Plastic-free Coastline

Addressing Plastic Pollution in Morocco
List of Figures

Figure 1: Timeline of the partnership between the World Bank and Morocco to address plastic pollution 09
Figure 2: Plastic leakage from Moroccan coasts 19
Figure 3: Plastic pollution hotspots in Morocco 21
Figure 4: The LISP Strategy and its strategic objectives 22
Figure 5: LISP stakeholders in Morocco 23
Figure 6: Schematic overview of the LISP Strategy formulation process 25
Figure 7: LISP strategic objectives and deliverables 27
Figure 8: The circular economy value in Morocco 30
Figure 9: Design of proposed integrated monitoring database 51
Figure 10: Proposed National Laboratory for Pollution Studies and Monitoring system 51

List of Tables

Table 1: Main results of the deliverables 07
Table 2: Main legal instruments in Morocco related to management of plastic pollution 35
Table 3: Recommendations to enhance policy and legal frameworks to address plastic pollution in Morocco 36
Table 4: Action plan to reduce the use of agricultural plastics in Morocco 40
Table 5: Proposed draft roadmap to formalize the informal sector 46
Table 6: The awareness, interest, desire, and action communication model 48

List of Boxes

Box 1: Plastic pollution hotspots in Morocco 21
Box 2: Advantages of the LISP approach 25
Box 3: Improving policy and legal frameworks to address marine plastic pollution in Morocco 34
Box 4: The awareness, interest, desire, and action communication model 47
Box 5: Strengthening the capacity for monitoring marine plastic pollution 49
Box 6: Fostering regional cooperation to stop plastic pollution 57

Acronyms and Abbreviations

CEV Circular economic value
CTPC Technical Center for Plastics and Rubber
DDD Département du Développement Durable (Department of Sustainable Development)
EPR Extended producer responsibility
FNEDD Fonds National de l’Environnement et du Développement Durables
(National Environment and Sustainable Development Fund)
ICT Internal consumption tax
IMAP Integrated Monitoring and Assessment Program
INC Intergovernmental negotiating committee
INRH National Institute of Fisheries Research
LISP Littoral Sans Plastic (Plastic-free coastlines)
LNESP Laboratoire National des Études et de Surveillance de la Pollution
(National Laboratory for Pollution Studies and Monitoring)
MI Ministry of Interior
SIREDD Système D’Information Régional de l’Environnement et du Développement Durables
[Regional Information System for the Environment and Sustainable Development]
This background technical note aims to summarize the development of the partnership between the government of Morocco and the World Bank to address plastic pollution in a succinct manner. It builds on the previous report “Plastic-Free Coastlines: A Contribution from the Maghreb to Address Marine Plastic Pollution” which summarizes the diagnostics on the status of plastic pollution and the formulation of the Littoral Sans Plastique (LISP, Plastic-Free Coastlines) strategy. The present note illustrates the development of the partnership since the previous report and presents a summary of the following seven deliverables, which were priority actions for the government to start implementing the LISP Strategy: (i) assessing plastic circularity; (ii) examining potential economic instruments to phase out single-use plastics; (iii) reducing agricultural plastic use; (iv) designing a public-private network of coastal tourism actors to reduce single-use plastics in tourist establishments in the Souss-Massa region; (v) analyzing the role of the informal waste sector in plastic waste management; (vi) preparing a LISP communication plan; and (vii) designing an integrated information management system to strengthen the monitoring program.

This note was prepared by Kanako Hasegawa (Environmental Specialist) as part of the World Bank task team led by Marcelo Acerbi (Senior Environmental Specialist). The team was composed of Brahim Soudi (Senior Plastic Pollution Consultant), Maya Zaatar (Project Coordinator, Resources and Waste Advisory Group [RWA]/MORES), Andrew Whiteman (Director, RWA), Raji Massari (General Manager, MORES), Sabine El-Khazen (Solid Waste Management Expert, MORES), Soumaya Ayadi (Waste Management Consultant, MORES), Nicole Weber (waste Management Consultant, RWA), Antoine Belon (Waste Management and Circular Economy Consultant), Tarik Egdhari (Waste Management and Circular Economy Specialist), Abdeslam Naj (Waste Management Consultant), David Newby (Data Management Consultant), Stephen Bates (Communications Expert, RWA), Said Chakri (Communications Expert), Camille Laude (Solid Waste Management consultant), Nadia Kassali (Program Management Consultant), Jennifer Stastny (Editorial Consultant), and Pieter Grobler (Design and Communication Consultant). Strategic guidance was provided by Jesko Hentschel (Director for the Maghreb and Malta), Maria Sarraf (Practice Manager, Environment, Natural Resources, and Blue Economy, Middle East and North Africa), and Carole Megevand (Sustainable Development Sector Leader). The task team would like to thank Milagros Cecilia Aime (Environmental Engineer, PROBLUE Secretariat) for technical review of the report.

The team would like to express its gratitude to the Government of Morocco for its partnership in addressing plastic pollution. The team appreciates the leadership and cooperation of Mr. Rachid Firadi (Director, Département du Développement Durable [DDD, Department of Sustainable Development]); Ms. Seloua Amaziane (Head of the Partnership Division, DDD), Ms. Hafsa Lakhlifi (Director of Programs and Realizations, DDD), and Ms. Hafsa Benbrahim (Chief of Service in charge of local authorities and public and private sectors, DDD). The team would also like to thank all the partners involved in preparing and implementing the priority activities of the LISP Strategy.

This work was funded by PROBLUE, an umbrella multi-donor trust fund administered by the World Bank that supports the sustainable and integrated development of marine and coastal resources in healthy oceans.
Executive Summary

Plastic pollution is a major threat to Morocco's blue economy, costing the country more than US$750 million annually and impacting the blue sectors, particularly coastal tourism, fisheries, and shipping. Every kilometer of the Moroccan coastline leaks 6.26 kilograms of waste into the Mediterranean Sea, daily. Every year, 75,000 tons of plastic waste enter the marine environment. Recent surveys indicate that, on average, 730 litter items are found per 100 meters of beach. In a business-as-usual scenario, plastic pollution is projected to almost triple by 2040. Addressing plastic pollution is therefore a critical consideration in developing Morocco’s blue economy.

The LISP Strategy aims to eradicate plastics from the Moroccan coastline by promoting a systemic transition to a circular economy model. Such a transition is expected to stimulate innovation and create more jobs while simultaneously reducing greenhouse gas emissions. In Morocco, the LISP Strategy aims to encourage an inclusive circular economy as a way to build the blue economy. This transition to a circular economy needs to be fair and provide decent jobs and working conditions for informal waste workers and vulnerable communities.

Under the partnership with the World Bank, the Government of Morocco has already started implementing the LISP Strategy. This note outlines the development of this partnership between 2022 and 2023 and builds on the preceding technical report entitled “Plastic-Free Coastlines: A Contribution from the Maghreb to Address Marine Plastic Pollution”, which presented the diagnostic and strategy formulation stages. This note also summarizes the seven priority deliverables prepared during the period to illustrate the partnership’s progress. The deliverables and main results are presented on page 7.

Table 1: Main results of deliverables

<table>
<thead>
<tr>
<th>Deliverable</th>
<th>Main results</th>
</tr>
</thead>
</table>
| Deliverable 1: Assess plastic circularity. | Identified four feasible approaches (with Option 1 being the most relevant and feasible): 
- **Option 1:** Establish an internal consumption tax on selected single-use plastics
- **Option 2:** Adjust the percentage of current plastic ecotax according to the plastic material or product imported
- **Option 3:** Apply the ecotax to imported packaging by a declaration
- **Option 4:** Introduce a mandatory price for fast-food plastic packaging. |
| Deliverable 2: Examine potential economic instruments to phase out single-use plastics |  |
| Deliverable 3: Reduce the use of plastics in agriculture | Prepared an Action Plan supporting the LISP Strategy that targets reducing common plastic products use in agriculture, based on international benchmarks and stakeholder consultation meetings. |
| Deliverable 4: Design a public-private network of coastal tourism actors to reduce single-use plastics in tourist establishments in the Souss-Massa region | Initiated the creation of a network of coastal tourism stakeholders in Taghazout and Agadir to prevent and reduce the use of single-use plastics in tourist hotels and restaurants. This network is expected to serve as a pilot model of partnership between the government and private tourism actors, which could be replicated in other coastal regions. |
| Deliverable 5: Analyze the role of the informal waste sector in plastic waste management | Prepared a draft roadmap to integrate the informal sector, based on legal measures and programs to transform the informal sector into small businesses. |
| Deliverable 6: Prepare a LISP communication plan | Produced the following outputs to support a communication campaign for the LISP Strategy to engage wider stakeholders in its implementation: 
- A communication framework with key messages, target audiences, and communication channels for relevant communication products
- A communication plan to implement a campaign with three budget scenarios (low, medium, and high)
- Communication assets including a campaign logo, a brochure, and posters. |
| Deliverable 7: Design an integrated information management system to strengthen the monitoring program | Proposed an enhancement of the Systèmes d’information régionaux de l’environnement et du développement (SIREDD, Regional Environment and Development Information System) to integrate data related to plastic pollution and facilitate national reporting on the implementation of international agreements. |

---

3 Soudi et al. 2022b.
4 World Bank 2021.
4 Plastic circularity refers to the level of circularity in plastic material flow. The more circular the system is, the more materials are kept circulating within a given system through reuse, refurbishment, recycling and so on.
**Immediate next steps**

The following immediate next steps, which stem from the deliverables above, would support the government as it continues implementing its LISP Strategy and moves towards a circular economy:

- Institutionalize the implementation of the LISP Strategy. This would involve continuing its implementation and regularly assessing progress using a common monitoring and evaluation framework. Such a practice would help Morocco prepare national reports on the future international legally binding instrument, integrating stakeholder actions across sectors and throughout the value chain.

- Implement upstream and downstream measures to enhance plastic circularly. This could include establishing standards for recycled plastics, enhancing plastic recycling, and improving waste collection in rural areas.

- Set an internal consumption tax (ICT) on selected single-use plastic products to reduce their use. The target single-use plastic products could be selected considering the development of the legally binding instrument on plastic pollution.

- Conduct a field trial and assess the technical and economic feasibility of replacing mulching films and twines with biodegradable materials.

- Formalize the network of coastal tourism actors in Agadir and Taghazout through an agreement. The network could serve as a pilot model for partnership between local authorities and private tourism actors (hotels and restaurants) in different regions.

- Finalize and implement a roadmap for integrating the informal sector into plastic waste management. A key step would be to develop a legal framework to support recycling businesses and enable the inclusion of the informal sector.

- Roll out a communication campaign using the LISP communication plan and communication assets to engage the public in implementing the LISP Strategy.

- Enhance SIREDD to strengthen data collection and management throughout the plastic lifecycle. This will help Morocco prepare for national reporting on the upcoming legally binding instrument on plastic pollution.

**Conclusion**

Morocco has an opportunity to establish a cross-sectoral national program on plastic pollution based on the LISP Strategy and its priority projects (Annexure 3). Such a cross-sectoral program would allow the government to coordinate actions on plastic pollution across different ministries and departments. It would also contribute to the government’s blue economy program.

This cross-sectoral national program could become a means to implement the upcoming international legally binding instrument on plastic pollution, including in the marine environment. While national obligations under this instrument are currently undefined, holistically addressing plastic pollution requires actions throughout the plastic lifecycle, and nationally coordinated actions across sectors are essential. By building a national cross-sectoral mechanism now, Morocco could anticipate and build its preparedness to implement the instrument and share its unique, cross-sectoral efforts with other countries through South-South cooperation.

Morocco has started implementing the LISP Strategy and the results are starting to show. The government has begun operationalizing the LISP Strategy by setting up an implementation mechanism overseen by the National Plastics Committee. The LISP Strategy is already starting to show impacts. The Ministry of Energy Transition and Sustainable Development has started to work with the Ministry of Economy and Finance, the Ministry of Industry and Trade, and the Groupement d’Intérêt Economique des Plasturgistes (Plastic Economic Interest Group) to promote integrated plastic waste management. Morocco’s efforts to stop plastic pollution will help unleash the full potential of the blue economy for inclusive and resilient development in line with the vision of the New Development Model.

