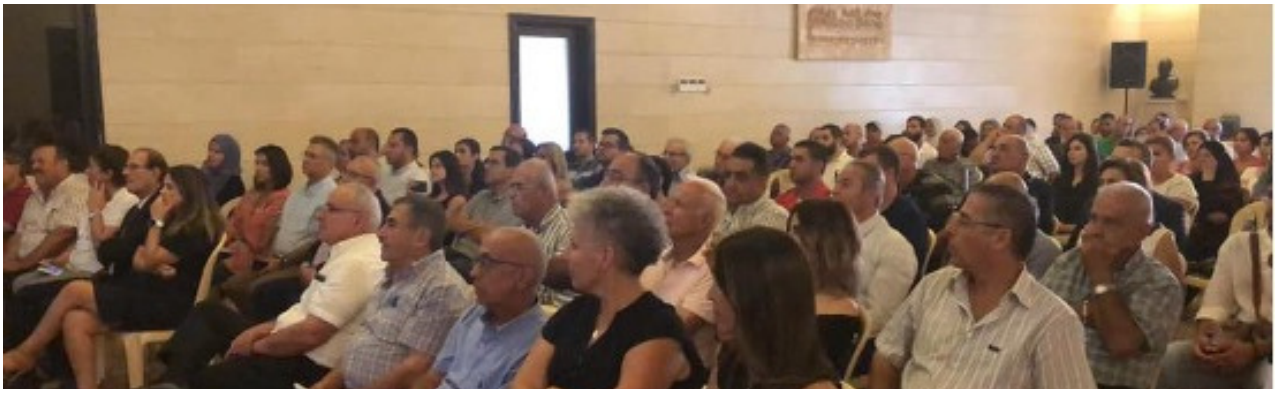


Photo credits: Waste Management Coalition

SAUDI ARABIA

Overview: Plastic Pollution and Waste in KSA

KSA confronts a mounting waste management crisis driven by rapid industrialisation, high population growth, and urbanisation. KSA generates over 110 million tons of waste annually, and in 2021, environmental degradation caused by solid waste alone was estimated at $1.3 billion.[46] Geographic concentration further exacerbates the challenge: almost half of the total waste originates from just three major cities: 21% from Riyadh, 14% from Jeddah, and 8% from Dammam.[47] Per capita waste generation is 1.7 kilograms per day, resulting in 7 million tons of plastic waste produced annually.[48]

The waste landscape in KSA is stark: most landfills are nearing capacity, Saudis use single-use plastics heavily, and recycling remains limited.[49] In 2020, KSA recycled only 5% of its total waste.[50] The majority of municipal waste is disposed of in landfills, which are able to limit the harmful effects of untreated waste, creating long-term environmental challenges.[51] This reliance on landfilling, at an average cost of $1.87 per ton, is both an economic burden and a missed opportunity for resource recovery.[52]

Key National Actors and Entities

The Ministry of Environment, Water and Agriculture (MEWA) oversees environmental, water, and agricultural policy implementation. The National Centre for Waste Management (MWAN), established upon endorsement of the National Environment Strategy in 2018, leads on waste governance, including plastic regulations and waste management policies.[53] Complementing these regulatory bodies is the Saudi Investment Recycling Company (SIRC), founded in 2017 under the Public Investment Fund, which has become the region's largest industrial waste management firm and is responsible for developing and operating facilities across all major waste streams.[54] Together, these institutions form the backbone of Saudi Arabia's national circularity agenda and shape the enabling environment in which community and private-sector initiatives operate.

Regulations and Governance Frameworks

KSA's waste management transformation is largely driven by Vision 2030 and the Saudi Green Initiative (SGI), which establishes targets for transitioning to a circular economy.[55] As part of this, KSA has committed to achieving a 94% landfill diversion rate by 2035, with an interim target of 50% diversion by 2030.[56] The transformation is expected to contribute SAR 120 billion ($32 billion USD) to GDP annually by 2035 and create over 100,000 jobs.[57] However, there is a gap between announced targets and measurable progress, which raises questions about their feasibility and highlights a broader implementation challenge.[58]

In 2021, Saudi Arabia enacted a comprehensive Waste Management Law (Royal Decree No. M/3) to regulate transport, sorting, storage, import, export, and disposal of waste.[59] The law, which took effect in November 2021 establishes clear objectives and responsibilities across the waste value chain.[60] The law mandates that all concerned parties recycle and dispose of waste safely to reduce environmental impact. It also requires waste producers to conserve natural resources, reuse products, reduce waste, and separate materials for recycling. Notably, this regulatory framework focuses primarily on downstream waste management, placing the burden of

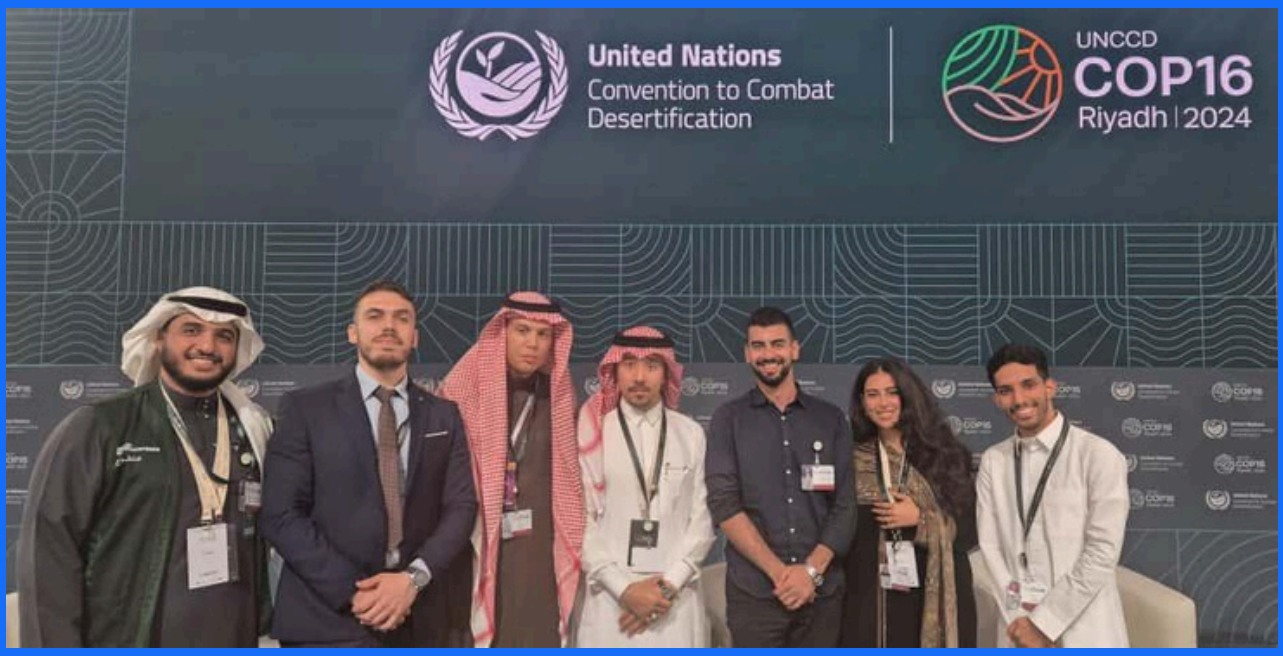


Photo credits: Pristine

recycling and disposal on consumers and waste producers, while lacking equivalent upstream regulations on plastic producers regarding reduction of virgin plastic production. This gap reflects a broader pattern in Vision 2030 and related initiatives, which emphasise end-of-life waste diversion rather than addressing plastic production at its source.

