



India

(Output Paper)

# Policy Solution Prototypes for Marine Litter Prevention in India

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The project team expresses its gratitude to all the participants of the roundtables for a very valuable and highly appreciated contribution.

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## Project Contribution to SDGs:



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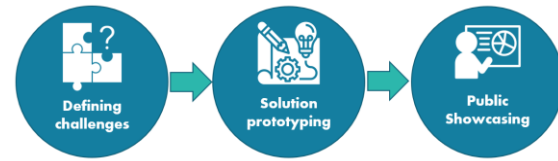
## Introduction

Prevention of Marine Litter in the Lakshadweep Sea (PROMISE) is a 4-year project (2020-2024) supported by the European Union (EU) under the SWITCH Asia Programme.

In recent years, the project partner countries, Maldives, Sri Lanka and India have undergone substantial growth in tourism clusters located along their shorelines of the Lakshadweep Sea. This led to economic well-being of the local population. However, due to high consumption rates of fast-moving consumer goods (FMCG) and single-use plastic packaging, tourism industries have also been identified as major contributors to marine litter. In many touristic regions of the global south, this is aggravated by the absence of effective policy frameworks, a lack of consumer awareness and insufficient capacities of local authorities to handle the increasing solid waste<sup>1</sup>.

The PROMISE project responds to this by preventing leakage of wastes from land-based sources into the Lakshadweep Sea in line with a Sustainable Consumption and Production (SCP) approach. To achieve the desired impact, the activities target tourism clusters located along the Lakshadweep shorelines in the Maldives, Sri Lanka and India<sup>2</sup>.

As part the project PROMISE, a series of policy roundtables were organised with an aim to prototype policy solution mechanisms for challenges in prevention of marine litter. Three policy roundtables are organised, each focusing on Defining Challenges (1<sup>st</sup>), Solution Prototyping (2<sup>nd</sup>), and Public Showcasing of policy mechanisms (3<sup>rd</sup>). Each roundtable is designed to feed-in inputs to the next one to prototype potential policy solutions that can help national policy makers in furthering marine litter prevention policies.



### Defining Challenges (1<sup>st</sup> Policy Roundtable)

The first phase, the Defining Challenges policy roundtable, convened in India on 25.04.2022, marked the foundational step in this journey of Policy solutions prototyping. Esteemed participants, representing a spectrum of stakeholders including policy makers, governmental bodies, institutions, development organizations, associations, NGOs, and social enterprises in waste management and marine litter prevention, engaged in a collaborative discourse. This stage centered on elucidating the prevailing hurdles and lacunae within India's existing policies pertaining to marine litter prevention.

Key challenges surfaced during this deliberation included the absence of Extended Producer Responsibility (EPR) schemes and policies, inadequate awareness concerning waste management practices, the dearth of regulatory frameworks at the state level for waste management, and the exigent need for policies targeting marine litter stemming from tourism and fishery activities.

### Solution Prototyping (2<sup>nd</sup> Policy Roundtable)

Subsequently, the Solution Prototyping policy roundtable, convened on 26.07.2022, emerged as a dynamic platform for strategic brainstorming and innovation. Participants delved into the realm of policy benchmarking, drawing insights from global best practices and customizing them to suit the nuanced landscape of India. A collaborative synergy among governmental institutions, development organizations, universities, and NGOs was palpable as participants co-created actionable policy prototype solutions, tailored to the challenges unveiled in the preceding roundtable.

<sup>1</sup> <https://projectpromise.eu/>

<sup>2</sup> <https://projectpromise.eu/project-brief/project-activities>

Two noteworthy solutions materialized from this collaborative endeavour:

- The formulation of **'Capacity Building Programmes for Sanitation Committees,'** designed to equip ward-level sanitation committees with the requisite knowledge on Waste Management regulations and enforcement strategies.
- The establishment of a **'District-level Task Force for Single-Use Plastics (SUP) Ban,'** envisaged to bolster the effective execution of SUP ban mandates.

### Public Showcasing (3<sup>rd</sup> Policy Roundtable)

The culminating stage of the Policy Prototyping Series unfolded in the form of the Public Showcasing of Policy Mechanisms policy roundtable, held on 03.02.2023. Here, the meticulously crafted policy prototypes underwent a process of refinement, enriched by the valuable feedback garnered from esteemed participants. This stage accentuated the iterative nature of policy development, ensuring a fine-tuned and pragmatic approach towards addressing the issue of marine litter.

This document stands as the Output Paper encapsulating the prototypes co-created by the participant groups within the Policy Roundtables of the Prototyping Series. The subsequent section provides a comprehensive delineation of the prototypes formulated by both groups, accompanied by vivid visualizations elucidating the mechanism of each solution.

Through this meticulously orchestrated series, the PROMISE project endeavours to furnish national policymakers with innovative, actionable policy frameworks, poised to propel India towards a sustainable and litter-free marine ecosystem.

The overarching aim of these Policy Outcome Paper is to serve as pivotal tools in the hands of policymakers, governmental agencies, ministries, and development organizations within India. By disseminating the innovative prototypes devised through the PROMISE project, these papers are designed to guide and

inspire the formulation of robust policies for marine litter prevention and waste management. Through a targeted sharing strategy, they aim to influence decision-making processes, encouraging the incorporation of these cutting-edge solutions into policy frameworks.

Moreover, the papers are poised to catalyze action by presenting tangible, evidence-based approaches that address the pressing challenges in this realm. The PROMISE project team further aims to showcase these outcomes at high-level events, strategically disseminating this wealth of knowledge to a wider audience.

This dissemination effort seeks to spark dialogue, collaboration, and momentum towards effective policy implementation and impactful change. Ultimately, these Policy Outcome Papers are envisioned as catalysts for transformative policy interventions, paving the way for a cleaner, healthier, and more sustainable future for India's marine ecosystems.

## Group 1: Capacity Building for Sanitation Committee

<b>Focus:</b>	Capacity Building, Community based awareness raising
<b>Ecosystem Impact:</b>	Effective policy enforcement, improved WM system, Increase in waste segregation rates
<b>Challenge:</b>	Lack of information, lack of training and expertise,

### Background

The challenge focuses on the lack of awareness surrounding waste management issues. Even though there are several public and private efforts for awareness raising, there is often a gap in successful implementation and the initiatives are short lived. Long-term efforts are not prioritized and financed when it comes to awareness efforts.

Marine litter is originated from the surrounding landmass and poses a challenge when the source and composition of the waste is unclear. There is overall lack of awareness on proper segregation and waste disposal methods which leads to mixing of municipal waste. When plastic and other waste is not segregated and recycled properly on land, it ends up in landfills or leaches into the marine ecosystem.

Another gap arises in policy implementation of marine litter prevention. Hence, capacity building and awareness raising at community level can be a potential solution to bridge this

gap. It is important that there is a sense of political and public ownership towards waste management issues. The Stakeholders are unaware of decentralized waste management options and government subsidies to find the best solutions. Hence it is important that there are dedicated efforts towards capacity development and knowledge-transfer activities.

The Suchitwa Mission is the Technical Support Group (TSG) in Waste Management sector under the Local Self Government Department, Government of Kerala. It is responsible for organizing awareness raising events and conducting creative workshops among other duties like conceptualizing, action planning, organizing training programs, initiating sector related studies and monitoring activities in Waste Management Sector<sup>3</sup>. The Suchitwa Mission has established a significant and successful initiatives, namely 'My waste, my responsibility' which is intended to create a sense of ownership among citizens to reduce and separate waste at the source. This includes 'The Green Protocol', Reuse-Swap shops, recycling and home composting<sup>4</sup>.

The Green Protocol focuses on waste minimization through prevention of use of single use plastics (SUPs) and promotion of using sustainable alternatives. It was initiated during the 2015 National Games and it has now become a successful people's movement in Kerala. For example, restaurants were asked to stop using plastic straws and the education board was asked to encourage students to use ink pens instead of plastic pens. The government offices are also instructed to follow green protocol for all their official meetings. There was also an attempt to spread awareness about the concept of 'Green Weddings', where the usage of plastic and other non-degradable articles including disposable glasses and plates and thermocol decorations were to be avoided<sup>5,6</sup>.