**Figure 1: Timeline of the partnership between the World Bank and Morocco to address plastic pollution**

<table>
<thead>
<tr>
<th>Date</th>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>November 2022</td>
<td>The first session of the Intergovernmental Negotiating Committee (INC1)</td>
</tr>
<tr>
<td>2023</td>
<td>Priority activities of the action plan were implemented</td>
</tr>
<tr>
<td>2024</td>
<td>International legally binding instrument on plastic pollution to be finalized</td>
</tr>
</tbody>
</table>

**Diagnostics prepared**

- First implementation progress review of the LISP strategy

**LISP Strategy prepared**

- World Bank technical assistance started

**2021**

**2022**

- November 2022: The first session of the Intergovernmental Negotiating Committee (INC1)
Résumé exécutif

La pollution par les déchets plastiques représente une menace sérieuse pour l’économie bleue au Maroc. Elle coûte au pays plus de 750 millions de dollars par an et a un impact sur les secteurs bleus, en particulier le tourisme côtier, la pêche et le transport maritime. Chaque kilomètre du littoral marocain laisse s’échapper quotidiennement 6,26 kg de déchets dans la mer Méditerranée. Chaque année, 75 000 tonnes de déchets plastiques entrent en contact avec l’environnement marin. Des études récentes indiquent qu’en moyenne, 730 déchets sont trouvés par 100 mètres de plage. Si rien ne change, la pollution par le plastique devrait presque tripler d’ici 2040. La lutte contre la pollution plastique est donc un élément essentiel à prendre en considération dans le développement de l’économie bleue au Maroc.

Dans le cadre de ce partenariat, le gouvernement marocain a établi sa première évaluation de la pollution par le plastique. Sur la base de cette évaluation, la stratégie et le plan d'action « Littoral Sans Plastique » (LISP) ont été élaborés avec la participation active des parties prenantes tout au long de la chaîne de valeur du plastique, y compris les différents ministères et services sectoriels, la société civile et le secteur privé.

La stratégie LISP a pour but d’éradiquer les plastiques du littoral marocain en favorisant une transition systémique vers un modèle d’économie circulaire. Cette transition devrait stimuler l’innovation et créer plus d’emplois tout en réduisant simultanément les émissions de gaz à effet de serre. Au Maroc, la stratégie LISP vise à encourager une économie circulaire inclusive comme moyen de mettre en place l’économie bleue. Cette transition vers une économie circulaire doit être équitable et proposer des emplois et des conditions de travail décents pour les travailleurs informels du secteur des déchets et les communautés vulnérables.


**Tableau 1 : Principaux résultats des produits livrables**

<table>
<thead>
<tr>
<th>Produit livrable</th>
<th>Principaux résultats</th>
</tr>
</thead>
</table>
| **Produit livrable 1 : Évaluer la circularité du plastique**3 | Identification de quatre approches réalisables (l’option 1 étant la plus pertinente et la plus réalisable) :  
- Option 1 : instaurer une taxe sur la consommation interne de certains plastiques à usage unique  
- Option 2 : ajuster le pourcentage de l’écotaxe actuelle sur le plastique en fonction de la matière plastique ou du produit importé  
- Option 3 : appliquer l’écotaxe aux emballages importés au moyen d’une déclaration  
- Option 4 : imposer un prix obligatoire pour les emballages plastiques utilisés dans la restauration rapide. |
| **Produit livrable 2 : Examiner les instruments économiques potentiels pour éliminer progressivement les plastiques à usage unique** | Elaboration d’un plan d’action promouvant la stratégie LISP qui vise à réduire l’utilisation des produits plastiques courants dans l’agriculture, fondé sur des références internationales et des réunions de consultation des parties prenantes. |
| **Produit livrable 3 : Réduire l’utilisation des plastiques dans l’agriculture** | Mise en place d’une initiative visant à créer un réseau d’acteurs du tourisme côtier à Tagnazout et Agadir pour prévenir et réduire l’utilisation de plastiques à usage unique dans les hôtels et restaurants touristiques. Ce réseau devrait servir à titre pilote de modèle de partenariat entre le gouvernement et les acteurs privés du tourisme, qui pourrait être reproduit dans d’autres régions côtières. |
| **Produit livrable 4 : Concevoir un réseau public-privé d’acteurs du tourisme côtier pour réduire les plastiques à usage unique dans les établissements touristiques de la région de Souss-Massa** | Élaboration d’un projet de feuille de route pour intégrer le secteur informel, fondé sur des mesures juridiques et des programmes visant à transformer le secteur informel en petites entreprises. |
| **Produit livrable 5 : Analyser le rôle du secteur informel des déchets dans la gestion des déchets plastiques** | Production des résultats suivants à l’appui d’une campagne de communication sur la stratégie LISP afin d’associer l’ensemble des parties prenantes à sa mise en œuvre :  
- Un cadre de communication avec des messages clairs, des publicités et des canaux de communication pour les produits de communication pertinents.  
- Un plan de communication pour mettre en œuvre une campagne ayant trois scénarios de budget (faible, moyen et élevé).  
- Des actifs de communication, notamment un logo de campagne, une brochure et des affiches. |
| **Produit livrable 6 : Établir un plan de communication pour la LISP** | Proposition d’amélioration des systèmes d’information régionaux de l’environnement et du développement (SIRED) afin d’intégrer les données relatives à la pollution par le plastique et de faciliter l’établissement de rapports nationaux sur la mise en œuvre des accords internationaux. |
| **Produit livrable 7 : Concevoir un système intégré de gestion de l’information pour renforcer le programme de suivi** | |
Prochaines étapes immédiates

Les prochaines étapes immédiates suivantes, qui découlent des produits livrables ci-dessus, aideraient le gouvernement à poursuivre la mise en œuvre de sa stratégie LISP et à s’orienter vers une économie circulaire :

- Institutionnaliser la mise en œuvre de la stratégie LISP. L’objectif est notamment de poursuivre sa mise en œuvre et d’évaluer régulièrement les progrès accomplis à l’aide d’un cadre commun de suivi et d’évaluation. Une telle pratique aiderait le Maroc à élaborer des rapports nationaux sur le futur instrument international juridiquement contraignant, en intégrant les actions des parties prenantes dans tous les secteurs et tout au long de la chaîne de valeur.

- Mettre en œuvre des mesures en amont et en aval pour renforcer la circularité du plastique. Ces mesures pourraient notamment consister à établir des normes pour les plastiques recyclés, à renforcer le recyclage des plastiques et à améliorer la collecte des déchets dans les zones rurales.

- Instaurer une taxe intérieure sur la consommation de certains produits en plastique à usage unique afin de réduire leur utilisation. Les produits plastiques à usage unique visés pourraient être sélectionnés au regard de l’élaboration de l’instrument juridiquement contraignant sur la pollution plastique.

- Réaliser un essai sur le terrain et évaluer la faisabilité technique et économique du remplacement des films et ficelles servant à recouvrir les sols par des matières biodégradables.

- Intégrer dans le secteur formel le réseau des acteurs du tourisme côtier à Agadir et Tighazout dans le cadre d’un accord. Ce réseau pourrait servir à titre pilote de modèle de partenariat entre les autorités locales et les acteurs privés du tourisme (hôtels et restaurants) dans différentes régions.

- Finaliser et mettre en œuvre une feuille de route pour intégrer le secteur informel dans la gestion des déchets plastiques. Une étape décisive consisterait à mettre en place un cadre juridique pour soutenir les entreprises de recyclage et permettre l’inclusion du secteur informel.

- Lancer une campagne de communication en utilisant le plan de communication LISP et les actifs de communication pour faire participer le public à la mise en œuvre de la stratégie LISP.

- Améliorer les SIREDD pour renforcer la collecte et la gestion des données tout au long du cycle de vie du plastique. Cela aidera le Maroc à se préparer en vue l’établissement d’un rapport national sur le prochain instrument juridiquement contraignant relatif à la pollution plastique.

- Élaborer des rapports nationaux sur le futur instrument juridiquement contraignant relatif à la pollution plastique. Bien que les obligations nationales prévues par cet instrument ne soient pas encore définies, la lutte globale contre la pollution plastique nécessite des actions tout au long du cycle de vie du plastique, et des mesures de lutte coordonnées à l’échelon national entre les différents secteurs sont essentielles. En mettant en place un mécanisme national intersectoriel dès maintenant, le Maroc pourrait anticiper et se préparer à mettre en œuvre l’instrument et partager ses mesures intersectorielles uniques en leur genre avec d’autres pays dans le cadre de la coopération Sud-Sud.

- Le Maroc a commencé à mettre en œuvre la stratégie LISP et les résultats commencent à se concrétiser. Le gouvernement a commencé à mettre en œuvre sur le plan opérationnel la stratégie LISP en mettant en place un mécanisme de mise en œuvre supervisé par le Comité national des plastiques. La stratégie LISP commence déjà à produire des effets. Le ministère de la Transition énergétique et du Développement durable a commencé à travailler avec le ministère de l’Économie et des Finances, le ministère de l’Industrie et du Commerce et le Groupement d’intérêt économique des plasturgistes pour promouvoir la gestion intégrée des déchets plastiques. Les efforts déployés par le Maroc pour mettre fin à la pollution plastique aideront à exploiter pleinement les possibilités offertes par l’économie bleue aux fins d’un développement inclusif et résilient, conformément à la vision du nouveau modèle de développement.

Figure 1 : Graphique chronologique du partenariat entre la Banque mondiale et le Maroc pour lutter contre la pollution par le plastique
ينهي البنك الدولي هذه الدورة بتحديداً كما القادم الأزرق في المغرب، حيث يكلف البلاد أكثر من 750 مليون دولار سنوياً بمرور أنواع مختلفة من البلاستيك إلى البحر المتوسط. وتختلف هذه الأنسجة البلاستيكية على مساحة تبلغ 100 مليون متراً مربعاً في المياه، بينما يتوقف بحري جزء كبير منها في المياه الساحلية.

ويفاد الأشخاص والمنظمات تساهم في تفوق تلوث البلاستيك، وفي الواقع هذه اللوحة مفتاحاً لتحقيق التنمية المستدامة لجميع أطراف المجتمع. ولهذا النوع من التحديات المتزايدة نرى أن هناك اقتراحات لاستخدام البلاستيك، بما في ذلك استخدام البلاستيك المصنوع من المواد البلاستيكية المستخدمة.

تهدف هذه الإستراتيجية إلى التخطيط والتعاون الخليجي في مجال التخلص التدريجي من المواد البلاستيكية. ومن المفهوم أن يؤدي هذا التحول إلى تحقيق الأهداف المبينة في المحور الثاني. وفي المغامات، فإن هذه الاستراتيجية ستساعد على تحسين النظام البيئي وتقليل التلوث البلاستيكي، وامتداد هذا التحول إلى الاقتصادات الإقليمية، مما يجعله أكثر ملاءمة وجدوى.

تهدف هذه الإستراتيجية إلى تحقيق التحول التدريجي من المواد البلاستيكية إلى المواد المستدامة. ومن المفهوم أن يؤدي هذا التحول إلى تحقيق الأهداف المبينة في المحور الثاني. وفي المغامات، فإن هذه الاستراتيجية ستساعد على تحسين النظام البيئي وتقليل التلوث البلاستيكي، وامتداد هذا التحول إلى الاقتصادات الإقليمية، مما يجعله أكثر ملاءمة وجدوى.

sembles من الموارد الشاملة للتنمية الاستدامة وتوفر إعدادًا بالتقدير

توسيع القدرة على الوصول إلى المنتجات المستدامة، بدءاً من المحور الثاني، وذلك استناداً إلى التقرير السابق.

ينهي البنك الدولي هذه الدورة بتحديداً كما القادم الأزرق في المغرب، حيث يكلف البلاد أكثر من 750 مليون دولار سنوياً بمرور أنواع مختلفة من البلاستيك إلى البحر المتوسط. وتختلف هذه الأنسجة البلاستيكية على مساحة تبلغ 100 مليون متراً مربعاً في المياه، بينما يتوقف بحري جزء كبير منها في المياه الساحلية.