Penalties for violations are severe: the law prescribes a maximum jail term of 10 years and fines up to SAR 30 million (around $8 million USD) for storing, incinerating, treating, or disposing of waste in ways that threaten public health or the environment.[61] Since December 2017, plastic products and packaging materials less than 250 microns thick must be biodegradable.[62] However, critics argue that biodegradable plastics represent a false solution: they often require specific industrial composting conditions which may not be available in KSA's waste infrastructure and fragment into microplastics under typical environmental conditions.[63]

Public Attitudes and Behaviours

Despite growing environmental awareness, a significant gap exists between attitudes and attitudes and behaviours toward recycling in Saudi Arabia. While 74% of young Saudi residents consider recycling "very important", only 45% of 18-24 year olds recycle waste "sometimes", and 44% "do not recycle at all".[64] The primary barrier for 50% of respondents is the lack of recycling containers near their homes, while 15% find sorting materials "difficult", and 12% "do not consider recycling important".

Experts emphasise that there is a need to balance instilling a culture of household recycling and responsible consumption in the Saudi population with broader structural shifts.[65] The abundance of economically attractive plastics in the Gulf fundamentally undermines the financial viability of recycling ventures, as virgin plastic remains far cheaper to manufacture than recycled alternatives, creating little incentive for private sector investment in recycling systems.[66]

As a result, progress will require both stronger upstream policy and regulatory measures to reduce plastic production and enhance producer responsibility, alongside initiatives that raise public awareness of plastic's environmental impacts and support more sustainable consumer practices.

Pristine: A Fresh Wave of Youth Awareness

Pristine is a not-for-profit organisation which emerged in 2022 to address a gap in KSA's environmental landscape: the disconnect between environmental awareness and sustained behavioural change. Pristine identified a tendency for environmental engagement to remain abstract, sporadic, and disconnected from daily life, resulting in symbolic actions that generate temporary enthusiasm but are unable to produce lasting societal transformation.

Pristine's mission centres on reprogramming how individuals, particularly youth, integrate environmental considerations into their everyday lives. The organisation focuses on influencing daily behaviours around commuting, eating, and travel, transforming eco-friendly choices from conscious decisions into automatic habits. Through programs including plogging, beach clean-ups, and community park initiatives, Pristine creates accessible entry points into environmental engagement. The organisation's approach is built on making sustainable behaviours easy, fun, and fast, recognising that lasting change requires environmental action to feel natural rather than burdensome.

Model and Approach

The WMC embeds both top-down and bottom-up approaches to engage local communities, civil society, the private sector, municipalities, the central government, and the international community. This two-pronged approach is achieved by influencing politicians and local governments, and achieving public buy-in from local communities. WMC has adopted several strategies that enabled them to progress their mission:

1 **Making activities fun through sports, art, or other themes that motivate youth to take part in environmental action:**
Pristine's model is founded on the principle that environmental activities must be enjoyable to motivate initial participation and sustain long-term engagement, particularly among youth. The organisation's signature programme, plogging, merges jogging with litter collection and has proven highly successful at engaging young volunteers.

In addition to plogging, Pristine runs Project Blue, a series of quarterly-themed beach clean-ups that spotlight different marine and coastal species at each event. The organisation also coordinates Saudi Arabia's World Clean-up Day, mobilising large groups to clean beaches and parks and to recycle or repurpose collected waste into art. Through these initiatives, Pristine aims to create a culture where environmental action becomes a natural, automatic part of daily life for Saudi youth.

2 **Building sustainable habits requires repeated engagement rather than one-off activities:**
Pristine's model centres on reprogramming behaviours by creating sustainable habits rather than one-off activities. Recognising that behaviour change requires consistent reinforcement, Pristine is developing several initiatives to promote individual action between organised events. A gamification app under development will feature leaderboards, point systems, and rewards, such as discounts on services, to encourage ongoing participation and map nearby cleanup events.

Additionally, the Beach Champions programme trains volunteers, primarily from universities and schools, in "Beach Cleanup 101", equipping them to organise independent clean-ups and maintain beaches between Pristine's major events. These initiatives aim to enable spontaneous individual action without requiring extensive organisational infrastructure.

3 **Government cooperation is a major contributor:**
Pristine operates within a supportive governmental framework which significantly facilitated the permitting process, which was once a significant barrier. Municipalities, in recent years, have recognised the value of legitimate organisations providing environmental services.

4 **Strong global networks, investment in technology and infrastructure, and capacity building enable model replication and scaling:**
Pristine's engagement with global and regional networks enables the organisation to learn from other clean-up initiatives, share successes and challenges, and continually improve its model. Its involvement with Let's Do It World[67], a global movement mobilising people for local, national, and regional clean-ups, positions Pristine within a community of knowledge sharers.

The Beach Champions programme, in particular, is highly scalable: by training motivated volunteers to lead independent clean-ups, impact can grow exponentially without a corresponding increase in organisational requirements. Regional organisations in Kuwait and Bahrain already operate similar models, highlighting the approach's broader applicability across the Gulf. Nonetheless, successful replication would require careful adaptation to local circumstances, including cultural attitudes toward plastic consumption, governmental support structures, and available funding mechanisms.

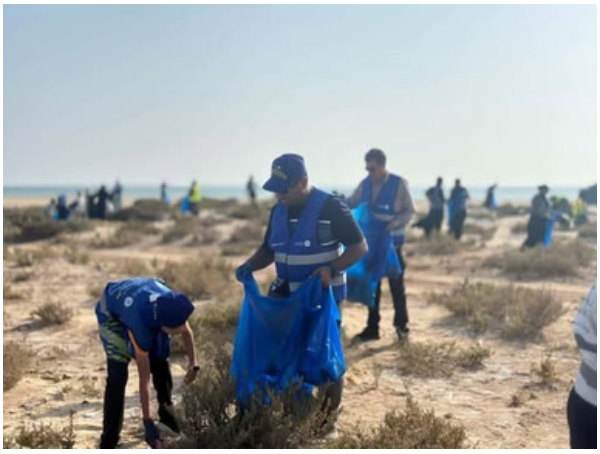


Photo credits: Pristine

Limitations and Challenges

First, Pristine faces challenges securing consistent funding, as the organisation is highly reliant on corporate social responsibility (CSR) budgets that typically deplete by year-end. This seasonal cycle creates planning difficulties and limits their ability to maintain consistent programming year-round. As a relatively young NGO, formalised only in 2022, they have not yet established diverse funding streams or endowments to provide financial stability and enable longer-term strategic planning.