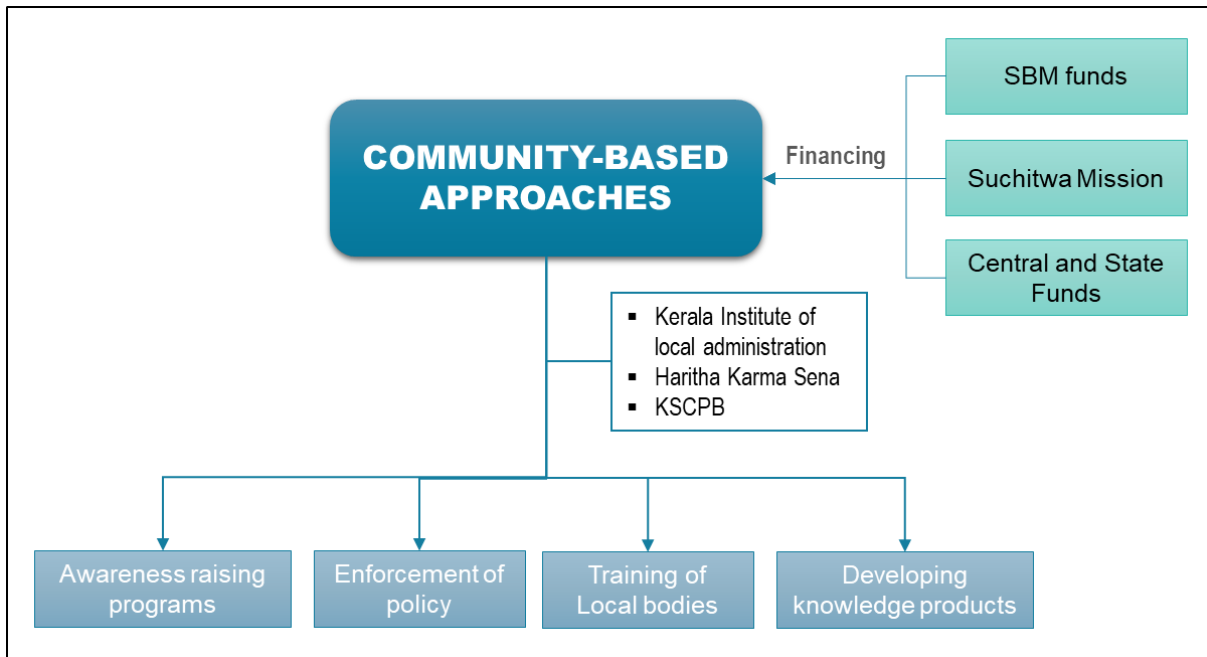
The Haritha Karma Sena (Green Task Force) collects and transports non-biodegradable

<sup>3</sup> <https://suchitwamission.org/>

<sup>4</sup> <https://suchitwamission.org/public/storage/files/1/Suchitwa-mission-innovative-initiatives.pdf>

<sup>5</sup> <https://suchitwamission.org/public/web/what-is-green-protocol>

<sup>6</sup> <http://haritham.kerala.gov.in/greenprotocol/>



waste from houses and establishments to shredding units for recycling. This is formed as part of Haritha Kerala Mission campaign named 'Waste free Kerala' and is administered by each local government. Currently there are more than 22000 task force members, who collect waste and segregate into different sections based on its constituents<sup>7</sup>.

## Solution overview

The Community Based Approaches is an effort of overall development of capacity building program for the sanitation committee. The main objective of the program is to empower the sanitation committee through adequate capacity building so they in turn can carry out door-to-door awareness generation on waste management. This includes awareness and training on source segregation and systematic waste handling. The Community Based Approaches is also designed to improve the implementation of waste management policies and ensure compliance of municipal authorities.

The development of the training module can be supported by the Kerala Institute of Local

Administration (KILA). This entails development of training material for trainers and designing the awareness campaign. Knowledge products such as leaflets and pamphlets will also be developed such that it is easily comprehensible by all stakeholders.

Additionally, an educational curriculum can also be designed so that it can be introduced to students in primary and middle schools.

The implementation of the program will be overseen by the Kerala State Pollution Control Board (KSPCB), and can be financed through the Swachh Bharath Mission funds received by the state which is channelled through Suchitwa Mission.

For the execution, firstly the KSPCB will have to identify the right persons from local bodies who can become trainers. Then the KSPCB will undertake the training of trainers and local bodies which can be assisted by Haritha Karma Sena and Suchitwa Mission members. The members from the training program will then be responsible for general awareness raising activities at community level.

<sup>7</sup> <https://www.kudumbashree.org/pages/677>

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## Objective

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- Empowering sanitation committee through adequate capacity building program to enable them to carry out door-to-door awareness generation
- Improved awareness on source segregation and scientific waste management
- Better enforcement of law and order and implementation
- More effective utilization of funds

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## Key features

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- Financing through Swachh Bharat Mission funds and Suchitwa mission
- Training resources provided by Kerala institute of Local Administration
- Training and implementation by KSPCB and Haritha Karma Sena

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## Impact Potential

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- Improved waste segregation in community
- Increased awareness on proper management and disposal of waste
- Increased knowledge among young students on waste management
- Pressure on municipalities managing waste is reduced
- Cleaner cities and environment

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## Foreseen Challenges

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In the third and final policy roundtable, the participants further discussed the policy prototype and identified the following foreseen challenges:

- Absence of periodic reviews & monitoring
- Lack of effective implementation
- Lack of access to funding

- Challenging attitude of local population and continued use of conventional practices
- Lack of incentive for citizen participation (especially women and children)

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## Further Recommendations

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Additionally, the participants also discussed policy refinements and mapped out success strategies in the third meeting.

One of the main focus was to ensure involvement of local populous and participation of government bodies. This could be achieved by approaching student bodies such as SPC & NSS and integrating environment friendly waste management practices into student curriculums. This would increase student body involvement and eventually lead to environmentally conscious population. Additionally, key success factor in increasing the participatory process of government body is to conduct training and capacity building programs for the implementing authorities.

Another area of concern that the participants discussed was tourism and tourist regulations. The goal is to enforce stricter policies conduct awareness programs to reduce waste generation in regions with mass tourism as well as in religious and community gatherings. This mainly includes mitigation of cooking and food waste and SUP waste used in large events. This will also bring attention to sensitive areas such as coastal zones and benefit vulnerable communities.

Lastly, proper monitoring and evaluation of the policy is essential to ensure success. This includes periodic assessment and follow-ups with implementing bodies and waste management coordination at LSG committee level. More funding opportunities such as CSR can also be explored to help finance the implementation process.

## Group 2: District level Task Force

<b>Focus:</b>	District Level regulatory body
<b>Ecosystem Impact:</b>	Effective implementation of SUP ban, cleaner cities, better distribution of resources
<b>Challenge:</b>	Lack of proper monitoring body, Lack of effective implementation of policies

### Background

The roles and responsibilities for leadership in waste management are split across a number of Government ministries at State level. The waste management framework in Kerala is designed under the overarching Solid Waste Management and Plastic Waste Management rules of 2016, including the 2018 and 2021 amendment. Since national policies often lack the specificity to be implemented at a local scale in India, National Solid Waste Management Rules, 2016 postulate preparation of a state policy and solid waste management strategy for each state<sup>8</sup>.

The State Policy on Solid Waste Management 2018 outlines the various monitoring and evaluation responsibilities of the stakeholders and implementing authorities. The process is distributed through different tiers of Government to ensure continued improvement and performance efficiency<sup>9</sup>.

- The 73rd and 74th constitutional amendments entrusted Panchayats and Urban Local Bodies with many responsibilities

including Solid waste management. Existing legislations with respect to local governance empowers the Panchayat and municipal authorities to deal with waste management within their geographical limits.

- Kerala State Pollution Control Board is responsible for enforcing all provisions of the solid waste management rules, 2016 through the local governments in their respective jurisdiction. They also review its implementation at least twice year in close coordination with the Suchitwa mission, Directorate of Urban Affairs, Directorate of Panchayats, and Secretary, Local Self Government Department.

- The progress and performance of the waste management sector is monitored by the State Level Empowered Committee constituted for sanitation and the State Level Advisory Board for Solid Waste Management.

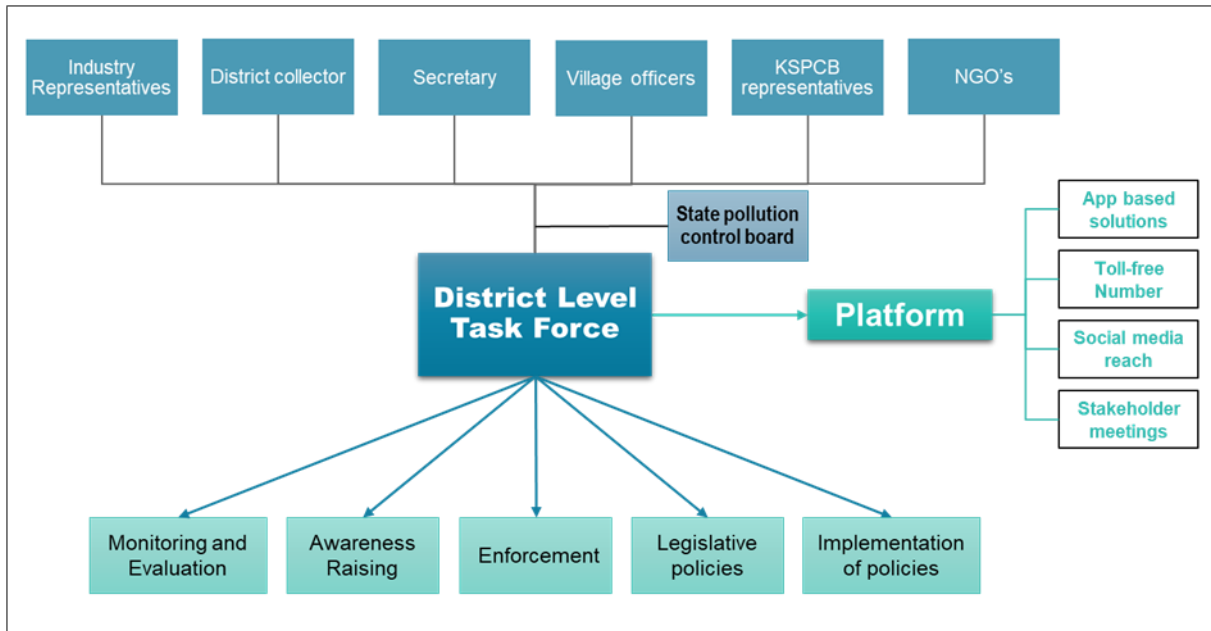
- In addition, the Haritha Keralam Mission is formed for enabling the integrated activities of waste management, which is chaired by the Chief Minister who reviews and monitors the Progress of the Sector. The respective chief executives of Haritha Keralam Mission also monitor the performance of Solid waste management sector and ensure corrective measures where required at district, city corporation, municipality and grama panchayat level.