ويفاد الأشخاص والمنظمات تساهم في تفوق تلوث البلاستيك، وفي الواقع هذه اللوحة مفتاحاً لتحقيق التنمية المستدامة لجميع أطراف المجتمع. ولهذا النوع من التحديات المتزايدة نرى أن هناك اقتراحات لاستخدام البلاستيك، بما في ذلك استخدام البلاستيك المصنوع من المواد البلاستيكية المستخدمة.
ملخص تقنيي

الخلاصة

اندماج أطر الإعداد والتشريح التقني في مسار العملية الاستراتيجية "ساحل خال من البلاستيك" وتشريعات ذات الأولوية في تنفيذ الإجراءات المذكورة قيدًا إلى إستراتيجية "ساحل خال من البلاستيك" وتشريعات ذات الأولوية في تنفيذ الإجراءات المذكورة قيدًا إلى إستراتيجية "ساحل خال من البلاستيك" وتشريعات ذات الأولوية في تنفيذ الإجراءات المذكورة قيدًا إلى إستراتيجية "ساحل خال من البلاستيك" وتشريعات ذات الأولوية في تنفيذ الإجراءات المذكورة قيدًا إلى إستراتيجية "ساحل خال من البلاستيك" وتشريعات ذات الأولوية في تنفيذ الإجراءات المذكورة قيدًا إلى إستراتيجية "ساحل خال من البلاستيك" وتشريعات ذات الأولوية في تنفيذ الإجراءات المذكورة قيدًا إلى إستراتيجية "ساحل خال من البلاستيك" وتشريعات ذات الأولوية في تنفيذ الإجراءات المذكورة قيدًا إلى إستراتيجية "ساحل خال من البلاستيك" وتشريعات ذات الأولوية في تنفيذ الإجراءات المذكورة قيدًا إلى إستراتيجية "ساحل خال من البلاستيك" وتشريعات ذات الأولوية في تنفيذ الإجراءات المذكورة قيدًا إلى إستراتيجية "ساحل خال من البلاستيك" وتشريعات ذات الأولوية في تنفيذ الإجراءات المذكورة قيدًا إلى إستراتيجية "ساحل خال من البلاستيك" وتشريعات ذات الأولوية في تنفيذ الإجراءات المذكورة قيدًا إلى إستراتيجية "ساحل خال من البلاستيك" وتشريعات ذات الأولوية في تنفيذ الإجراءات المذكورة قيدًا إلى إستراتيجية "ساحل خال من البلاستيك" وتشريعات ذات الأولوية في تنفيذ الإجراءات المذكورة قيدًا إلى إستراتيجية "ساحل خال من البلاستيك" وتشريعات ذات الأولوية في تنفيذ الإجراءات المذكورة قيدًا إلى إستراتيجية "ساحل خال من البلاستيك" وتشريعات ذات الأولوية في تنفيذ الإجراءات المذكورة قيدًا إلى إستراتيجية "ساحل خال من البلاستيك" وتشريعات ذات الأولوية في تنفيذ الإجراءات المذكورة قيدًا إلى إستراتيجية "ساحل خال من البلاستيك" وتشريعات ذات الأولوية في تنفيذ الإجراءات المذكورة قيدًا إلى إستراتيجية "ساحل خال من البلاستيك" وتشريعات ذات الأولوية في تنفيذ الإجراءات المذكورة قيدًا إلى إستراتيجية "ساحل خال من البلاستيك" وتشريعات ذات الأولوية في تنفيذ الإجراءات المذكورة قيدًا إلى إستراتيجية "ساحل خال من البلاستيك" وتشريعات ذات الأولوية في تنفيذ الإجراءات المذكورة قيدًا إلى إستراتيجية "ساحل خال من البلاستيك" وتشريعات ذات الأولوية في تنفيذ الإجراءات المذكورة قيدًا إلى إستراتيجية "ساحل خال من البلاستيك" وتشريعات ذات الأولوية في تنفيذ الإجراءات المذكورة قيدًا إلى إستراتيجية "ساحل خال من البلاستيك" وتشريعات ذات الأولوية في تنفيذ الإجراءات المذكورة قيدًا إلى إستراتيجية "ساحل خال من البلاستيك" وتشريعات ذات الأولوية في تنفيذ الإجراءات المذكورة قيدًا إلى إستراتيجية "ساحل خال من البلاستيك" وتشريعات ذات الأولوية في تنفيذ الإجراءات المذكورة قيدًا إلى إستراتيجية "ساحل خال من البلاستيك" وتشريعات ذات الأولوية في تنفيذ الإجراءات المذكورة قيدًا إلى إستراتيجية "ساحل خال من البلاستيك" وتشريعات ذات الأولوية في تنفيذ الإجراءات المذكورة قيدًا إلى إستراتيجية "ساحل خال من البلاستيك" وتشريعات ذات الأولوية في تنفيذ الإجراءات المذكورة قيدًا إلى إستراتيجية "ساحل خال من البلاستيك" وتشريعات ذات الأولوية في تنفيذ الإجراءات المذكورة قيدًا إلى إستراتيجية "ساحل خال من البلاستيك" وتشريعات ذات الأولوية في تنفيذ الإجراءات المذكورة قيدًا إلى إستراتيجية "ساحل خال من البلاستيك" وتشريعات ذات الأولوية في تنفيذ الإجراءات المذكورة قيدًا إلى إستراتيجية "ساحل خال من البلاستيك" وتشريعات ذات الأولوية في تنفيذ الإجراءات المذكورة قيدًا إلى إستراتيجية "ساحل خال من البلاستيك" وتشريعات ذات الأولوية في تنفيذ الإجراءات المذكورة قيدًا إلى إستراتيجية "ساحل خال من البلاستيك" وتشريعات ذات الأولوية في تنفيذ الإجراءات المذكورة قيدًا إلى إستراتيجية "ساحل خال من البلاستيك" وتشريعات ذات الأولوية في تنفيذ الإجراءات المذكورة قيدًا إلى إستراتيجية "ساحل خال من البلاستيك" وتشريعات ذات الأولوية في تنفيذ الإجراءات المذكورة قيدًا إلى إستراتيجية "ساحل خال من البلاستيك" وتشريعات ذات الأولوية في تنفيذ الإجراءات المذكورة قيدًا إلى إستراتيجية "ساحل خال من البلاستيك" وتشريعات ذات الأولوية في تنفيذ الإجراءات المذكورة قيدًا إلى إستراتيجية "ساحل خال من البلاستيك" وتشريعات ذات الأولوية في تنفيذ الإجراءات المذكورة قيدًا إلى إستراتيجية "ساحل خال من البلاستيك" وتشريعات ذات الأولوية في تنفيذ الإجراءات المذكورة قيدًا إلى إستراتيجية "ساحل خال من البلاستيك" وتشريعات ذات الأولوية في تنفيذ الإجراءات المذكورة قيدًا إلى إستراتيجية "ساحل خال من البلاستيك" وتشريعات ذات الأولوية في تنفيذ الإجراءات المذكورة قيدًا إلى إستراتيجية "ساحل خال من البلاستيك" وتشريعات ذات الأولوية في تنفيذ الإجراءات المذكورة قيدًا إلى إستراتيجية "ساحل خال من البلاستيك" وتشريعات ذات الأولوية في تنفيذ الإجراءات المذكورة قيدًا إلى إستراتيجية "ساحل خال من البلاستيك" وتشريعات ذات الأولوية في تنفيذ الإجراءات المذكورة قيدًا إلى إستراتيجية "ساحل خال من البلاستيك" وتشريعات ذات الأولوية في تنفيذ الإجراءات المذكورة قيدًا إلى إستراتيجية "ساحل خال من البلاستيك" وتشريعات ذات الأولوية في تنفيذ الإجراءات المذكورة قيدًا إلى إستراتيجية "ساحل خال من البلاستิก
Introduction

Background

The Atlantic Ocean and the Mediterranean Sea are key drivers for Morocco’s social development and economic growth. About 81 percent of industries are concentrated along the country’s coastline, with coastal areas contributing 59 percent of its gross domestic product (GDP) and generating 52 percent of jobs. Yet, despite their economic and social importance, these areas face the triple challenge of climate change, biodiversity loss, and pollution. Meanwhile, plastic pollution entering the Mediterranean Sea costs Morocco between US$750 million and US$2.5 billion each year. Without decisive action, plastic pollution is projected to almost triple by 2040.

The Mediterranean Sea has become a global plastic hotspot: every day, 6.26 kilograms of waste per kilometer of Morocco’s coastline enter the Mediterranean Sea. In total, 75,000 tons of plastic waste leaks from the Moroccan coastline into the marine environment every year. Recent surveys found an average of 730 litter items per 100 meters on Moroccan beaches.

Figure 2: Plastic leakage from Moroccan coasts


1 World Bank 2020.  
2 World Bank 2023.  
4 Soudi et al. 2022a.
Morocco needs to address these threats to allow its blue economy to develop its full potential. In 2021, the government adopted the New Development Model, which was prepared by the Special Commission for the new development model under the auspices of His Majesty King Mohammed VI and which acknowledges the importance of the blue economy. The New Development Model calls for investing in traditional blue sectors such as fisheries, tourism, and maritime shipping, as well as high-potential sectors such as aquaculture and marine renewable energies.

Ending plastic pollution is essential for the development of the blue economy. In 2021, in partnership with the World Bank, the Government of Morocco prepared its first assessment of the status of plastic pollution along its coastline. The assessment presented the status of plastic pollution, identified plastic pollution hotspots (Box 1), and analyzed opportunities for—and challenges to—addressing plastic pollution. Based on this assessment, and with active participation across sectors and throughout the plastic value chain, the government developed its Littoral Sans Plastique (LISP, or Plastic-Free Coastline) Strategy.

---

Box 1: Plastic pollution hotspots in Morocco

A pollution hotspot analysis was conducted as part of the Government of Morocco’s assessment of marine plastic pollution. The analysis used 14 indicators under three categories: (i) drivers and pressures; (ii) environmental state; and (iii) socioeconomic impact. The analysis showed that the city of Casablanca was a “priority hotspot”. The cities of Tangier, Tétouan, and Kenitra were classified as “hotspots”, while Nador, Rabat-Salé, Mohammedia, El Jadida, Safi, Agadir, and Sidi Ifni were “sensitive areas”.

Figure 3: Plastic pollution hotspots in Morocco


---

9 The “blue economy” refers to the sustainable use of ocean resources for economic growth, improved livelihoods, more jobs, and better ocean ecosystem health.
10 Soudi et al. 2022a.
11 World Bank 2022.
The LISP Strategy aspires to “reduce plastic leakage from land and marine sources to the marine and coastal environment, fulfill Morocco’s international and regional commitments, and make Morocco a model country in the mitigation of marine plastic waste in the region”. The Strategy sets out six strategic objectives (Figure 4).

**Figure 4: The LISP Strategy and its strategic objectives**

<table>
<thead>
<tr>
<th>Strategic Objective 1</th>
<th>Strategic Objective 2</th>
<th>Strategic Objective 3</th>
<th>Strategic Objective 4</th>
<th>Strategic Objective 5</th>
<th>Strategic Objective 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improve governance and strengthen the technical and managerial capacities of local coastal authorities and all stakeholders concerned to ensure integrated, efficient, and sustainable management of plastic waste from land and sea sources.</td>
<td>Prevent and reduce plastic waste through the adoption of circular economy approaches.</td>
<td>Connect and integrate the informal “ecosystem” into the value chain, to help communities, municipalities, and waste management companies recover post-consumer waste in an efficient and more inclusive manner.</td>
<td>Strengthen communication, education, and awareness-raising of stakeholders on the impacts of marine debris and on preventive measures to change behaviors and habits regarding the use of single-use plastics and plastic bags.</td>
<td>Strengthen monitoring, research, innovation, and knowledge-sharing at national and regional levels to ensure sustainable management of plastic waste along the value chain.</td>
<td>Contribute to the promotion and implementation of measures undertaken at the regional level (Atlantic Africa and MENA countries) to prevent and reduce plastic pollution from land and marine sources.</td>
</tr>
</tbody>
</table>

**Figure 5: LISP stakeholders in Morocco**

- **Ministerial departments responsible for the coastline and the sea:**
  - Department of Sustainable Development (DDD)
  - Royal Navy
  - National Ports Agency
  - National Office of Fisheries
  - Ministry of Industry and Trade
  - Producers
  - Importers
  - Moroccan Federation of Plastics
  - Plastics and rubber technical center
  - Assemblers/distributors
  - Marine Fishery
  - Agriculture

- **Plastics industry planning, regulation, green economy:**
  - Association of Plastic Valorisers
  - Sorting and recycling cooperatives
  - Private recycling companies
  - Individual reclaimers
  - NGOs

- **Recovery: Sorting and recycling of plastic waste (Informal and formal):**
  - Department of Sustainable Development (DDD)
  - Royal Navy
  - National Ports Agency
  - MI-DGCT
  - MEF
  - Customs and Excise Administration (ADII)
  - Directorate of Marine Merchant
  - Department of Marine Fisheries

- **Agricultural plastic waste management:**
  - Tourism
  - National Office of Fisheries
  - Agency for Aquaculture Development of Morocco
  - National Ports Agency
  - Tanger Med Port Authority

- **Household waste management:**
  - Director-General for Territorial Communes (MI-DGCT)
  - Local and regional authorities
  - Private companies

- **Sectors of activity in the land-sea interface and at sea:**
  - MI-DGCT
  - Agriculture
  - Tourism
  - National Institute for Fisheries Research (INRH)

- **Research, surveillance and monitoring of marine debris:**
  - DDD/LNSEP
  - National Institute for Fisheries Research (INRH)
  - Universities

*Source: World Bank 2022.*
The LISP Strategy clearly demonstrates the country’s vision to move towards a circular economy model and calls for greater integration of the informal waste sector. Transitioning to a circular economy model will stimulate innovation, create new jobs, and enhance resource efficiency. Globally, a systemic transition to a circular plastic economy is expected to generate 700,000 net new jobs in middle- and low-income countries by 2040.11 In addition, the transition needs to be inclusive and socially fair. In Morocco, the informal sector plays a major role in plastic management, and integrating the informal waste sector into the formal system could help generate sustainable livelihoods while ensuring decent and fair working conditions for informal workers.

The Action Plan supports the LISP Strategy to achieve this vision.14 It describes actionable, concrete measures and projects under each strategic objective. The government is identifying 15 priority projects—with respective estimated budgets—based on the Action Plan (Annexure 1). These projects cover actions on different segments of the plastic value chain to holistically address plastic pollution, encompassing upstream and downstream solutions across sectors.