Second, Pristine facing data collection and impact measurement challenges. While the programme includes systems for tracking the type and volume collected, they acknowledge room for improvement in monitoring and evaluation systems. Current methods, counting bags, using tally counters, and occasional weighing, are prone to human error and may produce inconsistent estimates.

Third, Pristine faces a limited scope within broader systemic constraints. Operating within KSA's petrochemical-dependent economy, Pristine's downstream interventions cannot address upstream production drivers of plastic pollution. Pristine has to work within a system where single-use plastic is cheaper than recycled alternatives and remains widely accessible to consumers and businesses.

RECAP

Pristine highlights a model that addresses the gap between environmental awareness and sustained action in KSA. Its strengths lie in making environmental activities enjoyable and accessible through plogging, themed beach cleanups, and gamification, while building sustainable habits through repeated engagement rather than one-off events.

How can this initiative be scaled and replicated?

To successfully replicate and scale this model, organisations must learn from Pristines core strengths and address its limitations. The approach of making environmental actions "easy, fun, and fast" demonstrates strong scalability, as evidenced by similar programmes in Kuwait and Bahrain. However, successful replication requires critical adaptations, including developing diversified funding streams (beyond corporate seasonal budgets) and strengthening monitoring systems using user-friendly technology (like mobile apps) to ensure robust data collection without sacrificing participant engagement.

Initiatives like Pristine can be a part of the solution by:

- Making environmental action enjoyable, by framing activities as fun, social experiences.
- Leveraging the habit-formation approach by designing programs that facilitate spontaneous individual action between organised events through the establishment of infrastructure and trained volunteers.
- Leveraging social media for youth engagement by utilising platforms to promote events, celebrate participant contributions, and sustain engagement between physical activities.

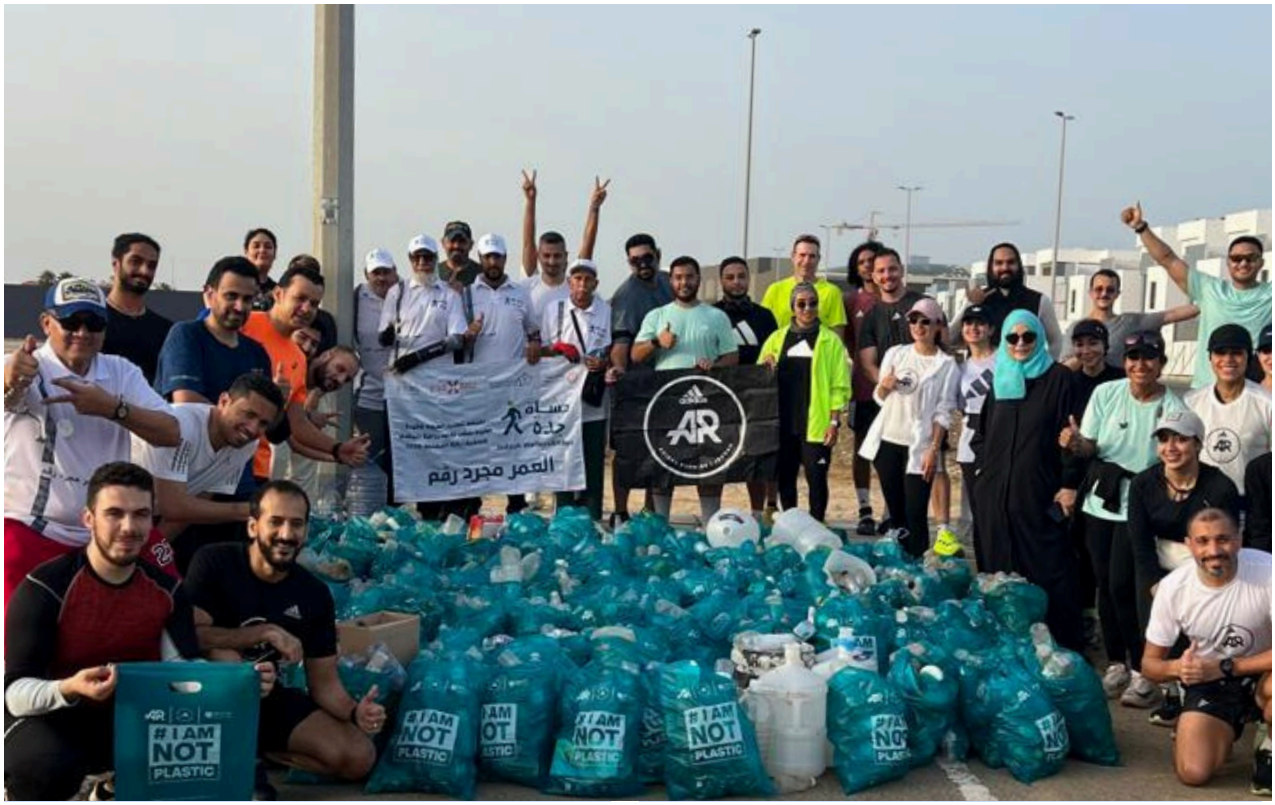


Photo credits: Pristine

MOROCCO

Overview: Plastic Pollution and Waste in Morocco

The Moroccan coastlines span more than 3,500 km, bordering both the Mediterranean Sea (512 km) and the Atlantic Ocean (roughly 3000 km). Biodiversity-rich, these coastlines are subject to considerable demographic pressure and intense economic activity, including from the tourism, fishing, agriculture, aquaculture and maritime shipping industries.

Over the years, the Moroccan population has experienced substantial growth, skyrocketing from 12.33 million to 38.08 million between 1960 and 2024.[68] With this burgeoning coastal population, the country's blue sectors have seen significant development, the tourism and fishing industries collectively employ over a million Moroccans,[69] and tourism contributed to approximately 7% of the GDP in 2024.[70] Against this backdrop, the country's coastlines have grown particularly vulnerable to plastic pollution, as 75,000 metric tons of plastic waste leak into the marine environment each year. Recent surveys further indicate an average of 730 litter items per 100 meters on Moroccan beaches.[71]

Morocco is also the 10th-largest plastic producer in Africa, with approximately 570,000 metric tons of plastic generated each year.[72] Only 8% of this plastic is recycled, while the rest ends up in landfills or the natural environment, particularly in waterways and oceans.[73] Moroccan plastic exports are projected to hit approximately $298 million by 2028, up from around $251 million in 2023. Since 1998, the demand for plastics in the country has grown at an average yearly rate of 2.4%.[74] Annually, Morocco uses over 26 billion plastic bags (approximately 800 bags per inhabitant).[75]

Beyond plastic consumption, Morocco is also a leading importer of foreign waste, particularly from the European Union (EU).[76] In 2022, the Moroccan government explained that it imported only useful waste, often presented as helpful to countries to offset crude material shortages within emerging markets. However, studies suggest the opposite, as imported waste often ends up being incinerated or disposed of illegally in host countries, which many consider amounts to a new form of waste colonialism.[77]

Key National Actors and Entities

The Ministry of Energy Transition and Sustainable Development partnered with the World Bank in 2022 to develop the LISP Strategy (from the French Littoral Sans Plastique, meaning plastic-free coastline). This multi-stakeholder initiative involves improving waste management systems for both land-based and marine sources and achieving meaningful progress towards the circular regenerative use of plastics. The National Plastics Committee, a government body which includes representatives from all relevant sectors, serves as an implementation mechanism for the initiative. It operates within a larger ecosystem of initiatives, including the COVAD (Coalition for Waste Valorisation) which includes private sector, civil society, government bodies, with EU support.