Most recently, in June 2022, Kerala Solid Waste Management Project (KSWMP) was launched to strengthen the institutional and service delivery systems for solid waste management in Kerala. The project comprises three components (i) institutional development, capacity building, and project management (ii) grant support to Urban Local Bodies (ULBs), (iii) development of regional SWM facilities. KSWMP funds are allotted to the Urban Local Bodies as additionality to the budget provisions given as Plan fund by the State Government<sup>10</sup>.

<sup>8</sup> [https://cpcb.nic.in/uploads/MSW/SWM\\_2016.pdf](https://cpcb.nic.in/uploads/MSW/SWM_2016.pdf)

<sup>9</sup> <https://kspcb.kerala.gov.in/activities/waste-management/municipal-solid-waste>

<sup>10</sup> <https://kswmp.org/>



## Solution Overview

The District Level SUP Task Force (DLTF) will be set-up to support effective implementation of SUP ban mandates. The Kerala State Pollution Control Board enforces the SUP at a state level, and the city municipalities enforce it at a local level. However, there is no monitoring body at district level to help facilitate policy implementation.

The primary role of the District Level Task Force will comprise of monitoring and evaluation activities. This includes enforcement of legislative policies. The DLTF will also play a role in promoting beneficial state government schemes such as buy-back incentives, organic waste composting and recycling schemes.

Another important role that the DLTF can play is to organise awareness programmes and activities at district level, such as promoting the use of sustainable alternatives instead of SUP items. Such activities can be extended to target primary and secondary schools, by organising district-level competitions and knowledge programmes for students. This encourages overall improvement in waste management practices and increases decentralised waste

management which leads to reduction of Marine Litter.

The DLTF is designed to be easily accessible by all stakeholder groups through multiple-platform engagement. The DLTF will have a strong digital presence through the use of social media pages for information dissemination and awareness raising. It will also develop user-friendly app-based solutions that can be used in multiple languages including Malayalam and English. Additionally, a toll-free number will be set up so that stakeholders can directly address any issues or concerns. To further increase stakeholder engagement in the policy implementation process, the DLTF will organise quarterly stakeholder meetings to receive feedback.

A steering committee will be established by the Government of Kerala who will in turn appoint the District Level Task Force members. To maximise stakeholder representation, the members are to include, the District Collector, Secretary of Local Self Government Institution, Kerala State Pollution Control Board representatives, Industry Representatives, and NGO's.

## Objective

- To effectively implement the legislation and policies related to SUP ban
- To develop a proper monitoring and evaluation system for SUP policy implementation
- To implement buy by-back and incentive-based recycling system
- To raise awareness on plastic waste and to promote eco-friendly alternatives to SUP

## Key Features

- Digital platform with app-based solutions and toll-free number
- Involvement of multiple stakeholders
- Improved monitoring and evaluation system of single use plastic
- Awareness raising through social media reach

## Impact Potential

- Reduction of Single-use plastic and overall Municipal waste
- Better implementation of legislations and policies related to SUP ban
- Increased stakeholder engagement

## Foreseen Challenges

The participants further discussed the policy prototype and identified the following foreseen challenges:

- Village officers may not be effective in implementation
- SUP from packed goods brought to the market by industries
- Principal directorate recently set up by the Local Self Govt. Department of Kerala

## Further Recommendations

The policy refinements and success strategies discussed in the third policy roundtable are as follows:

One of the key success factors in the policy implementation is to ensure a proper monitoring and evaluation framework. An SUP monitoring committee can be established at state level, district level, as well as at panchayat level. All panchayats should be involved in the process which ensures positive impact and longevity of the policy. There can also be a monitoring panel at the Local Self Govt. Department (LSGD) level which includes hotels, tourism SME's and NGOs, and the Principal Director of the LSGD can be approached to take the lead.

Another important activity for policy success would be overall awareness creation in educational institutions and marginalised societies. Schools, colleges and universities can be actively involved by introducing Waste management and marine litter prevention can in the curriculum. It is also important to bring awareness to existing mechanisms and promote initiatives such as Green Protocol to encourage citizen participation. The government can also support R&D for biodegradable plastics and promote start-ups offering sustainable alternated to SUP.

A way to ensure compliance of the SUP mandate would be to firstly provide necessary information and support to the vendors. The technical wing should also give resource support and raise awareness in marginalised societies. Additionally, a toll-free number can be set up to answer queries and there can be an app in which non-compliance can be reported.



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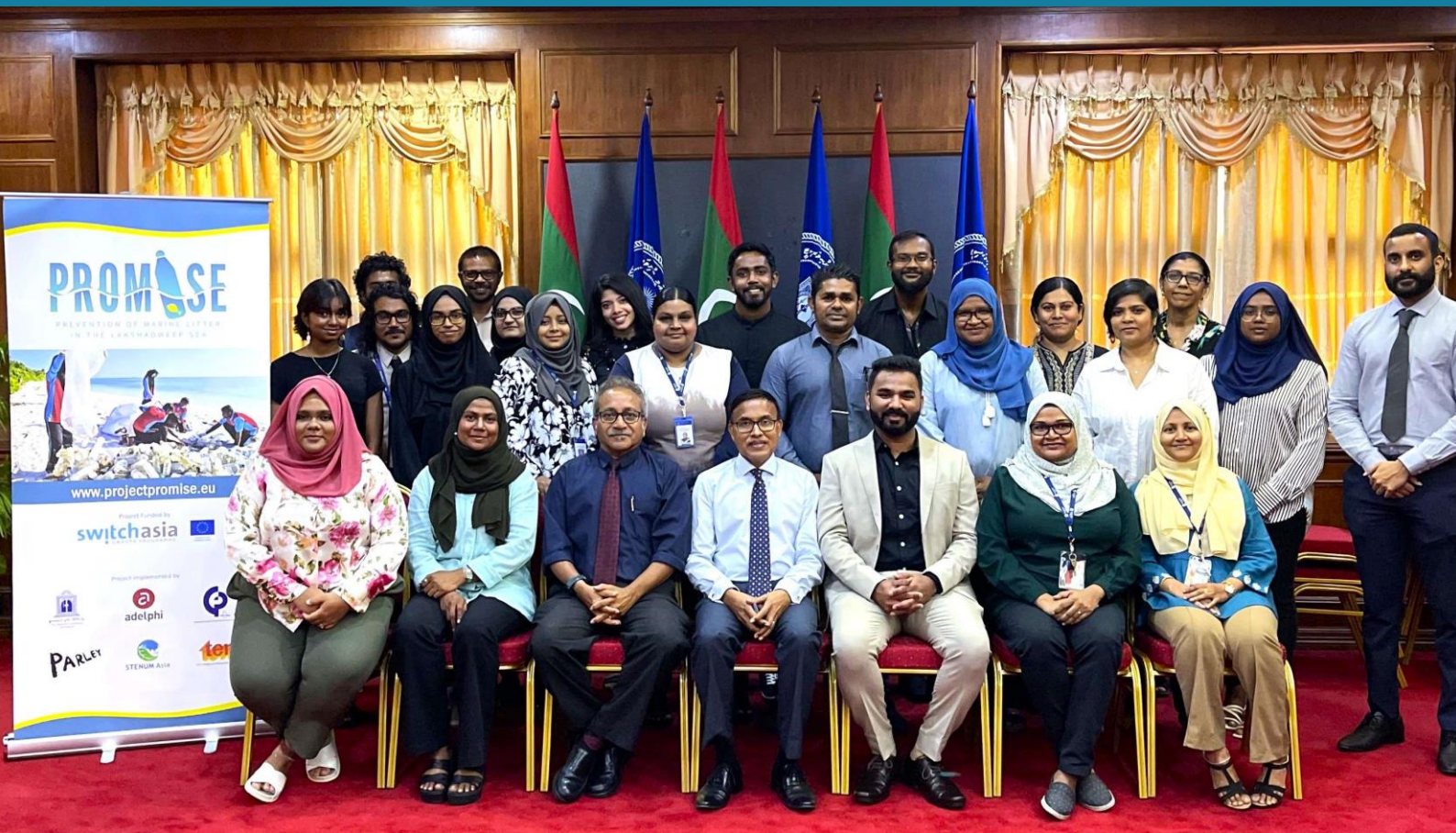


Maldives

(Output Paper)

# Policy Solution Prototypes for Marine Litter Prevention in Maldives

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The project team expresses its gratitude to all the participants of the roundtables for a very valuable and highly appreciated contribution.