A National Plastics Committee consisting of representatives from relevant ministries, experts, and the private sector will oversee the LISP Strategy’s implementation. This committee currently serves as a national coordination mechanism to formulate national positions for the Intergovernmental Negotiating Committee (INC) of the “international legally binding instrument on plastic pollution, including in the marine environment”.14 The committee’s function will be extended to provide strategic guidance to, and monitor the progress of, the LISP Strategy. Regular progress reviews will be carried out with the monitoring and evaluation framework of the Strategy.

The LISP Strategy has already shown positive impacts. For example, the Ministry of Energy Transition and Sustainable Development, the Ministry of Economy and Finance, and the Ministry of Industry and Trade are preparing a framework agreement with the country’s Groupement d’Intérêt Économique des Plasturgistes (Plastic Economic Interest Group) to promote the integrated management of plastic waste. Furthermore, donors and development partners have shown an interest in supporting the government in implementing the LISP Strategy. For example, DDD has started working with the United Nations Industrial Development Organization on a “Switch to Circular Economy Value Chains” project, which is expected to accelerate the transition towards a circular plastic economy.

The LISP Strategy and related multistakeholder partnerships will serve as the basis for the government to implement a future legally binding international instrument on plastic pollution. The Intergovernmental Negotiating Committee (INC) is currently preparing this legal instrument. Morocco is already well placed to implement this future legal instrument because the LISP Strategy provides the basis for nationally coordinated cross-sectoral action. The cross-sectoral and multistakeholder mechanism anchored to the LISP Strategy—coordinated by the National Plastics Committee—could serve as a vehicle to implement the future legally binding instrument at the national level.

12 Soudi et al. 2022b.
13 In February 2022, at the resumed fifth session of the United Nations Environment Assembly (UNEA-5.2), Resolution 5/S was adopted to develop an international legally binding instrument on plastic pollution, including in the marine environment, with an ambition to complete the negotiations by the end of 2024.
Initiating LISP Strategy implementation

The Government of Morocco has already started implementing the LISP Strategy. To launch its implementation, the government carried out priority activities in the Action Plan in partnership with the World Bank. These priority activities were identified by the government based on the results of the diagnostics and in consultation of partners to holistically support the implementation of the Strategy (Figure 7).

This background technical note presents a summary of the priority actions carried out in partnership with the World Bank between 2022 and 2023. It illustrates the results of the following seven deliverables:

- **Deliverable 1**: Assess plastic circularity
- **Deliverable 2**: Examine potential economic instruments to phase out single-use plastics
- **Deliverable 3**: Reduce the use of plastics in agriculture
- **Deliverable 4**: Design a public-private network of coastal tourism actors to reduce single-use plastics in tourism establishments in the Souss-Massa region
- **Deliverable 5**: Analyze the role of the informal waste sector in plastic waste management
- **Deliverable 6**: Prepare a LISP communication plan
- **Deliverable 7**: Design an integrated information management system to strengthen the monitoring program.

These deliverables build on the diagnostic report and the analytical work conducted between 2021 and 2022.

The deliverables demonstrate the progress of the partnership between the World Bank and Morocco to address plastic pollution. Each deliverable contributes to implementing the LISP Strategy to free the Moroccan coastline from plastics.

---


16 The work is summarized in World Bank. 2022. "Plastic-Free Coastlines: A Contribution from the Maghreb to Address Marine Plastic Pollution".
Deliverable 1: Assess plastic circularity

Overview

This deliverable aimed to assess the current level of circularity and supplement the assessment under the diagnostics on plastic pollution. This analysis uses the methodology proposed by Horvath et al. (2018) to evaluate the circular economic value (CEV) based on the plastics material flow. This methodology uses six indicators that consider production and international trade of plastics, plastic recycling, and plastic waste management. The six indicators are:

- MIM: Ratio of imported plastic raw materials to total volume of plastic manufacturing inputs
- MEX: Ratio of exported plastic products to total volume of plastic production
- LCM: Ratio of non-recyclable plastic waste to total plastic waste
- CML: Ratio of non-recycled recyclable plastic waste to total recyclable plastic waste
- WCL: Ratio of uncollected plastic waste to total plastic waste
- WPL: Ratio of collected non-recycled plastic waste to the quantity of collected plastic waste.

The CEV is calculated as below:

\[
\text{CEV} = 100 - \left( \frac{\text{IM}_{\text{rm}} + \text{EX}_{\text{mo}} + \text{NR}_{\text{pw}} + \text{NR}_{\text{rpw}} + \text{WCL}_{\text{cpw}}}{\text{T}_{\text{rm}} + \text{T}_{\text{mo}} + \text{T}_{\text{pw}} + \text{T}_{\text{rpw}} + \text{T}_{\text{cpw}}} \right) \times 100
\]

The CEV calculation examines the input and output material flow for a given system and describes the ratio between the linear and circular processes. This means that CEV assesses a system’s circularity and thus increases as the circularity of plastic material flow increases. The CEV will be at 100 percent when the plastic material flow becomes completely circular. Thus, the CEV serves as a measurement of progress towards a circular economy and helps identify aspects that need to be improved.

---

17 Soudi et al. 2022a.
18 Where CEV: circular economy value; MIM: ratio of imported plastic raw materials (IM$_{\text{rm}}$) to the total volume of plastic manufacture inputs (T$_{\text{rm}}$); MEX: ratio of exported plastic products (EX$_{\text{mo}}$) to the total volume of plastic manufacture outputs (T$_{\text{mo}}$); LCM: ratio of non-recyclable plastic waste (NR$_{\text{pw}}$) to the total plastic waste amount (T$_{\text{pw}}$); CML: ratio of non-recycled recyclable plastic waste (NR$_{\text{rpw}}$) from the total recyclable plastic waste (T$_{\text{rpw}}$); WCL: ratio of uncollected plastic waste (WCL$_{\text{cpw}}$) to the total plastic amount (T$_{\text{cpw}}$); and WPL: ratio of non-recycled collected plastic waste (WPL$_{\text{cpw}}$) to the collected plastic waste amount (T$_{\text{cpw}}$).

Source: Ron Lach, pexels.com
Results

The analysis calculated the current CEV for Morocco (Figure 8) at 59 percent, meaning there is considerable potential for improving the level of circularity of the plastic material flow in Morocco.

Figure 8: The circular economy value in Morocco

- MIM: Ratio of imported plastic raw materials to total volume of plastic manufacturing inputs = 70 percent
- MEX: Ratio of exported plastic products to total volume of plastic production = 9 percent
- LCM: Ratio of non-recyclable plastic waste to total plastic waste = 16 percent
- CML: Ratio of non-recycled recyclable plastic waste to total recyclable plastic waste = 64 percent
- WCL: Ratio of uncollected plastic waste to total plastic waste = 15 percent
- WPL: Ratio of collected non-recycled plastic waste to the quantity of collected plastic waste = 73 percent

The analysis showed that the ratio of non-recycled recyclable plastic waste to total recyclable plastic waste (CML) is 64 percent, meaning that 64 percent of plastic waste that can be recycled, is not. Additional findings include:

- The amount of collected plastic waste is high, but there is room for improvement. Although the ratio of uncollected plastic waste to total plastic waste (WCL) is low (15 percent), improving waste collection in rural areas would likely help improve plastic circularity. The study estimated that the average collection rate in rural areas in 2019 was 10 percent, while in urban areas the collection rate was significantly higher at 96 percent.
- Sorting and recycling systems can be improved. The ratio of collected, non-recycled plastic waste to the quantity of collected plastic waste (WPL) is 73 percent, indicating that the main obstacle for Morocco’s circular plastic economies lies in its sorting and recovery systems.
- The country could reduce its heavy dependency on imported virgin materials. The ratio of imported plastic raw materials to total volume of plastic manufacturing inputs (MIM) is 70 percent, suggesting that Morocco’s plastics industry depends heavily on imported virgin materials. Increasing plastic recycling could reduce the dependency on imported plastic materials and improve plastic circularity.
- Implementing extended producer responsibility (EPR) principles would incentivize producers to design products for recyclability and contribute to the circularity of plastic waste.

Recommendations

To enhance plastic circularity, a range of recommendations were formulated focusing on governance and planning, regulations, financial incentives, and improved waste management.

Goverance and planning

- Enhance coordination among stakeholders at the central and regional levels, including the DDD, the Directorate General of Local Authorities, and local authorities
- Develop industrial zones dedicated to recycling, allowing recyclers to acquire land at an affordable price.

Regulations

- Finalize and implement the law on the circular economy
- Develop regulations to set quality standards for recycled plastics
- Implement EPR principles, starting with PET plastics.

Financial incentives

- Use economic incentives (such as subsidies for recycling companies) to support the acquisition of appropriate technology.

Improved waste management

- Improve plastic sorting and recycling by operationalizing all 26 sorting centers that have been planned. Source separation would also help improve the recycling rate
- Improve waste collection in rural areas
- Support the formalization of the informal sector in plastic recycling.

In addition, the following measures are recommended to monitor the progress towards a circular economy:

- Improve data collection on plastic circularity. Accurate data to assess plastic circularity in Morocco is often unavailable. Improvements to data collection and management can help with periodically measuring progress towards a circular economy model.
- Reassess the CEV at a later point. The CEV could be recalculated in future to evaluate the impact of the LISP Strategy in progressing towards a circular economy in Morocco.
Deliverable 2: Examine potential economic instruments to phase out single-use plastics

Overview

This deliverable aimed to identify potential economic instruments that could be applied in Morocco to reduce the production and use of single-use plastics. This deliverable built on the diagnostic of marine plastic pollution, which demonstrated that single-use plastics accounted for most of the common items found on Moroccan beaches. This activity was identified as a priority given that the global consensus maintains that upstream interventions should be implemented together with end-of-the-pipe solutions, and that it will not be possible to recycle our way out of plastic pollution.

Economic instruments that help reshape market supply and demand—such as taxes, subsidies, and mandatory minimum prices—are useful in this regard. Therefore, the study examined which of these potential economic instruments could be used in Morocco. The study drew on a survey relating to beach litter and information obtained from waste-sorting centers, with a focus on the following single-use plastic items: cigarette butts and filters, candy and potato-chip packaging, cups, glasses, lids, food containers (including fast-food containers), and small plastic bags (for example, freezer bags).

Several potential economic instruments were identified based on the experiences of other countries, an assessment of Morocco’s legal framework and national context, and the availability of alternatives to single-use plastics. Stakeholder consultations ranked potential instruments to assess their feasibility and ranking scores were calculated based on the following criteria:

- Change in imports
- Change in production
- Change in usage
- Environmental impact due to the introduction of the economic instrument
- Impact on waste management
- Governance costs
- Potential revenue for the government
- Technical feasibility
- Legal requirements
- Expected timeline for implementation.

The consultation and rankings highlighted the following four options, with Option 1 being most relevant. These four relevant and feasible options are discussed in greater detail on page 33.

- Option 1: Establish an internal consumption tax (ICT) on problematic plastic products (+13)
- Option 2: Adjust the current plastic ecotax according to the type of plastic (raw material) or the type of plastic products imported (+1)
- Option 3: Apply the ecotax to imported packaging via a declaration (+4)
- Option 4: Introduce a mandatory price for fast-food plastic packaging (+4).

Supporting LISP Strategy Implementation

Option 1: Establish an internal consumption tax on problematic plastic products

An ICT generally applies to the economic value of products such as tobacco or alcohol. A plastics ICT could apply to most problematic single-use plastic products, such as polystyrene fast-food packaging and plastic cups. The revenue from an ICT could be used to implement the LISP Strategy and promote better plastic waste management systems.

To illustrate this point, a recent World Bank study has estimated the damage cost of plastic waste in the global marine environment to be in the range of US$10,000 and US$33,000 per ton. If we include this damage cost to the cost of a single-use plastic bag, its price will increase by 6 to 18 cents. At this price, the demand for single-use plastic bags will decrease to almost zero, solving the problem of single-use plastic.

Option 2: Adjust the percentage of the current plastic ecotax according to the type of plastic (raw material) or the type of plastic products imported

Morocco’s current ecotax applies to the import of plastic products at a rate of 1 percent ad valorem for goods defined in the international Harmonized Commodity Description and Coding System (Harmonized System). The resulting revenues flow into the Fonds National de l’Environnement et du Développement Durable (FNEDD, National Environment and Sustainable Development Fund) and used for recycling projects. This instrument could be adjusted to apply a higher ad valorem percentage for the most problematic plastics.

Option 3: Apply the ecotax to imported packaging via a declaration

In principle, Morocco’s ecotax applies to plastic packaging produced within the country but not to single-use plastic packaging imported into Morocco. Option 3 represents a compulsory declaration for importers that place large quantities of plastic packaging on the Moroccan market. Under such a scheme, the declaration could incur a payment based on a defined value, and the proceeds channeled to the FNEDD.