Photo credits: Surfrider Foundation Maroc

The Moroccan Federation of Plastic (FMP) is an association of private sector actors created in 2010 to defend the interests of the Moroccan plastics industry. It acts as a spokesperson to national and international structures and supervisory authorities.

Informal waste workers, bouara (plural for bouar, in Darija) or chiffoniers (in French), play an essential role in Morocco's urban waste management and plastics value chains, currently accounting for 90% of plastic recycling activities.[78] They are waste collectors, sorters, semi-wholesalers, recyclers, and transporters. Despite their valuable contributions and the tiring work, often conducted under precarious conditions, they face significant social and economic marginalisation and stigma due to the perceived "uncleanliness" of their activities.[79] The ambitious transition towards a zero plastic waste economy will depend on the better integration of informal workers, which the government has realised, aiming to formalise 50% of waste picker roles by 2030.[80]

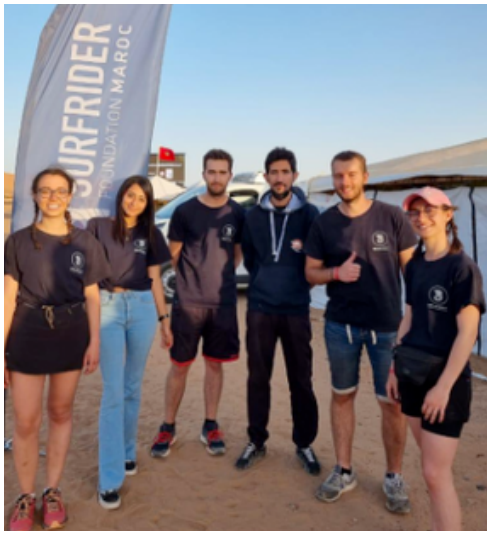
Regulations and Governance Frameworks

The government of Morocco has long acknowledged its plastic waste challenges, making a series of commitments to combat plastic and other related waste, as well as all forms of marine pollution. This includes diverse strategies, plans and programmes, as well as signed agreements, protocols and conventions relating to marine pollution. The National Strategy for Waste Reduction and Recovery (SNRVD), a 2019 framework for sustainable waste management, aims to achieve a 70% plastic recycling rate (up from 25% in 2015). In 2016, Morocco signed the Declaration of Intent of the International Coalition for the Reduction of Plastic Waste Pollution, an initiative launched during COP 22 in Marrakesh. Notably, this resulted in the famous "Zero Mika" law (or Law n. 77-15), a pioneering law prohibiting the production, import, sale, and distribution of single-use plastic bags. This law constituted one of the first comprehensive plastic bag bans in Africa. Yet, significant hurdles have limited the impact of the Zero Mika law, including its hasty implementation, poor consultation with manufacturers, and the proliferation of illegal plastic bag production.[81] The initiative has succeeded in curbing the use of virgin bags, but more of the problem persists due to the informal economy and the continued availability of prohibited plastics. Other notable provisions include the 2015 Law n. 81-12, supporting the protection and preservation of the country's coastal areas, and the country's first ecotax, issued in 2014, and applying a 1.5% ad valorem tax on plastic sales, manufacturing, and imports.

Public Attitudes and Behaviours

In 2023, a study surveyed over 1,000 Moroccans across six regions, including rural and urban areas of Agadir, Casablanca, Fes, Marrakesh, Rabat and Tangiers. Results revealed that citizens' concern about plastic pollution is higher than for climate change. 94% of respondents consider the proper disposal of plastic waste as important, and 70% strongly agree on the need for effective plastic waste management. Findings also revealed a positive public attitude to the role of waste pickers, alongside concern for their safety and livelihoods.[82]

Furthermore, survey results showed that 75% of participants regularly repair broken items, and 94% are willing to separate plastics from general waste. In fact, sustainable practices like the repair and reuse of materials are deeply embedded in Moroccan tradition and culture, particularly in handicrafts: boucherouite rugs, made of recycled material such as plastic, cotton, nylon, wool, and synthetic fibres, provide a great example. The word literally translates to "the one made of a piece of cloth," in Tamazight and refers to rugs made from hundreds of cloth scraps, using both flat-weave and knotting techniques. This practice dates to the middle of the 20th century, when boucherouite rugs were originally handwoven by Imazighen families in Atlas Mountains villages around Beni Mellal.



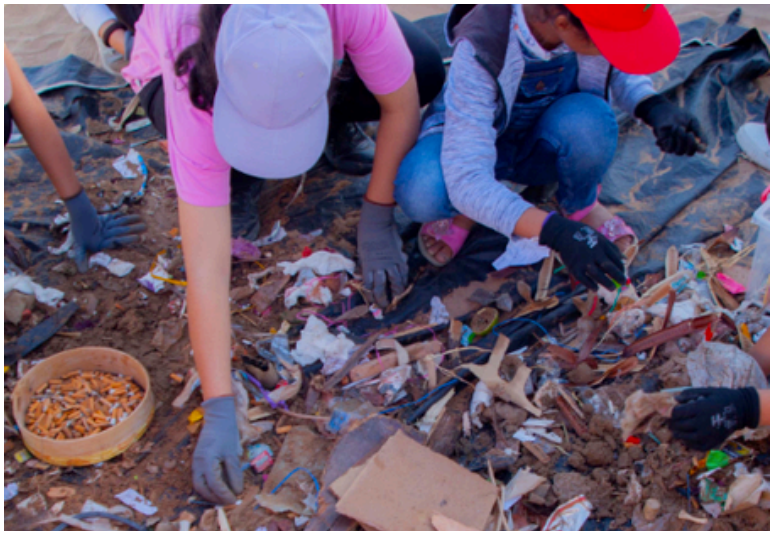


Photo credits: Surfrider Foundation Maroc

Surfrider Maroc: Guardians of Morocco's Coastline

The Surfrider Foundation Maroc (SFM) initiative started in 2010 to address coastal pollution and marine degradation along Morocco's shores. Founded by a young Moroccan surfer in the coastal city of Agadir, the organisation is affiliated with Surfrider Foundation Europe and a member of the international Surfrider Foundation network. With physical presence in Agadir and Essaouira, the organisation operates across the Moroccan coastline, with a clear focus on tackling ocean and plastic pollution. Its activities are divided across the following thematic areas: education, protection and information.