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## Project Contribution to SDGs:



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## List of Abbreviations:

- MoECCT- Ministry of Environment, Climate Change and Technology
- MOT- Ministry of Tourism
- MNU- Maldives National University
- MOE- Ministry of Education
- MOH- Ministry of Health
- HPA- Health Protection Agency

Project Implemented by:



## Introduction

[Prevention of Marine Litter in the Lakshadweep Sea \(PROMISE\)](#) is a 4-year project (2020-2024) supported by the European Union (EU) under the SWITCH Asia Programme.

In recent years, the project partner countries, Maldives, Sri Lanka and India have undergone substantial growth in tourism clusters located along their shorelines of the Lakshadweep Sea. This led to economic well-being of the local population. However, due to high consumption rates of fast-moving consumer goods (FMCG) and single-use plastic packaging, tourism industries have also been identified as major contributors to marine litter. In many touristic regions of the global south, this is aggravated by the absence of effective policy frameworks, a lack of consumer awareness and insufficient capacities of local authorities to handle the increasing solid waste (PROMISE, 2022).

The PROMISE project responds to this by preventing leakage of wastes from land-based sources into the Lakshadweep Sea in line with a Sustainable Consumption and Production (SCP) approach. To achieve the desired impact, the activities target tourism clusters located along **the Lakshadweep shorelines in the Maldives, Sri Lanka and India.**

As part the project PROMISE, a series of policy roundtables were organised with an aim to prototype policy solution mechanisms for challenges in prevention of marine litter. Three policy roundtables were organised, each focusing on Defining challenges (1st), Solution prototyping (2nd), and Public showcasing of policy mechanisms (3rd). Every roundtable will feed-in inputs to the next one to prototype potential policy solutions that can help national policy makers in furthering marine litter prevention policies.

This policy roundtables aim to bring together policy makers, governmental bodies, institutions, development organisations, associations, NGOs and social enterprises working in waste management and marine litter prevention projects to discuss and elaborate on major challenges through co-creation

methodology with series of policy mechanism design tools.

The first policy roundtable (Defining Challenges) was conducted in Maldives on 22.03.2022, where the participants discussed the current challenges and gaps in policies for Maldives to prevent marine litter.

Building on this, in the second policy roundtable (Solution Prototyping), was conducted on 06.06.2022 where participants focused on policy benchmarking (best cases) and the potential adaptation to the Maldivian context. They further designed and developed policy prototype solutions mechanisms for the challenges that were identified in the first policy roundtable.

The groups came up with four main policy solutions:

- Online information & matchmaking platform for waste policies and services
- Restructuring of Single-Use Plastic phase out committee with formation of nodal agency
- Refining the policy formulation and implementation process including needs assessment & monitoring and evaluation systems
- Nationwide waste management campaign as 'Mindful Citizens' for awareness on waste and it's implementations to our ocean

The third and the final policy roundtable will be a public showcasing of policy prototypes developed by the participants.

The prototypes detailed in this document were developed collaboratively by the participants. This document serves as the Output Paper summarizing the prototypes co-created by each of the four groups during the Policy Roundtables, incorporating inputs and feedback received during the public showcasing. The subsequent section provides a comprehensive delineation of the solutions/ prototypes for each group, along with the visualization of the mechanisms created for these solutions. The overarching aim of this paper is to influence national policymakers in the effective drafting and implementation of marine litter policies.

## Group 1: Kuni Hallu-Information Hub

<b>Focus:</b>	Knowledge and information dissemination
<b>Ecosystem Impact:</b>	Access to information, Waste reduction, Attitude and behavioral change
<b>Challenge:</b>	Lack of information

### Background

The management of solid waste is a pressing environmental issue with Maldives generating about 365,000 tons of solid waste annually. Recent estimates indicate that solid waste is generated at a rate of 1.8 kg per person per day in Malé, 0.8 kg per person per day on the other inhabited islands, and 3.5 kg per person per day in resort islands<sup>1</sup>.

Awareness raising amongst stakeholders including citizens, consumers, tourists, SME's and state employees is key instrument in tackling waste management issues. Information mobilizes the community, enhances voluntary compliance and community engagement within the system. Lack of awareness surrounding waste pollution problems and sustainable methods of waste management leads to increase in waste generation. Even though there are several public and private efforts for awareness raising and information dissemination, there is often a gap in successful implementation and the initiatives are short lived.

The Strategic Action Plan (SAP) of the Government of Maldives (a central policy framework and planning document that guides the overall development direction of the Maldives from 2019-2024), highlights that the

government's strategy to deal with waste management centers on recognizing waste as a valuable resource and includes four main policies. The fourth policy drives to "Instill environmental values in the society and promote environmentally friendly lifestyle". The policy targets that by 2023, at least 65% of students recognize the importance of reducing, reusing, and recycling waste products<sup>2</sup>.

Another major effort to reduce waste by the Government of Maldives is the "Single Use Plastic Phase-out Plan 2020-2023" (SUP phase-out plan). By using strategic awareness and educational campaigns, the SUP phase-out plan aims to reduce the consumption of single-use plastics, and nudge consumers to shift away from SUP's, and use sustainable alternatives. Activities under policy 6 of the action plan, seeks to make the public aware about the long-term and short-term impact of single-use plastic on the environment as well as human health. The main objective of the policy is to help the public, government and business entities to understand the potential positive impact of a collective effort to make a conscious choice of using sustainable alternatives instead of single-use plastics<sup>3</sup>.

The key challenges to be addressed include:

- Lack of proper understanding of why waste should be managed sustainably.
- Lack of awareness on servicing and maintenance of alternatives.
- Lack of networking among NGO's and other stakeholders.
- Lack of long-term sustainable programs and Engagement of stakeholders
- Lack of access to reliable information on waste management

<sup>1</sup> <https://www.worldbank.org/en/news/press-release/2017/06/23/maldives-improve-solid-waste-management>

<sup>2</sup> <https://presidency.gov.mv/SAP/>

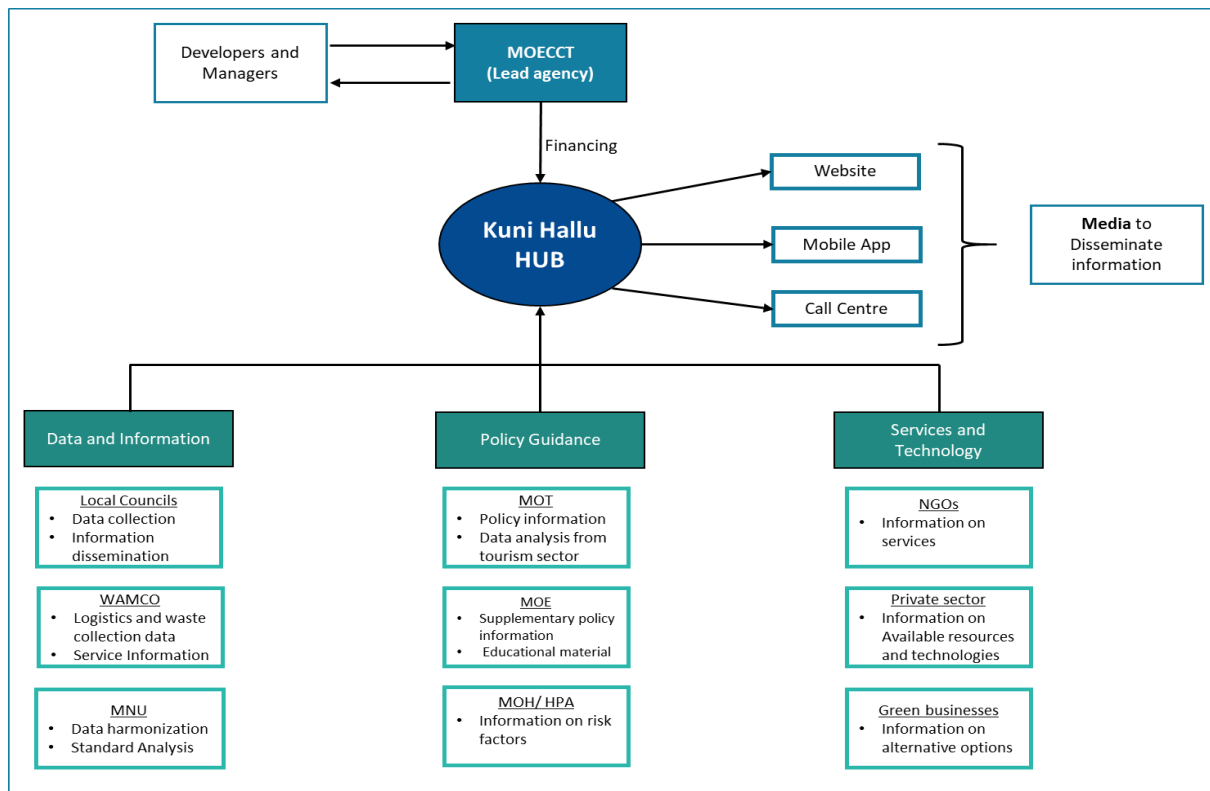
<sup>3</sup> <https://www.environment.gov.mv/v2/en/download/11572>

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## Solution overview

including a website, mobile app and a physical call center.