To implement this option, the feasibility of introducing a mandatory declaration for importers that place more than a certain amount of plastic packaging on the Moroccan market needs to be assessed. Initially, such a threshold amount should be high enough to limit the number of importers that would be subject to the declaration.

Option 4: Introduce a mandatory price for fast-food plastic packaging

Polystyrene plastic containers are often used for fast food in Morocco. A legal obligation for fast-food outlets to sell polystyrene containers at a minimum price would encourage vendors to choose better alternatives such as cardboard containers while encouraging consumers to bring their own containers. The revenue generated by the sale of such packaging could be collected and used for environmental purposes. However, the multiplicity of players involved in this option reduces its feasibility.

---

19 World Bank 2023
20 The “Harmonized System” is an international commodity classification system developed by the World Customs Organization.
21 Either because it is itself taxed on leaving the factory, or because it uses a raw material that is taxed on production or import.
Prepare a circular to increase the ICT while considering the ongoing discussion on the legally binding instrument on plastic pollution. It is recommended that the government consider implementing Option 1—which was identified as the most relevant option—through a circular without requiring a new law. It would increase ecotax revenue and contribute to improved plastic waste management. The government may prioritize targeted single-use plastic products and conduct additional analyses to examine revenue scenarios based on ICT levels and assess potential environmental and social impacts from alternative products that will be indirectly favored by an ICT. It is recommended to consider the discussion under the INC for the legally binding instrument on plastic pollution when defining target single-use plastic products.24

Organize stakeholder consultation, particularly with the private sector. Clear and transparent communication and consultation, particularly with the private sector, which will be affected by the change, will enhance support for implementing selected economic instruments. Mutually agreed timelines would also allow stakeholders to prepare for the changes such economic instruments would trigger.

Maintain the economic instruments, at least initially, while implementing an EPR scheme on PET. Enforcing current work to develop an EPR scheme on PET bottles would enhance plastic circularity. Plastic products subject to economic instruments such as the ecotax, ICT, or compulsory pricing could also be subject to EPR and importer responsibility systems. Therefore, existing or planned taxes and economic instruments should be maintained, at least initially, in a future EPR system.25

Box 3: Improving policy and legal frameworks to address marine plastic pollution in Morocco

Morocco has a range of legal instruments to address plastic pollution (Table 2). As part of the diagnostics of the status of marine plastic pollution, a policy and legal analysis was conducted to identify opportunities and challenges to move towards a circular plastic economy.26 The analysis outlined the main opportunities presented by the current plastic waste management system in Morocco related to the following: (i) strengthening the extended producer responsibility system; (ii) organizing the legal aspects of eco-organizations and strengthening their capacities; (iii) optimizing the waste-sorting process at the source; (iv) formalizing the informal waste collection and recovery sector; (v) adapting the regulations on plastic waste; and (vi) improving coordination between institutions and strengthening their capacities. The analysis presented 19 recommendations within these six areas (Table 3 on page 36).

Box 3 (continued)

Table 2: Main legal instruments in Morocco related to management of plastic pollution

<table>
<thead>
<tr>
<th>Year</th>
<th>Law or Decree</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>Law No. 99-12</td>
<td>The framework law No. 99-12 on the National Charter for the Environment and Sustainable Development stipulates, in its article 8, the updating of the legislative framework relating to waste, including the promotion of waste recovery techniques and the integration of EPR principles.</td>
</tr>
<tr>
<td>2006</td>
<td>Law No 28-00</td>
<td>Law n° 28-00 relating to waste management and disposal aims to lay the foundations of a waste management policy.</td>
</tr>
<tr>
<td>2008</td>
<td>Decree No. 2-07-253</td>
<td>Decree n° 2-07-253 of July 18, 2008, on the classification of wastes and fixing the list of hazardous wastes, provides an inventory and classification of waste.</td>
</tr>
<tr>
<td>2012</td>
<td>Decree No. 2-12-172</td>
<td>This decree sets the technical requirements for the disposal and recovery processes of waste by incineration.</td>
</tr>
<tr>
<td>2016</td>
<td>Law No. 113-14</td>
<td>This organic law specifies municipal creation and management of public services and facilities necessary to collect, transport, treat, and recover household waste.</td>
</tr>
<tr>
<td>2006</td>
<td>Law No. 54-05</td>
<td>Law No. 54-05 applies, according to Article 1, to contracts for the delegated management of public services and facilities entered into by local authorities or their groupings and by public establishments.</td>
</tr>
<tr>
<td>2019</td>
<td>Law No. 13-101</td>
<td>Relates to pleasure boating, differentiating the applicability of plastics laws from those that apply to commercial or fishing vessels; it completes the Moroccan maritime legislation previously based on the Maritime Code of Commerce.</td>
</tr>
<tr>
<td>2010</td>
<td>Law No 22-10</td>
<td>Law No. 22-10 on the use of degradable or biodegradable plastic bags and sacks prohibits the manufacture of non-degradable or non-biodegradable plastic bags and sacks for the local market, as well as their import, holding for sale, offering for sale, sale, or distribution.</td>
</tr>
<tr>
<td>2015</td>
<td>Law No. 77-15</td>
<td>This law supplemented Law No. 22-10 to stipulate the ban on the manufacture, import, export, marketing, and use of plastic bags.</td>
</tr>
<tr>
<td>2020</td>
<td>Law 57-18</td>
<td>Amends and supplements Law No. 77-15; Dahir no. 126.19.1 also further amends Law 57-18 with new definitions, reporting requirements designed to control manufacturers’ activities, and clearer definition of agents’ enforcement and inspection roles.</td>
</tr>
<tr>
<td>2015</td>
<td>Law No 81-12</td>
<td>This law establishes the basic rules for developing, protection, enhancement, and conservation of the coastline.</td>
</tr>
<tr>
<td>2018</td>
<td>Decree No. 2-17-587</td>
<td>Decree No. 2-17-587 of December 18, 2018, setting the terms and conditions for the import, export and transit of waste.</td>
</tr>
</tbody>
</table>

24 See the zero draft UNEP/IPPL/INC.3/S.1 as well as the discussion at INC 3 on problematic and avoidable plastic products, including short-lived and single-use plastic products and intentionally added microplastics UNEP/IPPL/INC.3/S.1 section C.24
25 Morocco is currently developing an EPR scheme for plastic bottles. It is also in the process of revising the waste law to introduce EPR principles into the legal framework.25
26 Sudari et al. 2020b.
Deliverable 3: Reduce the use of plastics in agriculture

Overview

The agriculture sector uses plastic products extensively to enable earlier harvests, reduce the use of herbicides and pesticides, protect food products, and save water. However, there is growing concern that degraded plastics are contaminating the soil and having a negative impact on biodiversity and soil health. A decline in soil functioning could reduce agricultural productivity and threaten long-term food security, while poor plastic waste management practices—such as burning—pose health and environmental risks.

In Morocco, plastics primarily feature in agriculture in irrigated areas, particularly in Souss-Massa, Rabat-Salé Kénitra, Tanger-Tétouan, and the Casablanca-Settat regions, which use plastics for greenhouses, mulching, small tunnels, and temporary covers, among other applications. In 2021, the total amount of agricultural plastic use in Morocco was estimated at about 110,000 tons, which is expected to increase with the growth of the agricultural sector. Plastic waste generated from agriculture is not effectively collected or recycled, and it is often poorly managed, despite the clear provisions set out in Law No 28-00 on the management of household and similar waste.

This deliverable therefore aimed to provide guidance and identify options and measures to reduce plastic use in Morocco’s agricultural sector. The study focused on measures to reduce plastic use in the upstream plastics value chain as opposed to end-of-life waste management measures. This upstream focus makes this deliverable a unique contribution, since previous studies have largely focused on improving agriculture plastic waste management at the end of the lifecycle.

Results

An international benchmarking exercise was conducted and an Action Plan was developed to address agricultural plastics. The Action Plan complements the LISP Strategy.

International benchmarking

An international benchmarking study was conducted to identify good practices for managing agricultural plastics, with a focus on prevention and reduction. The literature review found that:

- A balance should be found between the benefits of agricultural plastics and their negative effects.
- It is difficult to manage and recycle agricultural plastic waste products at the end of their lifecycle due to their contamination by soil, agrochemicals, plant residues, and moisture.
- It is difficult to collect mulching plastic films.

The literature review also showed that, at the international level, there are still knowledge gaps on how to address the problem of agricultural plastics. Further investigation could include:

- Global flows and the fate of agricultural plastics
- The quantity, composition, location, and method of agricultural plastic use
- The environmental fate of agricultural plastics throughout the supply chain, both during use and at the end of life
- The economic costs of agricultural plastic pollution

International benchmarking

Table 3: Recommendations to enhance policy and legal frameworks to address plastic pollution in Morocco

<table>
<thead>
<tr>
<th>Action Area</th>
<th>Recommendations</th>
</tr>
</thead>
</table>
| 1: Strengthen the EPR system | • Recommendation 1: Implement the EPR system for high-abundance plastic products in the marine environment and on beaches  
• Recommendation 2: Apply EPR to fishing gear to ensure that manufacturers, not fishermen, bear the costs of collecting nets lost at sea |
| 2: Organize the legal aspects of eco-organizations and strengthen their capacities | • Recommendation 3: Establish and institutionalize a coordination mechanism between plastic waste generators and institutions in charge of coastal and marine protection |
| 3: Optimize the waste source separation process | • Recommendation 4: Support the sorting, recovery and recycling of plastic waste in small coastal settlements  
• Recommendation 5: Improve NGO work with households to promote source separation  
• Recommendation 6: Organize and implement pilot actions with mass retailers to test the implementation of a deposit system on single-use beverage containers  
• Recommendation 7: Sign voluntary agreements with coastal tourism and recreation establishments to prevent the use of single-use plastics |
| 4: Formalize the informal waste collection and recovery sector | • Recommendation 8: Connect and integrate reclaimers into the value chain |
| 5: Adapt the regulations on plastic waste | • Recommendation 9: Revise the waste catalog to include waste generated by marine activities  
• Recommendation 10: Improve the effectiveness of Annex 5 of the MARPOL Convention, through the implementation of the new Law 65/18 on ship-source pollution and the strengthening of controls  
• Recommendation 12: Establish a procedure for the marking and recovery of lost or abandoned fishing gear  
• Recommendation 13: Define, through decree, the categories of products subject to truth-in-advertising labeling obligations  
• Recommendation 14: Develop and adopt a standard for the recovery and recycling of plastic waste, in accordance with ISO guidelines (per ISO standard 19270:2008) |
| 6: Improve coordination between institutions and strengthen their capacities | • Recommendation 15: Accelerate the application of the provisions of Law 28-00 (as revised), regarding institutional organization  
• Recommendation 16: Strengthen the prerequisites of the Integrated Coastal Management Commission  
• Recommendation 17: Strengthen controls to combat the informal production of single-use plastic bags prohibited by law  
• Recommendation 18: Strengthen the monitoring of compliance with regulations on the collection and treatment of plastic waste from marine activities, especially in identified hot-spots  
• Recommendation 19: Inform and strengthen the capacity of local coastal authorities to assess the socio-economic and environmental impacts of plastic waste |

Notes: 27 Based on communication with Mr. Charai of AMVRP in 2022.
• Appropriate policy tools and instruments for managing agricultural plastic waste
• The economic and technical feasibility of measures to reduce agricultural plastics at scale
• The lifecycle of fossil and bio-based agricultural plastics (biodegradable and non-biodegradable)
• Alternative products, together with practices to determine their relative risks and benefits for specific applications in agrifood value chains
• The pathways of plastics, microplastics, and nanoplastics in agro-ecosystems and impacts on food safety and human health, including their potential for transfer and accumulation along the food chain and in agrifood systems
• The behavior and degradation rate of biodegradable products in different environments and under different temperature and humidity conditions.

Action plan to address agricultural plastics
Based on the international benchmark study and in support of the LISP Strategy, a draft Action Plan has been prepared to reduce the use of plastics in agriculture in Morocco (Table 4 on page 40). This plan is in line with the LISP Strategic Objective 2 and aims to “contribute to the reduction of plastic pollution of aquatic and terrestrial life, the preservation of marine and terrestrial biodiversity, and the avoidance of contamination of agricultural soils by microplastics that risk being transferred into food chains”.

Based on the scientific literature, Morocco’s national context, the ease of collecting, and the potential impact on the environment, the following plastic products were considered priorities:

• Plastic mulch film
• Plastic films for greenhouses
• Fertilizers coated with plastic polymers
• Plant-support strings
• Silage films
• Drip irrigation, piping for localized irrigation, and related accessories.

The suggested first step to start implementing the Action Plan is a pilot project in the Souss-Massa region. The pilot project would focus on testing alternatives to the plastic mulching film and plastic twines used for greenhouse crops, especially tomatoes. It would assess the health and environmental benefits of reducing plastic use and examine the possibility of composting organic waste together with biodegradable plastics.