The Surfrider Foundation was launched in 1984 in Malibu, California, by a handful of surfers to advocate against various threats to their local surf break, later expanding into an international network of NGOs working to protect and preserve the world's oceans, waves and beaches. SFM was the first local branch of the Surfrider Foundation to be established on the African continent and in the MENA region. Over time, the organisation expanded from beach clean-ups into diverse activities, including school awareness programs, business training, local education projects, coastal enhancement initiatives, and sustainable waste management, while organising regular "Ocean Initiatives" that connect individual environmental action with broader systemic change. The initiative demonstrates clear scalability through its diverse programming from schools to corporate training.

Model and Approach

1 **Integrated approach combining direct action, awareness-raising and advocacy:**
SFM's mission involves integrated approaches ranging from direct action for environmental protection (e.g. waste collection) to stakeholder engagement for awareness-raising and advocacy. In the North of Agadir and other beachfronts, the Foundation conducts regular early-morning beach clean-ups, providing rural communities with the human and logistical resources necessary for waste collection. The organisation relies on private sector partnerships for triage and recycling.

Building on the visibility of their clean-up activities, the Foundation organises its volunteers to facilitate awareness raising through direct engagement with beachgoers. Replicating this model across Moroccan coastlines, the Foundation seeks to leverage its volunteer network and the coastal communities themselves to become frontline actors in plastic waste management.

2 **Focus on youth leadership:**
The SFM model is designed to foster community leadership in sustainable waste management. Recognising youth as key agents in the intergenerational transfer of knowledge and sustainable practices, particularly at the household level, the Foundation conducts various education programmes targeting schools in local communities. In collaboration with the provincial education departments of Agadir-Ida Outanane and, more recently, Chtouka Aït Baha, the organisation has been running annual programmes in schools to raise awareness about marine pollution caused by waste.

Predominantly conducted in Moroccan Arabic (or Darija), these interventions aim to foster genuine curiosity and interest among the youth, often leveraging the appeal of surfer culture, which many young Moroccans perceive as "cool and attractive". Similarly, the use of local slang and familiar language by SFM educators selected from the local community demonstrates the Foundation's efforts to prioritise youth inclusion through accessible and localised messaging.

"OUR OBJECTIVE IS NOT TO SIMPLY COMMUNICATE, BUT TO ENSURE THAT THEY [YOUNG PEOPLE] ARE TRULY COMFORTABLE."

YOUNES YOUNSI, EDUCATION PROGRAMME MANAGER AT SURFRIDER FOUNDATION MAROC

3 **Volunteer-led data monitoring system:**
Morocco lacks sufficient scientific data to better inform sustainable waste management, including in key areas such as waste quantities, the nature of waste materials, marine plastic pollution and the effectiveness of circular economy models. In response to this challenge, SFM has trained volunteers to systematically collect key data when delivering its awareness-raising activities, including data disaggregated by gender, age, and location of individuals engaged.

Data collection efforts also include information on the volume and nature of waste gathered during beach clean-up activities. Data is later used for awareness-raising and advocacy to inform relevant stakeholders (e.g., youth, companies, institutional partners, and donors) about the situation of waste management and its impact.

Spotlight: Training Workshops to Integrate Local Volunteers

In June 2024, SFM held training workshops for an incoming cohort of young volunteers to engage beachgoers and raise awareness against plastic pollution in Agadir.

This involved several sessions focusing on various key themes, including plastic pollution and marine waste, communication techniques, eco-solutions and sustainable practices, waste management in Morocco and on the beaches of Agadir, security measures, and more.

Limitations and Challenges

First, SFM faces dependence on volunteer work. SFM provides a valuable and scalable model for community-based action against plastic pollution, particularly given its programmatic focus on fostering community leadership. However, given its limited resources, both human and financial, SFM largely relies on the contribution of volunteers to deliver its work at scale. This means that the core staff must often reject project and partnership proposals due to stretched capacity. Echoing this concern, organisers from the Foundation have explained that they lack the time and resources to communicate their impact, including on social media, which they view as a significant capacity gap and area for improvement.

Second, there is limited integration or alignment with existing waste management systems. The Foundation's ability to strike partnerships with a range of institutional actors in the fight against plastic pollution, including local authorities, private-sector actors, international organisations and others contributes to the success of its activities. However, it is unclear whether this approach appropriately integrates other actors conducting similar work, particularly traditionally marginalised informal waste workers.

Third, international affiliation is both a blessing and a curse. SFM's affiliation with Surfrider Foundation Europe has at times been challenging, particularly when engaging key stakeholders such as local authorities who tend to perceive the organisation as a foreign NGO despite its localised approach and clear focus on community-based action.

Fourth, private sector partnership may contribute to greenwashing. SFM strikes several CSR-based partnerships with private sector actors, including tourism industry actors and polluting businesses. These businesses see various benefits in collaborating with them, including "cleaning up" their public image and offsetting the impacts of their activities.

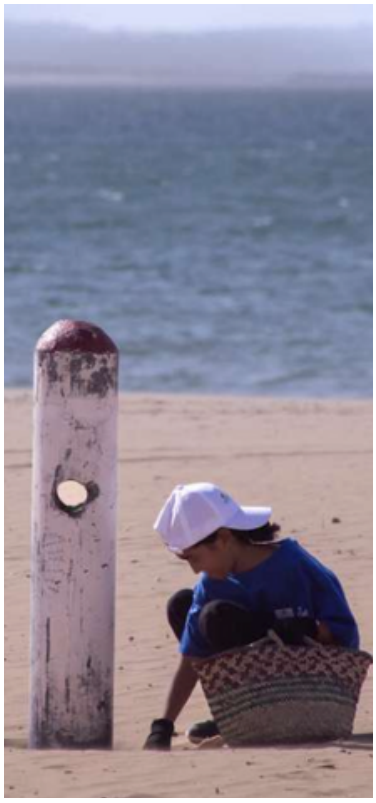


Photo credits: Surfrider Foundation Maroc

RECAP

The Surfrider Foundation Maroc demonstrates a successful community mobilisation model that combines direct action such as beach clean-ups, education, and data-informed advocacy to tackle plastic pollution on the Moroccan coastline. Its strengths lie in leveraging youth leadership for intergenerational knowledge transfer, building volunteer networks and creating strategic partnerships with local authorities and the private sector. With limited resources, SFM has achieved a lot.

How can this initiative be scaled and replicated?

The SFM model is easily replicable across Moroccan coastlines by leveraging and training existing coastal communities and volunteer networks to become frontline actors in plastic waste management. SFM's diverse programming, which expanded from simple clean-ups to include school awareness, corporate training, and sustainable waste management projects, shows its model can adapt to various local contexts. The focus on fostering youth leadership and utilizing accessible, localised messaging ensures the intergenerational transfer of knowledge and practices necessary for long-term sustainability.

Initiatives like SFM can be a part of the solution by:

- Combining direct action, awareness-raising, and advocacy to tackle pollution at multiple levels.
- Training volunteers to systematically collect crucial waste data to inform stakeholders and influence policy, filling significant scientific data gaps.
- Fostering community leadership through education and engagement, thereby empowering coastal communities to drive local solutions against plastic pollution.