The purpose of the Kuni Hallu information Hub is to create a common platform where all information related to waste reduction and management such as policy guidelines, best practices, sustainable alternatives etc. is easily available. The platform is designed such that it is easily accessible by public, private and government sectors alike. The Hub will present information in varying formats to target multiple stakeholders.

The information available on the platform aims to include, baseline information related to marine litter prevention, current research and relevant findings from the field, information on policy guidelines, demonstration of best practices, statistics and fun facts, short videos that can be shared on social media platforms and so on.

The lead agency in charge of development, financing and coordination of the Hub would be the Ministry of Environment, Climate Change and Technology (MoECCT). To start off with, Kuni Hallu will be designed on three platforms

The Hub intends to engage multiple stakeholders for information dissemination and coordination. This ensures a wide range of material and would also encourage networking and building synergies amongst stakeholders.

Local councils and Waste Management Cooperation Limited (WAMCO) would be involved in collecting data on waste generation and composition, waste collection data and providing service information. Academic institutions such as Maldives National University (MNU) will be involved in data harmonization and data analysis to get interpretable results.

Information and guidance on waste management and waste prevention policies can be provided by government ministries. For example, the Ministry of Tourism can provide current policy material and implementation strategies, along with relevant information and data for stakeholders. Whereas, the Ministry of Health and Health Protection Agency can disseminate information regarding the adverse health and environmental impacts of plastic waste. The Ministry of education can prepare educational material on policy information that

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is presented in a simple and easy-to-understand manner tailored to different audiences and age groups.

Furthermore, the private sector will be engaged in providing information on various resources and technologies available to combat waste. While NGO's can offer information on waste management services and facilities that are available, green start-ups and ecofriendly businesses can provide alternate and sustainable products and solutions.

Overall, the Kuni Hallu Information Hub will be an information platform engaging multiple stakeholders to help better waste management efforts in the Maldives.

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## Objective

The primary objectives of the Kuni Hallu Information Hub are:

- Enhancing access to information on waste management
- Networking and building synergies between stakeholders
- Providing a one-step solution

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## Key features

- One-stop-shop for waste management information and solutions
- Multiple stakeholder engagement
- Accessible through various platforms including website, mobile app and physical center
- Scaling potential of platforms

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## Impact Potential

- Heightened awareness and access to information
- Waste reduction and better management of waste
- Attitude and behaviour change due to change in perceptions
- Good data available for research purpose

- Provides opportunities for waste to wealth
- Reduction in waste leakage/ pollution

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## Foreseen Challenges

In the third and final policy roundtable, the participants further discussed the policy prototype and identified the following foreseen challenges:

- Availability of data
- Data ownership and Data censorship
- Financing the HUB activities and building the needed Capacity
- Managing and monitoring data and publications

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## Further Recommendations

Additionally, the participants also discussed policy refinements and mapped out success strategies in the third meeting.

The first step would be to establish a committee which identifies the operating body and oversees daily activities. This also includes dedicated environmental officers and staff from local councils who oversee the implementation and, monitoring and review process. The operating body can be independent or outsourced and can be given online as well as in-person training to establish knowledge.

The next step would be to secure the finances for implementation and establish a sustainable finance mechanism. This includes applying for funding and identifying additional projects which can manage or deliver the Kuni Hallu activities.

Lastly, awareness raising and marketing activities are important to ensure success of the Kuni Hallu. Apart from the general public, schools and educational institutions are key targets to disseminate the information. Awareness activities can include media campaigns, social media engagement and beach clean-ups which encourage public participation in marine litter prevention.

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## Group 2: Plastic phase-out committee

<b>Focus:</b>	Policy coordination, improved communication system, monitoring and evaluation
<b>Ecosystem Impact:</b>	Increased transparency in data and information, reduced plastic waste, evidence-based decision making
<b>Challenge:</b>	Lack of communication and coordination, lack of consistent stakeholder engagement

### Background

Maldives being a popular tourist destination, generates up to 25,000 tons of plastic waste every year. And, due to poor management practices, as much as one third of it ends up in the coastal ecosystem<sup>4</sup>. One of the key elements of the waste management regulation is to develop guidelines on waste management and disposal and advocate enforcing these guidelines through inter-sectoral collaboration.

There is lack of coordination between the government and other stakeholder groups in the waste management system. Since several stakeholders have overlapping responsibilities, there needs to be a defined communication process which ensures that all players contribute equally and efficiently to the waste management process. With no proper coordination, several activities may be duplicated while other important activities get

delayed due to lack of initiative or lack of finances.

The single-use plastic (SUP) phase-out plan is an effort from the Government of Maldives to phase-out SUP by 2023. Furthermore, it is in line with the Strategic Action Plan (SAP 2019-2023) as well as the SDG's 14 and 15.

The SUP phase-out plan aims to phase-out plastic by implementing six policy goals which includes: ban of import, production and sale of specific SUP products; market-based economic instruments which discourage the consumptions of SUP's; Improving national waste data and setting national collection and reduction targets for key SUP's; Extended Producer Responsibility (EPR); provision of sustainable alternatives; and education and awareness<sup>5</sup>.

The three policy instruments that the plan relies on for successful implementation are command and control instruments such as regulation and prohibition, economic instruments such as tariffs and incentives, and informative instruments such as awareness and education.

However, in such an implementation approach, there is lack of representation of various stakeholders. There is a gap in communication and information sharing which helps to create continuous feedback loop that can further improve and develop the policy strategies.

The challenges to be addressed include:

- Lack of standardization of waste management protocols
- Shortcomings in policy implementation
- Lack of strong monitoring mechanism which holds accountability
- Consistent stakeholder engagement

<sup>4</sup> <https://www.worldbank.org/en/news/feature/2022/07/22/maldives-is-turning-waste-to-wealth-energizing-youth-to-safeguard-its-future>

<sup>5</sup> <https://www.environment.gov.mv/v2/en/download/11572>

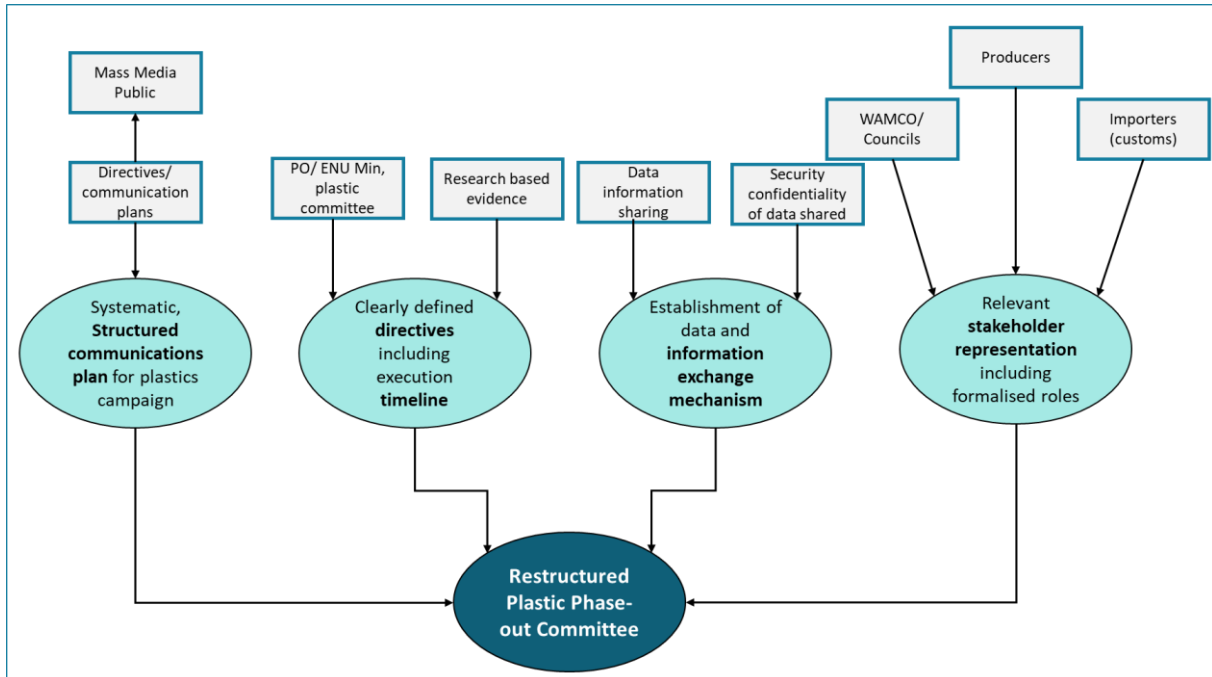
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## Solution Overview

The first step in re-establishing a plastic phase-out committee would be to review the existing policy mechanism and implementation strategy and identify the gaps. This would include identifying different stakeholders that are

The committee will develop a structured communication plan which is to be used for the plastics campaign. This includes multi-media communication methods, frequently scheduled stakeholder interactions and information exchange. The resulting outcomes and relevant knowledge from stakeholders will be shared with the public using mass media platforms.



currently not well represented in the policy process. The new phase-out committee would then aim to provide clear directives of an implementation and monitoring mechanism such that systematic communication is improved between relevant stakeholders. The committee will further consider the feedback to routinely improve the implementation strategy.