Stakeholder consultation
A stakeholder consultation workshop assessed the feasibility of implementing the proposed Action Plan. The stakeholders recommended starting with pilot studies to assess the feasibility of the proposed options.

In addition to the workshop, a survey captured agricultural producers’ feedback on the proposed Action Plan. The survey targeted agricultural producers and their professional organizations in the Souss-Massa, Rabat-Salé, Kénitra, and Casablanca-Settat regions. The survey demonstrated that 85 percent of farmers were aware of, and concerned about, the increasing use of agricultural plastics. Ninety percent of the respondents were also aware of microplastic pollution. However, 60 percent of respondents indicated that they were not aware of options to reduce the use of plastics in agriculture. In addition, they were worried about the economic and technical feasibility of carrying out some of the proposed options. Their concerns are mainly related to cost and the performance of plastics alternatives, including biodegradable.

Recommendations
In relation to the Action Plan discussed above, the following actions are recommended:

Start with technical and economic feasibility studies and demonstration trials, targeting mulching film and twines.

The following two trials are suggested:

• Replace mulching film with biodegradable mulching in an open field, because mulching film is difficult to collect and recycle
• Replace plastic trellising string (used in large quantities for greenhouse tomatoes) with biodegradable string

Analyze the possibility of collecting and recycling agricultural plastics. Given stakeholders’ interest in improving plastic waste management, the feasibility of collecting and recycling agricultural plastics should be examined, building on the previous technical study supported by the World Bank.

Develop partnerships to implement actions proposed in the draft Action Plan. Multistakeholder partnerships that include the agriculture actors, the plastics industry, and research institutions are needed to implement the proposed actions.

Supporting LISP Strategy Implementation

28 De Nardi et al. 2022.

Plastic-Free Coastline: Addressing Plastic Pollution in Morocco
Table 4: Action Plan to reduce the use of agricultural plastics in Morocco

<table>
<thead>
<tr>
<th>Prioritized plastic product</th>
<th>Options</th>
<th>Actions</th>
<th>Indicative timeline</th>
<th>Additional research needed and pre-conditions for actions</th>
<th>Indicative timeline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plastic mulching film</td>
<td>Option 1: 100 percent natural, biodegradable mulch film</td>
<td>• Implement appropriate policies (for example, a tax on conventional plastics or subsidies for biodegradable plastics)</td>
<td>2028</td>
<td>• Test the effectiveness of using biodegradable mulch films in different cropping systems (soybean, wheat, greenhouse crops, etc.); considering weather resistance and the speed of biodegradation in the soil (effects of abiotic factors and soil properties)</td>
<td>2023–2024</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Certify materials: Conduct tests on new biodegradable mixtures to prove their total biodegradability before they are put on the market</td>
<td></td>
<td>• Conduct pilot trials for greenhouse and open field crops</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Develop a standard for specifications and requirements for biodegradable films made from thermoplastic materials (for use in mulching applications in agriculture and horticulture)</td>
<td></td>
<td>• Conduct a cost-benefit analysis</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Option 2: Ban the use of PVC (polyvinyl chloride) in mulching film</td>
<td>• Implement regulations to ban the use of PVC in mulching film and other agricultural plastic products</td>
<td>2028</td>
<td>• Establish a progressive replacement plan</td>
<td>2023–2024</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Set up incentive instruments</td>
<td>2026</td>
<td>• Design film that resists tearing and damage during use and recovery</td>
<td>2023–2024</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Establish a progressive replacement plan</td>
<td>2026</td>
<td>• Study the financial and ecological viability of this alternative (in terms of greenhouse gas emissions and plastic residues in soil)</td>
<td>2023–2024</td>
</tr>
<tr>
<td></td>
<td>Option 3: Replace black plastic mulch with cover crops, straw, or wood chips for weed control</td>
<td>• Design film that resists tearing and damage during use and recovery</td>
<td>2028</td>
<td>• Set up subsidies to promote a local manufacturing industry</td>
<td>2023–2024</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Phase out the use of conventional (non-biodegradable) polymers in coatings</td>
<td>2028</td>
<td>• Study the technical feasibility of different fertilizer types</td>
<td>2023–2024</td>
</tr>
<tr>
<td></td>
<td>Option 4: Reduce/replace</td>
<td>• Use liquid fertilizer to eliminate the need for fertilizer bags</td>
<td>2026–2028</td>
<td>• Study the convenience of adoption by farmers and agri-suppliers</td>
<td>2023–2024</td>
</tr>
</tbody>
</table>

Polymer-coated fertilizers

<table>
<thead>
<tr>
<th>Prioritized plastic product</th>
<th>Options</th>
<th>Actions</th>
<th>Indicative timeline</th>
<th>Additional research needed and pre-conditions for actions</th>
<th>Indicative timeline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Option 1: Ban and replace</td>
<td>• Phased out the use of conventional (non-biodegradable) polymers in coatings</td>
<td>2028</td>
<td>• Study the technical feasibility of different fertilizer types</td>
<td>2023–2024</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Replace these polymers with completely biodegradable coatings</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Option 2: Use liquid fertilizer to eliminate the need for fertilizer bags</td>
<td>• Develop liquid fertilizer that is available to reduce the need for fertilizer bags</td>
<td>2026–2028</td>
<td>• Study the convenience of adoption by farmers and agri-suppliers</td>
<td>2023–2024</td>
<td></td>
</tr>
</tbody>
</table>

Plant support string

<table>
<thead>
<tr>
<th>Prioritized plastic product</th>
<th>Options</th>
<th>Actions</th>
<th>Indicative timeline</th>
<th>Additional research needed and pre-conditions for actions</th>
<th>Indicative timeline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Option 1: Convert to biodegradable string</td>
<td>• Replace plastic twine with biodegradable twine</td>
<td>2026</td>
<td>• Conduct pilot trials for greenhouse crops</td>
<td>2023–2024</td>
<td></td>
</tr>
</tbody>
</table>

Supporting LISP Strategy Implementation

<table>
<thead>
<tr>
<th>Prioritized plastic product</th>
<th>Options</th>
<th>Actions</th>
<th>Indicative timeline</th>
<th>Additional research needed and pre-conditions for actions</th>
<th>Indicative timeline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Silage films</td>
<td>Option 1: Ensure traceability and conversion to biodegradable films</td>
<td>• To facilitate the return of films to EPR schemes, label durable silage films to identify the manufacturer, and include a replacement date to prevent overuse (which risks degradation and dispersion)</td>
<td>2026</td>
<td>• Use biodegradable films for silage bales that are effective and similar to LDPE (low-density polyethylene) films</td>
<td>2023–2024</td>
</tr>
<tr>
<td></td>
<td>Option 2: Bale silage</td>
<td>• Use a chopper baler when making silage to help turn more grass into a bale, producing fewer but denser bales</td>
<td>2026</td>
<td>• Adopt the practice of rapidly wilting silage to concentrate sugars and improve dry matter content. This involves using a conditioner on a mower to divide the grass, creating a larger surface area to increase wilting speed by up to 20 percent. Spread the grass rapidly (within two hours) to avoid water loss, improving the dry matter content of silage, assuming good weather conditions. Increasing dry matter content will reduce the quantity of bales to be made</td>
<td>2023–2024</td>
</tr>
</tbody>
</table>

Plastic films for greenhouses (top and bottom tunnels)

<table>
<thead>
<tr>
<th>Prioritized plastic product</th>
<th>Options</th>
<th>Actions</th>
<th>Indicative timeline</th>
<th>Additional research needed and pre-conditions for actions</th>
<th>Indicative timeline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Option 1: Explore technological alternatives</td>
<td>• Replace greenhouse films with durable materials such as silica glass and rigid polycarbonate</td>
<td>2028</td>
<td>• Set up subsidies to promote a local manufacturing industry</td>
<td>2023–2024</td>
<td></td>
</tr>
</tbody>
</table>

Drip irrigation, piping for localized irrigation, and related accessories

<table>
<thead>
<tr>
<th>Prioritized plastic product</th>
<th>Options</th>
<th>Actions</th>
<th>Indicative timeline</th>
<th>Additional research needed and pre-conditions for actions</th>
<th>Indicative timeline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Option 1: Increase ribbon strength to reduce risk of damage during use and recovery</td>
<td>• Replace plastic with durable PVC materials with a lifespan of up to 15 years, allowing reuse of the product over several seasons</td>
<td>2028</td>
<td>• Conduct a technical and economic feasibility study</td>
<td>2023–2024</td>
<td></td>
</tr>
</tbody>
</table>

Accompanying actions: Training on recommended options, communication and awareness-raising among decision-makers and agricultural users.

2014: Not applicable to greenhouse crops
**Deliverable 4: Design a public-private network of coastal tourism actors to reduce single-use plastics in tourism establishments in the Souss-Massa region**

**Overview**

Engaging the tourism sector is crucial for addressing plastic pollution. In Morocco, the tourism sector is the blue sector most affected by plastic pollution. Studies have shown that reducing plastic use can generate economic gains. For example, hotels could save up to about US$4,788 (€4,475) a year and avoid 1,497 kilograms of CO₂ emissions by replacing single-use plastic bottles with refillable bottles containing filtered tap water, if 50 bottles are used per day.

This deliverable aims to develop a pilot sub-national mechanism to reduce the use of single-use plastics from tourism and recreational facilities. The mechanism focuses on the following activities:

- Reducing single-use plastic use by encouraging collaboration between tourist establishments, especially hotels and restaurants
- Raising awareness among tourism stakeholders of the environmental, economic, and societal benefits of reducing plastic use.

The government selected Agadir and Taghazout for this deliverable based on their strong coastal tourism sector and regions in Morocco.

**Results**

The rapid survey indicated that tourist hotels are willing to cooperate with other hotels and learn best practices to reduce and replace single-use plastics. Common plastic items purchased by the hotels surveyed included:

- Individually wrapped salt, pepper, or sugar
- Plastic bottles (other than water)
- Plastic bottles (water)
- Plastic-wrapped tea or coffee bags
- Mini toiletries (shampoo, shower gel, and body lotion)
- Table oil bottles.

The survey of the three restaurants, on the other hand, highlighted the need for further awareness-raising on plastic pollution. Common plastic items used in the restaurants surveyed included plastic bottles (water), plastic straws, and butter and honey in plastic packaging.

30 Dalberg Advisors 2019.
32 Wilaya is an administrative division in Morocco at the level of regions.

**Recommendations**

The following recommendations are potential next steps for launching the public-private network of tourism actors in Agadir and Taghazout:

- Establish a steering committee for the network. The aim of this steering committee would be to continue designing the network and elaborate on modalities and implementation mechanisms.
- Conduct an additional field study to establish a baseline of single-use plastic use in the region. A detailed study with the participation of additional hotels and restaurants would establish a baseline of single-use plastic use at tourist establishments in Agadir and Taghazout.
- Finalize a voluntary agreement among stakeholders. An agreement that expands on the points agreed in the two stakeholder workshops would serve to establish the network. The agreement could include the following elements:
  - A quantitative reduction target for single-use plastics in the region, based on the baseline established above.
  - A monitoring and reporting system to evaluate the network’s performance.
  - A short- and medium-term action plan for each network member to follow.
- Consider expanding the scope of the network to address the recovery of recyclable plastic waste in addition to reducing the use of single-use plastics.
- Conduct training for tourist establishments and restaurants on measures to reduce single-use plastics use and promote single-use plastic product alternatives. The training could showcase good practices using concrete case studies.

To generate discussion, these survey results were presented at a workshop for local tourism stakeholders. At the workshop, the stakeholders decided to form a network of government entities and private tourist establishments in Agadir and Taghazout to align efforts to end plastic pollution. The main objectives of the network will be to reduce single-use plastic use and to promote a circular economy in line with the LISP Strategy.

The second stakeholder workshop was a scoping exercise for this public-private network. The discussion focused on starting to develop a voluntary agreement between stakeholders to formally establish the network. The following was concluded towards such an agreement:

- The main objective of this public-private network would be to prevent and reduce single-use plastic use in tourist and recreational establishments in the Taghazout and Agadir municipalities by catalyzing collaboration among tourism stakeholders.
- The main stakeholders for the network would include wilaya Souss-Massa; the Souss-Massa region; municipalities in Taghazout, Agadir, and Aourir; the Souss-Massa Regional Environment Department; the Association Régionale de l’Industrie Hôtelière d’Agadir (ARIHA, the Regional Association of the Hotel Industry of Agadir); the Restaurant Association; and the Surfrider Foundation Morocco.