TUNISIA

Overview: Plastic Pollution and Waste in Tunisia

In Tunisia, plastic and other waste pollution pose a significant environmental challenge. With a young population of nearly 11 million, a growing economy, and increasing domestic consumption, the country faces an intensive accumulation of waste. Tunisia generates more than 2.5 million tons of waste each year, including 188,000 tons of plastic waste.[83] While the country's plastic industry is small and faces challenges, Tunisia is characterised by poor waste management and high single-use plastic consumption (4.2 billion bags per year).[84]

Only 5% of Tunisia's managed solid waste is composted, and merely 4% is recycled, as 75 to 100% of the total SWM budget is allocated to waste collection and transport, pointing to structural limitations in national solid waste management, mostly limited to landfilling.[85] Despite generating more than 2 million tons of waste, the country's 10 officially controlled landfills can only process 1.78 million tons per year, as the remaining waste is burned, disposed of in uncontrolled landfills, or left uncollected.[86]

Adding to the country's waste management crisis, Tunisia has faced challenges related to illegal imports of waste from EU countries. Notably, in 2020, an illicit shipment of household waste from Italy was brought to a port in Sousse.[87] Originating from illegal deals involving Tunisian and Italian officials and private actors, who claimed the waste was to be processed at a recycling facility, this illegal shipment was discovered by Tunisian customs and led to national outrage and a government scandal.

Key National Actors and Entities

Tunisia's plastic waste management ecosystem involves multiple actors, including national agencies, municipalities, the private sector, international technical partners and civil society, yet since 2018, municipalities (or local governments) have been the main implementers of policies relating to waste management in the country.[88] While the National Agency for Waste Management (ANGed) was created in 2005 to serve as the government's coordinating body for waste management, in practice, much responsibility has been decentralised to the 24 governorates and 350 municipalities, with varying capacity for waste collection, triage and recycling. Private-sector and informal workers have therefore attempted to fill this national capacity gap. In 1998, Tunisia established Eco-Lef, a public-private partnership to collect, sort and resell plastic waste to recyclers. However, despite licensing more than 200 recycling companies to date,[89] recycling rates remain severely low, illustrating the platform's limited impact.[90] The national plastic industry plays a significant role in the country's plastics value chain, employing thousands of Tunisians, thus holding significant weight in policymaking regarding plastic waste management.[91]

Civil society organisations are also actively engaged through initiatives, such as clean-ups, marine conservation efforts, and associations across the country that promote awareness and behavioural change around plastic pollution. Informal waste workers or barbechas (in Tunisian Arabic), play a significant role in the country's plastic waste value chain, collecting nearly 80% of recyclable waste.[92] Barbechas mainly collect plastic water bottles and other plastic items, which they can sell. They organise and are represented by the National Chamber of Recyclable Waste Collectors. Their better integration into the formal recycling value chain is fundamental to achieving a zero plastic waste economy, and the Tunisian government has yet to initiate concrete steps in this direction.[93]

Social movements play a key role in national waste management, as dissatisfaction with environmental degradation and the economic costs of poor waste management has become an

increasing driver of social protests across the country.[94] Several civil society campaigns such as Manish Msab ('I Am Not a Landfill'), Sakker elMsab (Close Down the Dumpsite), Rajje el Msab (Return the Landfill) and #Yazi (Enough) denounce the detrimental impacts of poor waste management on people and the environment, particularly from toxic landfilling.[95]

Regulations and Governance Frameworks

In 2016, the Ministry of Environment (then Ministry of Environment and Local Affairs) issued a decree banning the production, distribution and use of single-use plastic bags nationwide. Introduced without sufficient stakeholder consultation, months before holding COP22 in Marrakech, this decision faced vocal resistance from the country's plastics industry, including the national unions of plastic producers and plastic waste collectors.[96] The decree failed to achieve its stated objective, leading to a renewed attempt in 2020 to introduce a ban on single-use plastic bags in supermarkets and pharmacies, aimed to achieve a complete phase-out within a year. The decree officially entered into force in March 2020 for large retailers and pharmacies, and in January 2021 for all producers, importers, distributors, and holders of plastic bags. However, enforcement was delayed until September 2022 due to COVID-19 pandemic constraints and other implementation barriers. Despite these legal provisions, single-use plastic bags remain visible on Tunisian streets and markets, pointing to clear gaps in the implementation and enforcement of the bans.

The Ministry of Environment is also developing the country's own LISP strategy (from the French Littoral Sans Plastique, meaning plastic-free coastline), in partnership with the World Bank, to reduce marine plastic pollution through circular-economy approaches.[97] This multi-stakeholder initiative includes government bodies, the private sector, civil society organisations, local communities, academia and international organisations such as the UN Environment Programme. Coastal municipalities are considered key partners for implementation, coordinated by several central government agencies such as the Agency for Coastal Protection and Development or the National Environmental Protection Agency.

Additionally, the National Strategy for Circular, Global and Sectoral Waste Management 2035-2050 adopts an integrated and systemic approach to waste management, emphasising the interconnected roles of all actors across the waste value chain, including local institutional actors.

Public Attitudes and Behaviours

A 2022 survey on Tunisians' perceptions of pollution and environmental governance reveals strong concern about waste, including from plastics, with a vast majority (88%) viewing it as a serious problem in their community.[98] 80% of respondents specifically cited plastic bags as a major source of pollution in the country. Moreover, while most citizens place a large part of the responsibility for pollution on themselves, they also expect the local and national government to play a greater role in tackling the issue. Acknowledging citizens' responsibility for addressing waste management is crucial, particularly to tackle the widespread practice of littering in cities and rural areas.[99] Yet, framing Tunisia's waste crisis around citizens' responsibility in changing their attitudes and behaviours may contribute to concealing the systemic and geographical inequities associated with waste mismanagement, including by rendering invisible those most affected.

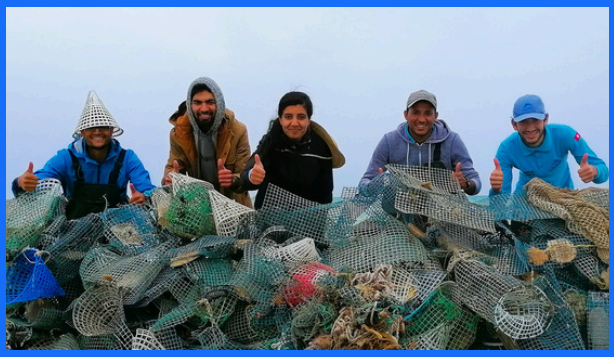


Photo credits: Notre Grand Bleu

Notre Grand Bleu: Protecting the Mediterranean's Blue Heart

Decades of inadequate waste management have caused severe environmental degradation along the Tunisian coastline. Annually, around 80,000 tons of plastic litter the Tunisian seaside,[100] of which about 17,000 tons leak into the sea.[101] Plastic pollution, overfishing, and unsustainable fishing practices pose significant challenges to protecting Tunisia's rich but fragile marine ecosystems. Traditional fishing gear is increasingly being replaced by plastic alternatives that fragment into microplastics, resulting in environmental hazards. Balancing coastal livelihoods with ecosystem preservation thus presents a key challenge.