The Plastic Phase-out Committee is built on four main objective pillars:

- Structured communication plan for plastics campaign
- Clear Directives including execution timeline
- Establishment of data and information exchange mechanism
- Relevant stakeholder representation in policy process

Another important role of the Plastics Phase-out Committee is to define directives for policy implementation including a well-planned execution timeline. The President’s Office and along with the MoECCT will be involved in developing the directives using academic knowledge and research-based evidence. The committee will then further ensure that there is no lag in activities.

Additionally, a data and information exchange mechanism will be established between government, industries, and institutions. The committee will play a key role in monitoring the shared data and ensuring confidentiality of the data. The shared information and data will be further analysed to improve the implementation process.

The committee will also include a variety of stakeholders with formalised roles. For example, the Waste Management Corporation (WAMCO) will be involved in collecting data on

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waste generation and composition, waste collection data and providing service information. The plastic packaging sectors will be consulted in regulating the industry procedures to phase-out plastic usage. And importers will be engaged in forming customs regulations and directives.

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## Objective

- Improving the implementation of SUP phase out plan
- Develop a systematic and structured communication plan
- Establish clear directives with an execution timeline
- Establishment of data information sharing, exchange mechanism
- Involvement of relevant stakeholders

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## Key Features

- Better Representation of stakeholders
- Clearly defined execution timeline
- Improved and structured communication methods
- Increased transparency
- Improved data protection

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## Impact Potential

- Greater, more diverse ownership of the challenge
- Increase in vested interests of the solutions
- More transparency in shared information
- Clearly defined directions of policy shared among all stakeholders
- Evidence-based decision-making process
- Better waste management
- Reduction of plastic waste
- New economic opportunities

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## Foreseen Challenges

The participants further discussed the policy prototype and identified the following foreseen challenges:

- Structure of SUP phase out committee
- Lack of political willingness and active involvement
- Mobilisation of resources
- Improperly defined roles and responsibilities
- Lack of proper precedent

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## Further Recommendations

The policy refinements and success strategies discussed in the third policy roundtable are as follows:

In establishing the SUP phase-out committee, firstly representation of both public and private sectors in the committee development needs to be ensured including NGOs and local councils. Then, it is important to clearly define the roles and responsibilities and TOR of the committee. The committee can also present meeting reports and quarterly reports to ensure transparency in the implementation process.

Political willingness is also key to ensure smooth activity and necessary resource mobilisation. The state can also involve in building technical capacity and in drafting a policy paper which includes all stakeholders. And lastly, creating awareness on the policy and targeting early childhood education linking impact on economy and livelihood will ensure successful implementation.

## Group 3: Vashajehey- Circular Solutions

<b>Focus:</b>	Sustainable waste management infrastructure in each island community
<b>Ecosystem Impact:</b>	Less pollutants and healthier ecosystem, improved quality of life, diversified income generation
<b>Challenge:</b>	Lack of proper waste management infrastructure

### Background

To preserve Maldives' pristine beaches, sustainable solid waste management should be prioritized. Most of the 860 metric tons of waste generated daily in the Maldives is collected and openly dumped on Thilafushi island. With no control measures, the waste is burned out in the open, since landfills are not possible in a nation that is 99% water. A large amount of this waste is plastic and generates toxic smoke causing a public health hazard for over half a million people. The microplastics released from the waste also enters marine life, contaminating food sources and damaging its coral reefs and blue economy. This manner of waste disposal also threatens tourism and fisheries, which rely heavily on the country's pristine environment and are cornerstones of Maldives' economy<sup>6</sup>.

There is lack of adequate infrastructure to manage various kinds of waste on the islands, especially given the limited availability of land and the dispersion of islands over a large geographic area. At present, there are only limited waste collection services, treatment and disposal systems available throughout the islands. A lot of the available technology lacks innovation and is not small-island friendly. New

technology exists, but it requires technical knowledge and expert operation.

Within the islands and atolls, there is insufficient funding for waste management infrastructure, equipment, and practices. There is no logistical support and economic transportation means to sustain the waste management infrastructure. The waste management infrastructure also needs to consider the growing population size and increasing purchasing capacity which leads to more waste generation. There is no need analysis of the waste stream before infrastructure is implemented.

The government has prioritized this issue and aims to shift from a 'use and dispose' economy to a more circular economy so that the Maldives natural environment along with its tourism economy is protected. The Strategic Action Plan 2019–2023, laid out strategies for effective solid waste management. This included setting up regional waste management facilities armed with waste-to-energy (WTE) technology.

The Ministry of Environment, Climate Change and Technology (MoECCT) is responsible for planning and implementing waste management projects including "Greater Male Environmental Improvement and waste Management Project", which is a five-year project from 2018-2023. The Project is a multi-donor funded project which aims to establish a sustainable solid waste management system for the Greater Male' capital region and its inhabited outer islands. The main output of the project is to establish a Regional Waste Management Facility (RWMF) with waste-to energy treatment plant in Thilafushi<sup>7</sup>.

The challenges to be addressed include: Lack of coordination between relevant authorities, Willing Leadership, Funding and resources, Logistics, Geography and Lack of space.

<sup>6</sup> <https://www.worldbank.org/en/news/feature/2022/07/22/maldives-is-turning-waste-to-wealth-energizing-youth-to-safeguard-its-future>

<sup>7</sup> <https://www.environment.gov.mv/v2/en/project/8039>

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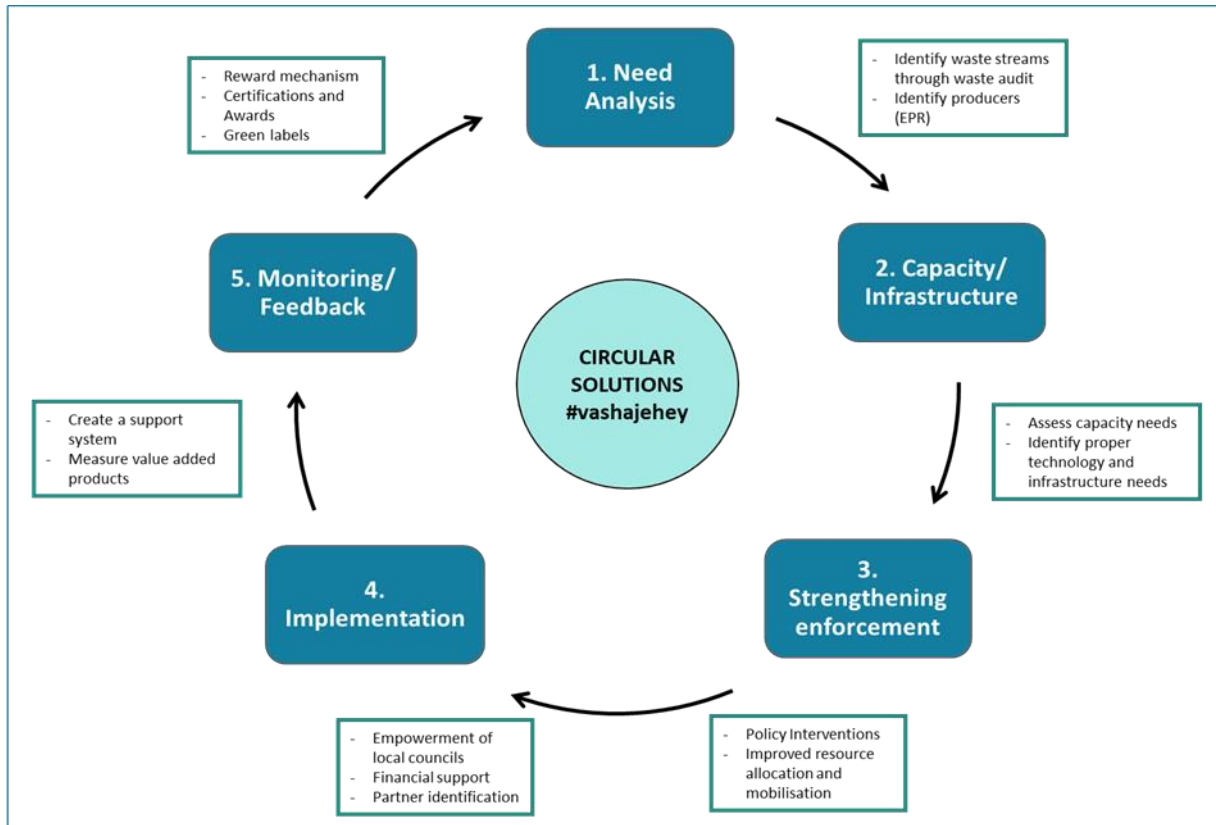


## Solution Overview

Circular Solutions is a comprehensive, fully functioning, sustainable waste management infrastructure that is to be set up at island level so that it is accessible to all communities.

machineries and technologies needed can be identified.