This public-private network will serve as a pilot model and, if successful, could be replicated in other sub-national regions in Morocco.
Deliverable 5: Analyze the role of the informal waste sector in plastic waste management

Overview
The LISP Strategy’s third strategic objective is to integrate the informal sector into a more circular and inclusive economic model. To that end, this deliverable aimed to better understand the informal waste sector’s role in plastic management and its contribution to circularity. This deliverable included desktop research, consultations, and a field study to assess and learn from existing efforts to formalize and integrate the informal sector in plastic waste management, such as by the Cooperative Attaouafouk at the Oum Azza landfill. The results could support the government in preparing a draft roadmap to integrate the informal sector into plastic waste management.

Results
The study confirmed that plastic waste management in Morocco is characterized by the coexistence of formal and informal sectors. It further found that:

- Currently, no specific law governs recycling and the status of various players. The DDD planned to build 26 sorting centers in total. Of these, to date nine have been built and three have become operational. The DDD is also working on the second phase of building 18 centers, which will be operational by 2024. However, in controlled landfill sites, waste reclaimers, even when they have organized themselves into cooperatives, often struggle to find raw materials because they have limited access in these sites. Cooperatives also face legal and logistical complexities in setting up platforms to process solid waste.
- The current situation, characterized by the coexistence of the formal and informal sectors, is likely to continue until legal issues are resolved and incentives are introduced for cooperatives and small businesses.
- There is competition between the private companies that manage landfills and sorting centers and the informal sector, which creates conflicts and tension between stakeholders at landfill sites.
- Informal waste workers are at a disadvantage because landfill operators can restrict their access to landfills.
- Wholesalers face the challenge of varying plastic product availability, forcing them to find other sources in the industrial and commercial sectors.
- Cooperatives that were set up in landfills where informal reclaimers had access are now carrying out advanced operations such as sorting, compressing, and shredding. However, in controlled landfill sites, waste reclaimers, even when they have organized themselves into cooperatives, often struggle to find raw materials because they have limited access in these sites. Cooperatives also face legal and logistical complexities in setting up platforms to process solid waste.
- There is competition between the private companies that manage landfills and sorting centers and the informal sector, which creates conflicts and tension between stakeholders at landfill sites.
- Informal waste workers are at a disadvantage because landfill operators can restrict their access to landfills.
- Wholesalers face the challenge of varying plastic product availability, forcing them to find other sources in the industrial and commercial sectors.
- Cooperatives that were set up in landfills where informal reclaimers had access are now carrying out advanced operations such as sorting, compressing, and shredding. However, in controlled landfill sites, waste reclaimers, even when they have organized themselves into cooperatives, often struggle to find raw materials because they have limited access in these sites. Cooperatives also face legal and logistical complexities in setting up platforms to process solid waste.
- The current situation, characterized by the coexistence of the formal and informal sectors, is likely to continue until legal issues are resolved and incentives are introduced for cooperatives and small businesses.

The role of women in the informal plastic waste sector
The study also examined the role of women in plastic waste management. The results of the field visit showed that women play a significant part in plastic waste recycling, especially in sorting tasks, and that some women also work as managers and Business owners. However, women engaged in informal waste work face distinct challenges. Some reported having to abandon waste collection after the landfill was relocated for modernization because the distance to the modernized landfill made it difficult for them to balance reclamation work with family commitments.

Recommendations
Based on the results of this activity, the following actions are recommended:

- Plan specific projects for women waste workers. Efforts to formalize the informal waste sector could include projects that specifically target women. Such projects could, for example, employ women at sorting units or support their enterprises and cooperatives.

A roadmap for formalization
A proposed draft roadmap to formalize the informal plastic waste recycling sector has been prepared based on this analysis. Two scenarios were considered:

- Scenario 1: Formalization of informal workers by employing them in the companies that manage the landfills.
- Scenario 2: Formalization of informal workers by integrating the informal sector through the creation of associations or cooperatives.

Stakeholder consultations indicated that Scenario 2 was the more desirable scenario. This scenario aims to integrate the informal sector through a new policy for integration based on legal measures and programs to transform the informal sector into small businesses. Under this scenario, the informal sector’s management and technical skills would be improved to gradually integrate them into the formal system. Table 5 on page 46 summarizes the proposed draft roadmap of actions towards achieving this scenario.

11Morocco is preparing a new law on circular economy.
12Wholesalers focus on sorting plastic materials at the request of recyclers. There are two levels of wholesalers: the first level of wholesalers and the main wholesalers. The first level processes and forwards the materials to the main wholesalers who are better organized and have more storage, sorting, and processing capacities. Some wholesalers operate informally while the others are organized into cooperatives.
Table 5: Proposed draft roadmap to formalize the informal sector

<table>
<thead>
<tr>
<th>Tasks</th>
<th>Stakeholders</th>
<th>Responsible entities</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Consultation phase</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Communicate with official and institutional players involved in the formalization process to define guidelines for all stages</td>
<td>DDD, wilayas and prefectures, local municipalities, professional recycling organizations</td>
<td>DDD, Ministry of Interior</td>
</tr>
<tr>
<td>Start a diagnostic process to produce a detailed study on the informal sector</td>
<td>DDD, wilayas and prefectures, local municipalities, professional recycling organizations, all formal and informal players</td>
<td>DDD</td>
</tr>
<tr>
<td>Conduct in-depth, wide-ranging consultations on regulations governing the recycling sector and on how institutions are organized</td>
<td>DDD, wilayas and prefectures, local municipalities, professional recycling organizations</td>
<td>DDD, Ministry of Interior</td>
</tr>
<tr>
<td>Carry out awareness-raising and training initiatives on the formalization processes</td>
<td>DDD, wilayas and prefectures, local municipalities, all formal and informal players</td>
<td>DDD, Ministry of Interior</td>
</tr>
<tr>
<td><strong>Transition phase</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Complete analysis on the informal plastic waste sector</td>
<td>DDD, Ministry of the Interior, Ministry of Industry and Trade, wilayas and prefectures, local municipalities, professional recycling organizations, all formal and informal players</td>
<td>DDD</td>
</tr>
<tr>
<td>Develop draft laws and proposed forms of organization</td>
<td>DDD, Ministry of the Interior, Ministry of Industry and Trade, wilayas and prefectures, local municipalities, professional recycling organizations</td>
<td>DDD</td>
</tr>
<tr>
<td>Follow up on the law enactment process</td>
<td>DDD, government, legislative chambers</td>
<td>DDD</td>
</tr>
<tr>
<td>Conduct intensive training and awareness-raising</td>
<td>DDD, Ministry of the Interior, Ministry of Industry and Trade, wilayas and prefectures, local municipalities, professional recycling organizations</td>
<td>DDD, Ministry of Interior</td>
</tr>
<tr>
<td><strong>Implementation phase</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Promulgate laws and monitor their implementation</td>
<td>DDD, Ministry of Interior, Ministry of Industry and Trade, wilayas and prefectures, local municipalities, professional recycling organizations</td>
<td>DDD, Ministry of Interior, Ministry of Industry and Trade</td>
</tr>
<tr>
<td>Plan for implementing these laws</td>
<td>DDD, Ministry of Interior, Ministry of Industry and Trade, wilayas and prefectures, local municipalities, professional recycling organizations</td>
<td>DDD, Ministry of Interior, Ministry of Industry and Trade</td>
</tr>
<tr>
<td>Carry out comprehensive organization of the entire sector</td>
<td>DDD, Ministry of Interior, Ministry of Industry and Trade, wilayas and prefectures, local municipalities, professional recycling organizations</td>
<td>DDD, Ministry of Interior, Ministry of Industry and Trade</td>
</tr>
<tr>
<td>Provide support for incentives and motivation</td>
<td>DDD, Ministry of Interior, Ministry of Industry and Trade, wilayas and prefectures, local municipalities, professional recycling organizations</td>
<td>DDD, Ministry of Interior, Ministry of Industry and Trade</td>
</tr>
</tbody>
</table>

Deliverable 6: Prepare a LISP communication plan

**Overview**

This deliverable aimed to support the government in preparing a communication plan that supports LISP Strategy implementation. The communication plan focuses on preparing for a communication campaign to encourage the engagement of the stakeholders in LISP Strategy implementation.

The scope of this activity includes developing a concrete plan for a communication campaign that the DDD can implement. The plan defines the key messages, identifies communication channels, and establishes the basis for monitoring the impact of the communication campaign. A set of communication products was developed to help LISP stakeholders start implementing the communication campaign based on the communication plan.

**Results**

- A communication framework was prepared, defining communication objectives, key messages, communication channels, and a basis for monitoring the impact of the communication campaign.
- Key messages were proposed around three aspects: economic impact, environmental impact, and proposed action.
- A communication plan for a communication campaign with three budget scenarios (low, medium, and high) was prepared. The plan followed the “awareness, interest, desire, and action” (AIDA) model (Box 4) to capture attention, generate interest, build desire, and encourage behavioral changes.
- Communication assets were prepared to enable the immediate implementation of the campaign. These assets were prepared in editable digital formats and accompanied by a guideline showing good practices for using them, including:
  - A designed campaign logo
  - Leaflets
  - Posters
  - Graphics.

**Box 4: The awareness, interest, desire, and action communication model**

The communication plan was developed based on the AIDA (awareness, interest, desire, and action) communication model to convey targeted messages through strategic channels. By following the AIDA model, the campaign tailors its content and approach to effectively engage and motivate the target audience across different media channels. Table 6 on page 48 presents each step and media options that could be considered.
### Box 4 (continued)

#### Table 6: The awareness, interest, desire, and action communication model

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
<th>Media</th>
</tr>
</thead>
<tbody>
<tr>
<td>Awareness</td>
<td>The primary aim is to raise awareness of the problem of plastic pollution and introduce the campaign brand, messages, and graphic designs.</td>
<td>Media will use high impact channels that offer the possibility of good visibility such as broadcast.</td>
</tr>
<tr>
<td>Interest</td>
<td>After awareness-raising, the next step is to generate interest in the topic, provide more content, and target audiences more carefully.</td>
<td>The public's ability to read and absorb more detailed information will guide the choice of media. Media will include: Social networks, Public relations, Press advertising.</td>
</tr>
<tr>
<td>Desire</td>
<td>Having aroused the public's interest, the next step is to get them to “want” to change their behavior towards plastic waste.</td>
<td>The media choice here focuses on channels designed to convey broad content and open dialogue. These include: Social networks, Public relations, Prints (flyers, posters).</td>
</tr>
<tr>
<td>Action</td>
<td>Focus on behavioral changes in line with the campaign objective.</td>
<td>The channels used here are those that allow the most precise targeting and understanding, including: Leaflet distribution, Door-to-door visits, Social networks.</td>
</tr>
</tbody>
</table>

### Recommendations

The next recommended step is to implement the campaign as set out in the communication plan in order to engage stakeholders who have a role to play in implementing the LISP Strategy. The following specific recommendations could be considered in rolling out the campaign:

- **Support and endorsement.** Establish dedicated campaign platforms on Facebook and Instagram. DDD needs to actively support and endorse the campaign to increase its credibility and engage wider participation.
- **Collaborate with stakeholders.** LISP partners, including other ministries, civil society, and the private sector, can actively participate in the campaign and leverage their resources and networks. The National Plastic Committee could ensure coordination action in this regard.
- **Resource allocation.** Ensure that sufficient human and financial resources are allocated to effectively implement the campaign. Appoint a dedicated focal point within DDD to oversee the campaign.
- **Collaboration with media and influencers.** Engage journalists, influencers, and bloggers to leverage their networks to reach different audiences. The youth, who are passionate about the topic, could play a role in raising awareness and inspiring action.
- **Monitor campaign impact.** Campaign impact monitoring can focus on two major areas: reach and impact. Ultimately, the impact on addressing plastic pollution determines the campaign’s success, which could be measured by surveys on awareness and attitude, as well as changes in plastic pollution levels.

### Deliverable 7: Design an integrated information management system to strengthen the monitoring program

**Overview**

Effective management of monitoring data on plastic pollution is crucial for assessing the status of plastic pollution and for evaluating the impact of the LISP Strategy. The monitoring data will also be vital for the implementation of the upcoming legally binding instrument on plastic pollution, which will require compliance with national reporting obligations. This deliverable therefore focused on building monitoring capacity (Box 5) and designing an integrated data management system that brings together a range of plastic pollution indicators. The integrated database could be useful for collecting data from different sectors and providing a basis for national reporting under a future international legally binding instrument.

The system collects the necessary data to report on common indicators on marine plastic pollution under the Integrated Monitoring and Assessment Program (IMAP) of the Convention for the Protection of the Mediterranean Sea Against Pollution (Barcelona Convention) and the Mediterranean Action Plan. Indicators that relate to plastic pollution include beach litter, seafloor litter, and floating microplastics. The data standards and available on the IMAP Pilot InfoSystem. It is anticipated that Morocco will start reporting on these regional common indicators through a national database that is compatible with the IMAP InfoSystem under the Barcelona Convention. National reporting to the Barcelona Convention is expected to serve as the basis for the future reporting on the forthcoming legally binding international instrument on plastic pollution.