Notre Grand Bleu (NGB) was established in 2012 by a group of local Tunisian scuba divers, spear-fishers, and researchers concerned about ecosystem degradation in and around the bay of Monastir. Adopting a science-based approach, the NGO works to ensure the protection and sustainable development of coastal areas, the preservation of marine and coastal life, and the continued viability of human activities that depend on them. Its main activities include biodiversity research and monitoring; protected area designation and management; and advocacy for law and policy change. The organisation is particularly recognised for field training and community engagement activities, particularly with small-scale coaster fishing communities and Tunisian youth. Tackling marine pollution is one of the organisation's key pillars, alongside environmental education, capacity strengthening, sustainable fishing, sustainable tourism, and beach clean-ups.

Model and Approach

1 **Science-based approach, grounded in communities' lived experiences:**
NGB is grounded in rigorous scientific research that combines oceanographic biodiversity studies with the knowledge and lived experiences of the fishing communities inhabiting the Bay of Monastir. This approach supports advocacy and awareness-raising efforts while strengthening organisational credibility with government authorities. Indeed, this science-based methodology has proven particularly effective in NGB's engagement with local authorities, including the Monastir governorate, where the organisation conducts regular training workshops with policymakers focusing on environmental themes. NGB's strong ties with fishing communities position the organisation as a key intermediary between policymakers and key stakeholders, allowing it to effectively influence policy developments, including most recently on a bill to prohibit the use of plastic gear for octopus fishing. Currently, NGB advocates for a bill to prohibit the use of plastic-based fish traps, as an estimated 100,000 traps are lost to the ocean beds across the Bay of Monastir each year, causing significant harm to marine species and environmental degradation.[102]

"WE ALWAYS SEEK SUSTAINABLE SOLUTIONS. SOLUTIONS WHICH BENEFIT ALL RELEVANT STAKEHOLDERS, NOT ONLY OUR ORGANISATION, AND ADDRESS ALL DIMENSIONS, SOCIAL, ENVIRONMENTAL AND ECONOMIC."

ECO-GUARD AND MANAGER OF SCIENTIFIC MONITORING AT NGB

2 **Strong embedding in coastal communities:**
NGB's approach fundamentally recognises the interconnected well-being of Monastir's marine environment and coastal communities, particularly fishing communities. The organisation deliberately involves a wide array of stakeholders, including scuba divers, fishers, educators, recycling actors, local authorities, media, and young people. It leverages the sea as a common ground for community building and promoting collective action. In this frame, the organisation's interventions target the root causes and impacts of marine pollution, promote sustainable fishing practices, and address the political economy of marine degradation through early education. Beach clean-ups organised by NGB have generated measurably positive impacts in targeted areas, with fishers reporting the return of several marine species.

3 **Youth education and empowerment:**
Under its environmental education pillar, NGB directly engages with coastal communities to raise awareness about marine pollution and other ecosystem preservation challenges. Notably, it engages with youth in primary and secondary schools through intensive programmes covering topics including marine biology, ecology, sea and land ecosystems, and plastic waste management. NGB fosters youth leadership by supporting youth-led clean-up campaigns in schools, on beaches and ocean beds. Junior members make up the majority of NGB's membership base (with more than 100 to date), and irrespective of gender, they participate actively in all activities, including scientific research. NGB also organises diving workshops for young members at the association level, providing them with resources to lead clean-up activities and eventually become empowered environmental actors capable of leading by example at the grassroots level.

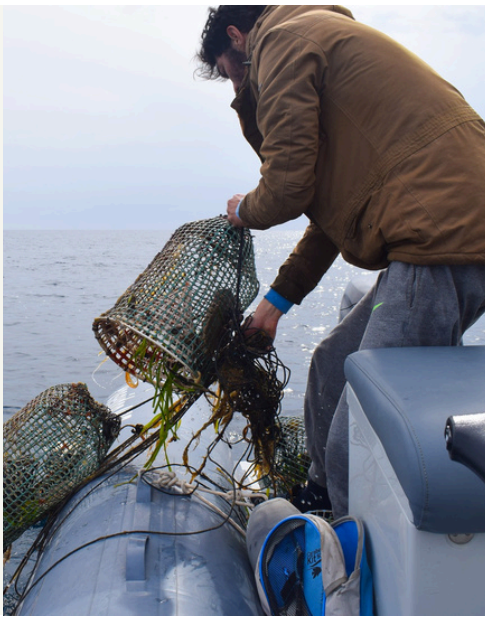
Leveraging sports, specifically scuba diving, for youth engagement and networking, NGB has attempted to scale its activities and impact by organising several national events in partnership with the Tunisian Federation of Scuba Divers. This required establishing partnerships with diving centres across the Tunisian coastline, including in Bizerte and Mahdia.

Spotlight: Addressing Pollution from Fishing Traps

Lost fishing nets and traps represent a major factor of marine degradation in the Bay of Monastir. In fact, plastic waste can be found in nearly 80% of animals found and autopsies on the bay's shores, particularly sea turtles. In addition to macro-plastic waste, micro-plastics suffocate, irritate and poison the marine environment, including the smallest marine species, like zooplankton, to the largest, like whales.

To address this problem, NGB collaborates with scuba-diving associations and fishers' cooperatives to clean ocean beds, including by retrieving fishers' lost nets and traps. NGB works closely with recycling actors and artisans to upcycle waste from non-reusable fish traps into decorative household objects, thus creating revenue-generating opportunities for local artisans, particularly young workers.

This approach successfully leverages the organisation's science-based knowledge to create tangible circular economy value chains.



Limitations and Challenges

First, there are many challenges with building community trust. Despite initial defiance, NGB has successfully established and maintained strong ties and trust with fishing communities, particularly through key members' longstanding affiliations with fishers' cooperatives. This is not a given, particularly

as competition over dwindling fishing stocks may disincentivise transparency and cooperation. However, a key challenge is that providing economic incentives to fishing communities for their adoption of sustainable practices (via equipment provision, for instance) has led to growing expectations for service provision. This may prevent genuine change in attitudes and behaviours.

Second, the cost of activities limit scalability. The financial requirements for scuba diving equipment, training, and coastal operations present significant barriers to scaling NGB's model. Equipment costs, insurance, safety certifications, and access to suitable diving locations limit geographic expansion beyond well-resourced coastal areas.

RECAP

Notre Grand Bleu is a scientifically grounded, community-embedded NGO, founded by local divers and researchers in 2012, with a mission to protect and sustainably develop marine and coastal life in Tunisia. Its key strengths lie in leveraging rigorous scientific research combined with the knowledge of fishing communities to inform effective advocacy (e.g., influencing policy on plastic fishing gear), strong community embeddedness built on trust, and successful youth empowerment through educational and diving activities.

How can this initiative be scaled and replicated?

Scaling requires contextual adaptation (identifying local champions, securing funding) rather than direct replication, especially given the high financial requirements for diving equipment and coastal operations. Leveraging its successful model of fostering youth leadership and utilising scuba diving and education can be scaled by establishing partnerships with diving centres and schools across the Tunisian coastline and wider MENA region. The model has strong replication potential through its focus on transforming marine waste into livelihood opportunities, offering a sustainable revenue-generating solution to pollution.