Next, government authorities such as the President's office and councils will help strengthen the enforcement of mechanism. The right policy intervention from the MoECCT is vital at this stage to improve resource allocation



It includes a five-step process of:

1. Need Analysis
2. Capacity and Infrastructure
3. Strengthening Enforcement
4. Implementation
5. Monitoring and Feedback

Firstly, technical experts from WAMCO and private consultancies will conduct a gap analysis to identify gaps in the current waste management infrastructure. This would also comprise of a study identifying waste streams through a waste audit and characterizing a list of producers to help implement Extended Producer Responsibility (EPR) policies.

The second step is developing a suitable infrastructure based on the results of the need analysis. This involves conducting a market analysis and assessing the capacity needs for infrastructure. Based on this, proper

and mobilize funds for setting up the required infrastructure. For implementation process, relevant ministries, WAMCO and NGO's will be involved. This includes creating a support system for agencies and promoting value added sustainable products such as biodegradable plastics.

The final part of the mechanism is proper monitoring and feedback of the process. At this stage, feedback from all stakeholders such as NGO's, public members, private industries and so on will be considered. A reward mechanism such as providing green labels, certifications and awards will also be set up to incentivize best practices in waste management.

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## Objective

- Fully functioning sustainable waste management infrastructure in each island/ community
- Continuous improvement of infrastructure through feedback loop
- Mobilizing resources to improve waste management at island level
- Reduce un-sustainable and hazardous waste disposal methods

## Key Features

- Comprehensive need analysis and waste streaming prior to waste management infrastructure establishment
- The waste management infrastructure planned will be island specific
- Incentives given to industry and private sector to manage waste
- Policy intervention to improve coordination between sectors

## Impact Potential

- Environmental:
  - Reduced number of pollutants released to into the environment leading to healthier ecosystems
- Social:
  - Improved quality of life (better health)
  - Happier people
- Economic:
  - Diversified income generation
  - Waste to resources, new products to the market (compost, etc.)

- Logistics and planning needed for proper execution
- Lack of awareness amongst people
- Mobilising the necessary funding and resources
- Lack of space and infrastructure

## Further Recommendations

The policy refinements and success strategies discussed in the third policy roundtable are as follows:

To implement circular solutions, the process needs to start at Government level. Firstly, a waste management council needs to be established by the state. Then, the council should also be acknowledged and recognized at regional and National level and, allocated a specific budget for activities.

After conducting a thorough need analysis, training and development of the technical staff can be facilitated by the council. They can also arrange monthly meeting for stakeholders to get feedback and make improvements. Awareness programs can be conducted at national and island level to increase citizen participation. And, in islands which have space, the community can also be given the responsibility of food waste processing to save on transportation and ease logistics.

## Foreseen Challenges

The participants further discussed the policy prototype and identified the following foreseen challenges:

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## Group 4: The Mindful Citizen

<b>Focus:</b>	Consistent and continuous messaging from an early age, holistic behavioral change
<b>Ecosystem Impact:</b>	Mindful citizens, less waste generation, cleaner environment, sustainable economy
<b>Challenge:</b>	Lack of awareness on policies

### Background

Awareness raising amongst stakeholders including citizens, consumers, tourists, SMEs, and state employees is key instrument in tackling waste management. Even though there are several public and private efforts for awareness raising, there is often a gap in successful implementation and the initiatives are short lived. Long-term efforts are not prioritized and financed when it comes to awareness efforts.

Awareness mobilizes the community, enhances voluntary compliance and community engagement within the system. The National Solid Waste Management Policy (2015) has 11 primary policies, the last of which is: (11) “the community participation in and awareness about good waste management practices will be maximized”.

The government’s strategy to deal with waste management in the country centers on recognizing waste as a valuable resource which has four main policies. The fourth policy is to “Instill environmental values in the society and promote environmentally friendly lifestyle”. The first target of policy 4 is that by 2023, at least 65% of students recognize the importance of reduce, reuse, and recycle waste. The strategy

for implementation is as follows: develop and conduct a nation-wide awareness program that engages and informs the government institutions, businesses, and the general public on proper waste management practices, for which the lead implementation agency will be the Ministry of Environment<sup>8</sup>.

There seems to be apathy and lack of political will to communicate the significance and urgency of waste management. When it comes to government policies, there is often lack of sustainable monitoring mechanism which ensures effective implementation. And there is also lack of coordination between NGO’s, institutions and other national and international stakeholders while planning activities and releasing awareness-raising material.

The main role of awareness raising efforts is the behavioral change of consumers to move towards zero-waste lifestyle. It is more important to avoid waste generation rather than generating waste and managing it. For this, it is important to have knowledge about sustainable alternatives, servicing and maintenance options, and long-lasting products in the market. Schools and institutions should be the primary focal point of waste-management education since, it is most important to develop sustainable habits from a young age.

The Challenges to be addressed include:

- Targeting lifestyle and behavior change in societies
- Continuity and sustainability of awareness message
- No proper curriculum designed for young children and students
- Lack of awareness on sustainable alternatives
- No proper incentives for green businesses

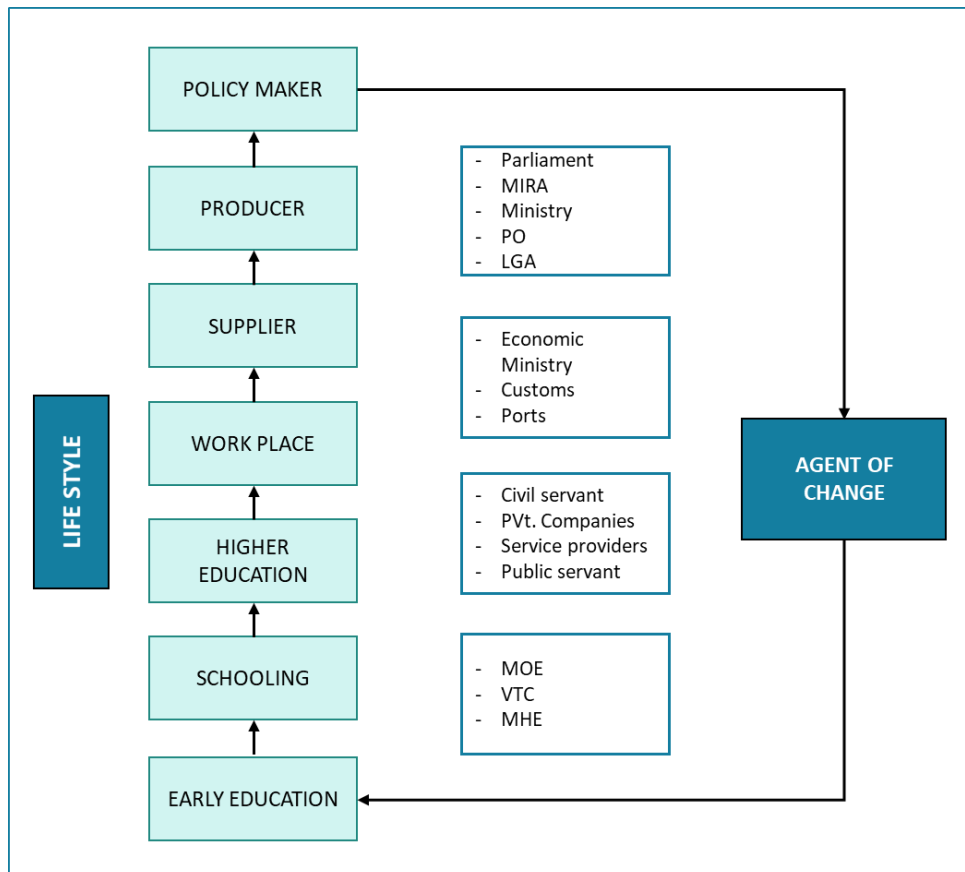
<sup>8</sup> <https://www.mvlaw.gov.mv/pdf/gavaid/minHousing/28.pdf>

## Solution Overview

The primary objective of “The Mindful Citizen” policy mechanism is to create a holistic approach towards environmental awareness and sustainable lifestyles. It is a long-term solution which targets awareness raising in the overall population from a young age.