### Box 5: Strengthening the capacity for monitoring marine plastic pollution

Monitoring the status of plastic pollution is crucial for assessing the impact of management measures. Virtual training was therefore held to strengthen the DDD’s monitoring capacity. This training focused on the monitoring of seafloor macrolitter, floating macrolitter, floating microplastics, and microplastic in sediments. The training drew on France’s experience with implementing the EU Marine Strategy Framework Directive for Marine Litter (D10) and the Barcelona Convention. It provided information on field sampling techniques, extraction techniques, and laboratory characterization used in the French monitoring program and presented data management using the national database (DALI).
Morocco has the solid basis for an integrated database in Systeme D’Information Regional de l’Environnement et du Développement Durables (SIREDD, Regional Information System for the Environment and Sustainable Development). A regular monitoring program on marine plastic pollution is also in place, and the Laboratoire National des Etudes et de Surveillance de la Pollution (LNSEP, National Laboratory for Pollution Studies and Monitoring)\(^{38}\) has a data management system that currently tracks bathing water quality. The current system, however, lacks an information system to store and process monitoring data, or generate indicator data for the IMAP common indicators on marine litter. The following changes to the existing system are therefore suggested (Figure 9):

- **Further develop SIREDD by:**
  - Adding marine litter indicators. At present, SIREDD does not store indicator information on marine litter. The IMAP common indicators on marine litter need to be added to the system.
  - Adding an application programming interface (API)\(^{39}\) to support automated data submission. At present, indicator data requires manual entry. An API would enable automatic indicator data entry.

- **Develop a Laboratoire National des Etudes et de Surveillance de la Pollution (LNSEP, National Laboratory for Pollution Studies and Monitoring) online information system for marine litter data.** Figure 10 illustrates the proposed LNSEP system. The information system needs to be able to receive, store, and manage data from the monitoring programs, and to automatically process this data to generate the environmental indicators required by SIREDD.

Thus, it is recommended to develop a new application under the “Lab” sub-domain of the environment.gov.ma web server system that can receive marine litter data from the Excel-based information standards for each common indicator.\(^{40}\)

The application should include:

- An SQL database\(^{41}\) for data collected using information standards
- An API to receive data from these spreadsheets
- A user interface for data storage, validation, and navigation
- A user registration system to control access to the system
- An API component for automatic submission of aggregated data to SIREDD as indicator records
- An API interface for integration with the Global Partnership for Marine Litter (GPML),\(^{42}\) if needed.

- **Develop a data download tool.** A data upload tool that can format monitoring data using the information standards for uploading to SIREDD needs to be developed. In parallel, SIREDD needs to be adjusted to receive the data from the tool. To avoid manual entry of marine litter data, a Microsoft Excel tool using Visual Basic for Applications could be developed.

- **Consider integrating with the GPML digital platform**\(^{43}\) (optional). An API that is compatible with the GPML digital platform’s API explorer, and registering this API with the GPML platform, would enable indicator data queries using the GPML system. The government may consider such interoperability with the global system, as and when needed.

---

\(^{38}\) See: [https://labo.environnement.gov.ma/](https://labo.environnement.gov.ma/)

\(^{39}\) APIs, or a code that allows multiple software programs to communicate.

\(^{40}\) Information standards are available at [http://imappilot.info-rac.org/app/#/standard](http://imappilot.info-rac.org/app/#/standard)

\(^{41}\) SQL, Structured Query Language, a programming language for processing information in a relational database.

\(^{42}\) For more information about the Global Partnership for Marine Litter go to: [https://digital.gpmarinelitter.org/](https://digital.gpmarinelitter.org/)

\(^{43}\) More information on the GPML digital platform is available at: [https://digital.gpmarinelitter.org/](https://digital.gpmarinelitter.org/)
Recommendations

The next step would be to produce an integrated system and update SIREDD based on the design proposed above. The development process will likely include the following steps:

- Prepare a detailed design
- Develop test versions
- Prepare testing protocols and conduct tests
- Develop the final version.
Morocco has taken a significant step to stop plastic pollution. The LISP Strategy was developed with the participation of stakeholders across multiple sectors including civil society, the private sector, and the plastic value chain, and provides a common framework for coordinated, multistakeholder national actions. In moving forward, the National Plastics Committee, which includes representatives from all relevant sectors, will oversee the Strategy’s implementation.

The government has already started to implement priority actions listed in the LISP Action Plan. Stakeholders have started implementing and raising funds for the LISP Action Plan. The DDD has identified and carried out seven priority activities through its partnership with the World Bank and, under the DDD’s leadership, all these activities involved government stakeholders from various ministries and the private sector. These priority activities have created momentum for ongoing LISP Action Plan implementation.

The government has an opportunity to build on this momentum by establishing a coherent cross-sectoral national program to end plastic pollution. The program could coordinate actions by different sectors under the LISP Strategy’s vision of a “plastic-free coastline” while enhancing intersectoral collaboration and increase efficiency by avoiding duplicated efforts. LISP stakeholders could use the 15 priority projects (Annexure 1) as a starting point to shape the national program. A national program on plastic pollution would also contribute to the government’s blue economy program, which is supported by the World Bank’s Blue Economy Program for Results.

A cross-sectoral national program in Morocco could provide a model for other countries in future. Once the international legally binding instrument comes into force, the national LISP Strategy could serve as the vehicle for its implementation, coordinating actions across sectors. While the instrument’s national obligations are still in the process of being defined, national implementation mechanisms that work across sectors and motivate stakeholder action throughout the plastic lifecycle would be useful. The envisaged national cross-sectoral program could exemplify the holistic implementation of the legal instrument at the national level. Morocco may be able to showcase this implementation model and share its experience with other countries through South-South cooperation.
The following immediate next steps, which emerged from the seven deliverables prepared under the partnership between Morocco and the World Bank, would advance the LISP Strategy’s implementation:

- **Institutionalize the implementation of the LISP Strategy.** The government could continue implementing the LISP Strategy, building on experience gained under the partnership with the World Bank. The National Plastics Committee could meet regularly to oversee the implementation and review progress. A monitoring and evaluation framework would facilitate the review process, compiling the progress made by different actors. The National Plastic Committee could also coordinate fundraising for priority projects through a coordination meeting with donors. These institutional practices would enable continued LISP Strategy implementation and prepare for the implementation of the legally binding instrument.

- **Improve upstream and downstream measures to enhance plastic circularity.** The government can take a range of actions to move towards a circular plastic economy. Examples include establishing standards for recycled plastics, enhancing plastic recycling, and improving waste collection in rural areas. Periodically assessing the circular economy value would help the government assess its progress towards a circular plastic economy.

- **Set an ICT on selected single-use plastic products to reduce their use.** Target products for ICT need to be selected in light of ongoing discussions on the legally binding instrument on plastic pollution. The government may wish to assess revenue scenarios based on ICT levels and further examine possible effects, including the lifecycle of alternative products that will be indirectly favored by an ICT.

- **Carry out a field trial to assess the technical and economic feasibility of replacing mulching films and twines with biodegradable materials as a first step towards implementing the action plan on agricultural plastics.** The pilot study could demonstrate the feasibility of— and inform a cost-benefit analysis on— using biodegradable materials instead of plastic mulching films and twines.

- **Establish a public-private network of tourism actors in Agadir and Taghazout to reduce the use of single-use plastics in tourist establishments.** The government could continue supporting stakeholders to finalize an agreement to reduce single-use plastic use. Training in best practices to replace single-use plastics in tourist establishments would be beneficial. The network could serve as a pilot model for partnerships between the government and the private tourism sector actors (hotels and restaurants) that could be replicated in other coastal regions to promote cleaner coastal tourism without plastics.

- **Finalize and implement the roadmap for integrating the informal waste sector.** The proposed draft roadmap in this report (Table 5 on page 46) could form the basis of a government plan for integrating the informal waste sector. A key action identified in the proposed roadmap is to develop a new policy and legal framework to support the integration process. It is recommended that the DDD and the Ministry of Interior work together to finalize this roadmap.

- **Roll out the communication plan to encourage stakeholder participation in implementation of the LISP Strategy.** The communication campaign could be executed based on the communication plan (Deliverable 6). The National Plastics Committee could oversee this implementation, provide guidance, and engage partners to join efforts. Communication products would need to be tailored and rolled out to coastal regions, in line with the ongoing process of regionalization.

- **Enhance data collection and data management.** Systematic data collection along the plastics value chain—including data on plastics trade, plastic waste management, and monitoring data in the environment—would help policy and management decision-making. An integrated database would support data analysis throughout the plastics lifecycle and would support the implementation of the upcoming legally binding instrument. The proposed database (Deliverable 7) would be a first step towards such an integrated system.

---

**Box 6: Fostering regional cooperation to stop plastic pollution**

A virtual regional workshop, “Stop Plastic Pollution for a Sustainable Blue Economy in MENA”, was held on May 8, 2023. This provided an opportunity for regional players to discuss how best to address marine plastic pollution and, ultimately, develop the blue economy in the Middle East and North Africa. More than 100 representatives from governments, international and regional organizations, NGOs, academia, and the private sector took part in the workshop, where Morocco shared its experience in developing and implementing its LISP Strategy.

The key messages that emerged from the workshop were:
- **Addressing plastic pollution should be part of a strategy to develop the region’s blue economy**
- **Actions should be taken along the entire plastic value chain**
- **Collaboration among all stakeholders is crucial to end plastic pollution.**

The workshop also highlighted the importance of regional and international cooperation to end plastic pollution.
References


## Annexure 1: Priority projects identified in the LISP operational plan

### Characterization and monitoring of plastic debris

1. Design and implement a priority program for monitoring and characterization of microplastics.
   - **Implementation partners:** DDD; LNESP; National Institute of Fisheries Research (INRH); and universities
   - **Indicative budget (million DH):** 55.5

2. DDD and LNESP acquire microplastic characterization equipment and obtain practical training in its use.
   - **Implementation partners:** DDD; LNESP; INRH; and maritime merchant navy
   - **Indicative budget (million DH):** 35 MDH

3. Strengthen the system for monitoring waste on beaches, include monitoring microplastic and setting up a system for monitoring marine litter and microplastics in ports and at sea (floating, on the seabed) and in the biota.
   - **Implementation partners:** DDD; LNESP; and INRH
   - **Indicative budget (million DH):** 35 MDH

### Research and innovation

5. Implement a program for more sustainable plastic design and production (easy to reuse, repair and recycle, and free of toxic additives).
   - **Implementation partners:** The Ministry of Industry and Trade; General Confederation of Moroccan Enterprises; Moroccan Plastics Federation; and Technical Center for Plastics and Rubber
   - **Indicative budget (million DH):** 35 MDH

### Waste management and reduction of inadequately managed plastic deposits (mismanaged)

7. Set up devices to intercept floating debris, particularly upstream of mouths near sensitive areas (hotspots).
   - **Implementation partners:** The Directorate of Ports and Public Maritime Domain
   - **Indicative budget (million DH):** 150 MDH

8. Implement systems for the collection (including on beaches and in ports), disposal, treatment, and recycling of plastic waste in identified priority coastal areas.
   - **Implementation partners:** Coastal municipalities; National Ports Agency; and the Ministry of Interior (MI)

9. Project to support the operationalization of a recycling platform for agricultural plastic waste and household plastic waste in the Souss-Massa region and its replication in the other two coastal regions (Casab-Salé and Rabat-Salé-Kénitra).
   - **Implementation partners:** DDD; MI-Souss Massa Regional Council; Agrotech-Souss Massa; etc.
   - **Indicative budget (million DH):** 150 MDH

### Regional initiatives for the African Atlantic

12. Develop and implement a regional program for the development and protection of the marine and coastal environment for the countries of Atlantic Africa, within the framework of triangular cooperation (including the regional scale-up of the marine debris information system established in Morocco).
   - **Implementation partners:** DDD and other relevant ministerial departments

### Other Actions

11. Develop and implement a training and awareness program for elected officials in coastal communities on the fight against marine pollution by plastic.
   - **Implementation partners:** MI; the Mohammed VI Foundation for Environmental Protection; DDD

13. Set up and adopt a regional initiative to combat marine plastic pollution on the Atlantic coast of Africa within the framework of South-South cooperation, with the support of international and regional agencies (to be piloted by Morocco and backed by the Abidjan Convention and BASSAM Protocol on land-based pollution).
   - **Implementation partners:** DDD and other relevant ministerial departments
   - **Indicative budget (million DH):** 260 MDH

14. Implement a harmonized monitoring program across Atlantic Africa, capitalizing on the instruments and indicators developed for the Mediterranean and on the battery of indicators developed as part of the LISP-Morocco project.
   - **Implementation partners:** DDD and other relevant ministerial departments

15. Set up a regional platform for exchanging and sharing information on marine debris in the Atlantic.
   - **Implementation partners:** DDD and other relevant ministerial departments

---

**Plastic-Free Coastline: Addressing Plastic Pollution in Morocco**

**Annexure**
Plastic-free Coastline

Addressing Plastic Pollution in Morocco