Initiatives like NGB can be a part of the solution by:

- Utilising scientific credibility and grassroots knowledge to effectively influence policy developments and advocate for systemic changes (like banning harmful plastic gear).
- Acting as a crucial intermediary between policymakers and key stakeholders by providing verified data and community insights.
- Demonstrating how environmental interventions must simultaneously target ecosystem preservation, sustainable livelihoods, and early education to achieve holistic, measurable impact.
- Creating community buy-in and ownership by leveraging the sea as a common ground for collective action and promoting youth leadership in conservation.

FINAL TAKEAWAYS:
COMMUNITY ACTION AS THE FOUNDATION FOR A PLASTIC-FREE FUTURE

Photo credits: VeryNile

Across the five countries studied, a shared pattern clearly emerges: community-led initiatives are consistently filling operational and behavioral gaps where national policies express ambition but lack the grounded mechanisms for local engagement.

From river cleanups in Egypt, to youth engagement in KSA, to coastal mobilisation in Morocco and Tunisia, and a resilient civil society shifting to propose evidence-based solutions in Lebanon, communities play a decisive role in translating policy commitments into visible, lived environmental practice. The initiatives showcased demonstrate that participatory, place-based approaches generate levels of legitimacy, trust, and continuity that top-down systems alone struggle to achieve.

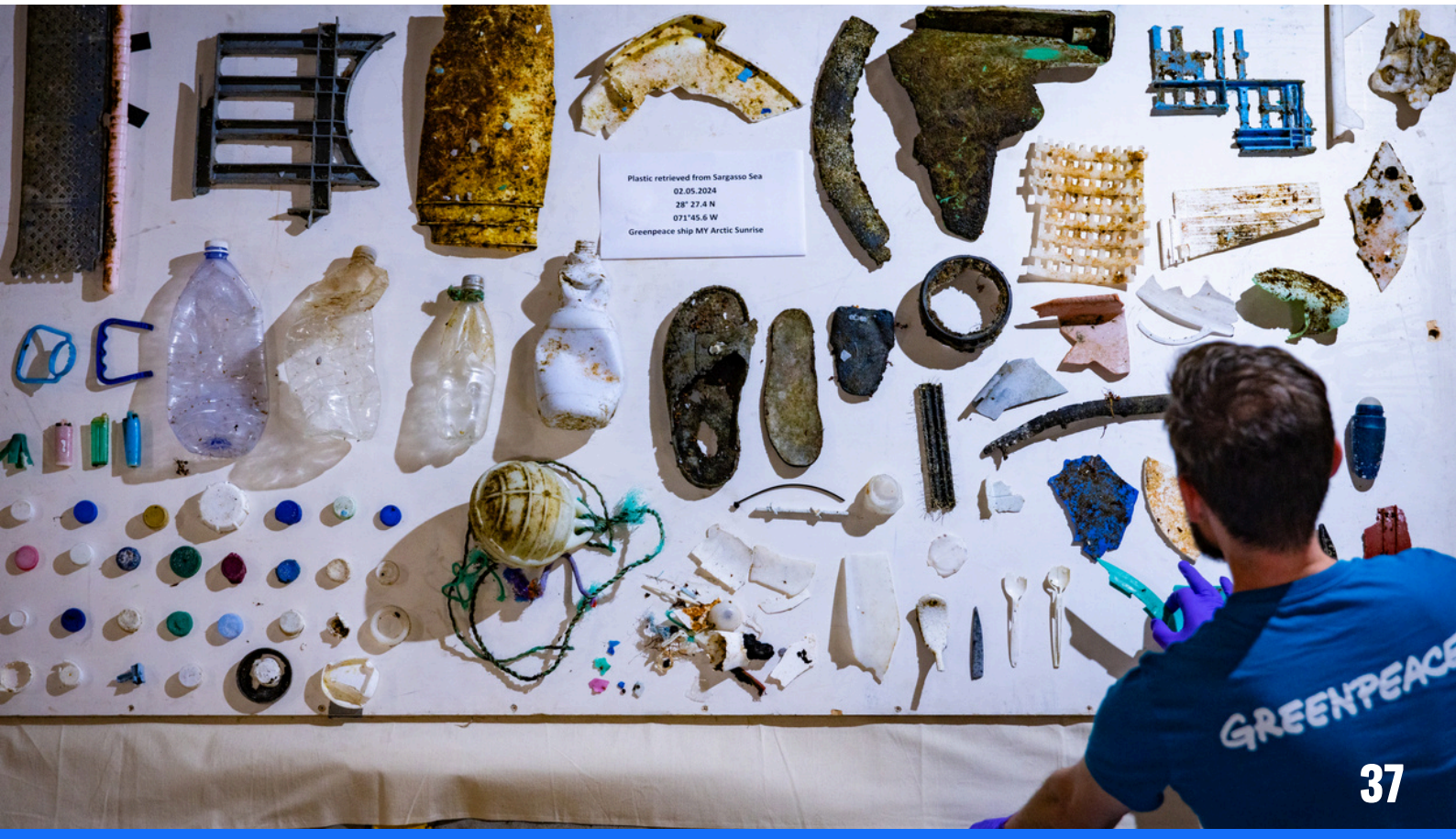
Another important thread across the region is the way these community-led approaches connect environmental objectives with tangible social and economic value. In Egypt, Morocco, and Tunisia, for example, initiatives actively integrate fisherpeople, women artisans, youth, and informal recyclers. This action is built upon, and actively feeds into, existing local knowledge systems. Furthermore, innovative behavioral change strategies are key: youth are empowered and mobilised through social media that is leveraged in fun ways to gamify the clean-up process in KSA.

A key takeaway is that circularity only gains traction when it aligns with social realities and when environmental interventions support, rather than displace, local economic and social practices. These models generate co-benefits that transcend environmental outcomes, reinforcing the relationship between social well-being, economic resilience, and long-term sustainability. They create livelihoods, support women's economic participation, preserve traditional skills, and strengthen social cohesion in marginalised communities. These social aspects are not secondary; they are integral to why these models prove to be so effective.

Finally, there is an increasing use of community-generated data as a potent tool for influence and policy engagement. From microplastic sampling to waste volume quantification, these initiatives reflect a vital shift toward trusting and relying on local knowledge. They collectively demonstrate that this data can make invisible waste flows visible, strengthen advocacy by providing evidence and alternative solutions, and enhance the credibility of environmental action.

Looking ahead, a regional transition toward zero plastic waste economies will require strengthening and enabling conditions that allow these initiatives to operate and grow. This means: formally recognising social enterprises; integrating community-generated data into national monitoring systems; expanding funding pathways for local innovation; and designing policy instruments that acknowledge the essential contributions of informal workers. It is critical to ensure that local efforts are meaningfully integrated into national strategies, but these approaches must be designed and implemented in ways that remain sensitive to the unique social, political, and ecological contexts in which they operate.

Ultimately, community-led action is not a supplement to national plastic strategies, it is the indispensable foundation for achieving a plastic-free future rooted in both environmental integrity and social justice.



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