Additionally, community engagement is created by organizing local cultural events, flea markets, food festivals etc., to carry the message. Workplace engagement can be organized through informative seminars and workshops on zero-waste lifestyle. Private companies can also encourage their employees to use reusable and sustainable items by giving small incentives.

The Ministry of Tourism can specifically design



Information and education play a vital role in realizing the policy outcomes. The Ministry of education will oversee the curriculum design from primary to high school education. This would include essential knowledge about environment and the importance of waste management. The younger age groups can engage in the topic through creative and interactive mediums such as art competitions, poetry recitals, street plays and so on.

These efforts are further continued for adults and general public through mass media awareness campaigns. The core messages that are shared is lifestyle change and shift towards sustainable products.

a long-term campaign for SMEs, hotel, and resort owners to share best practices of waste management methods. These efforts will also extend to tourists who visit the island by providing information and guidelines for waste management in Maldives.

Another important sector to target is the industry itself. This includes producers, suppliers, and importers. The Economic Ministry along with the Customs authority would plan and implement an EPR Policy to regulate plastic usage.

## Objective

- Holistic approach to environmental awareness
- Strengthening monitoring and policy implementation

## Key Features

- Holistic approach
- Early childhood education
- Consistent and continuous messaging
- Long-term policy solution
- Targeting behavioral and lifestyle change

## Impact Potential

- Mindful citizens
- Less waste generated
- Cleaner environment
- Eco friendly business

## Foreseen Challenges

The participants further discussed the policy prototype and identified the following foreseen challenges:

- Training the schools and educational institutions (teachers/ principles)
- Government policies which tend to change quickly
- Lack of consistency continuity in long-term implementation

- Barriers and challenges in bringing sustainable alternatives into the market
- Reaching students in higher education
- Issues with mindset of parents and unwillingness to bring change

## Further Recommendations

Since the 'Mindful Citizen' is a long-term policy change and targets overall education and awareness raising, it is important to first influence educators and policy makers. Practical education sessions and workshops can be made mandatory for ministers to establish political solutions. Moreover, existing regulations on waste management and marine litter prevention can be linked to educational and awareness programs.

There can be several approaches to establish long-term awareness such as, organising environment friendly expos where sustainable alternatives are promoted or, to encourage and activate existing environmental and social student clubs. MOE can lead inclusive and consistent educational programs while WDC leads community based environmental programmes and supports immediate implementation. Establishing a self-financing mechanism through fundraising, sustainable businesses and fees is also key in ensuring long-term implementation of the policy.

## Recommendations

- **Perform Comprehensive Situation Assessment:** Initiate regular monitoring and evaluation (M&E) of existing policies, regulations, and projects related to marine litter to ensure effectiveness and identify areas for improvement.
- **Conduct Community Stakeholder Consultations:** Engage in consultations with community stakeholders to gain insights into the current situation and challenges faced at the local level. This participatory approach ensures inclusivity and local buy-in for future initiatives.
- **Promote Private Sector Engagement in PET Waste Management:** Encourage active participation of the private sector in the management of PET waste. Conduct multi-stakeholder discussions to implement Extended Producer Responsibility (EPR) schemes and other initiatives that hold businesses accountable for their waste.
- **Collect Disaggregated Import Data:** Establish a system to collect disaggregated import data on non-degradable products and packaging. This data will help quantify the extent of waste generated and identify key areas for intervention.
- **Develop Sustainable Waste Collection Model:** Create a sustainable and practical model for waste collection from all atolls. This model should be designed to efficiently gather waste while considering the unique geographic and logistical challenges of the Maldives.
- **Integrate Decentralized Waste Management:** Implement a decentralized waste management system at the national level. This approach ensures that each atoll has the capacity to manage its waste effectively, tailored to its specific needs.
- **Increase Funding for Prevention Initiatives in Tourism:** Allocate increased funding and financial incentives for marine litter prevention initiatives within the tourism industry. Target green finance opportunities specifically for Micro, Small, and Medium Enterprises (MSMEs) operating in tourism.
- **Conduct Regular Awareness Programs:** Organize regular awareness programs for island communities and local councils. These programs should educate on the importance of waste management, provide practical tips, and foster a culture of responsibility towards the environment.
- **Establish Nodal Governmental Body for Coordination:** Formulate a dedicated governmental body or institution tasked with managing and implementing an efficient waste management system. This body should ensure effective coordination among various stakeholders for streamlined efforts.
- **Promote Entrepreneurship in Waste Management:** Encourage entrepreneurship programs and projects focused on both downstream (waste collection, recycling) and upstream (waste reduction, eco-friendly alternatives) aspects of waste management. This fosters innovation and sustainable practices within the sector.

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These recommendations, when implemented cohesively, aim to address the marine litter challenge in the Maldives comprehensively. By engaging stakeholders, enhancing data collection, promoting private sector involvement, and fostering a culture of responsible waste management, the Maldives can move towards a cleaner and more sustainable marine environment.

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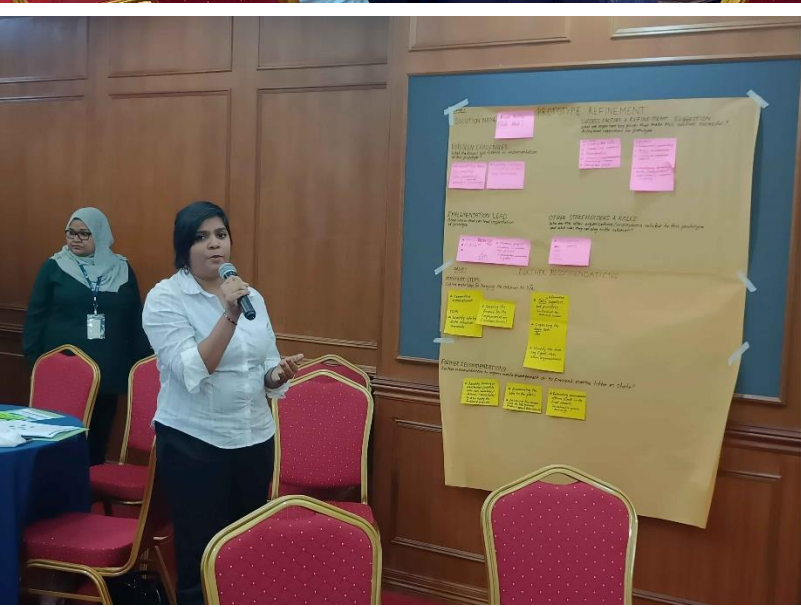
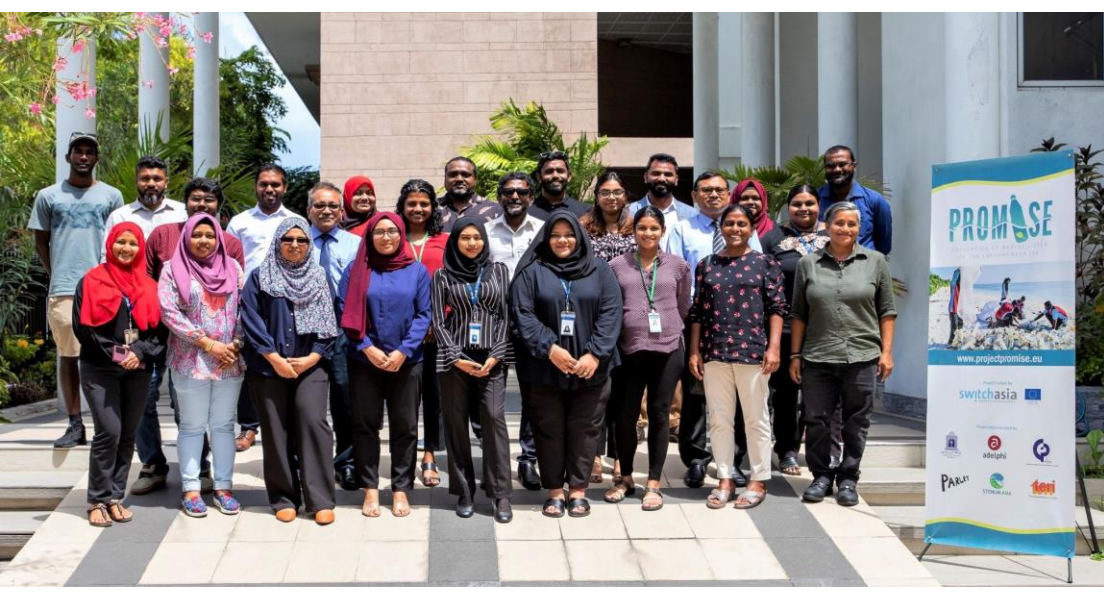


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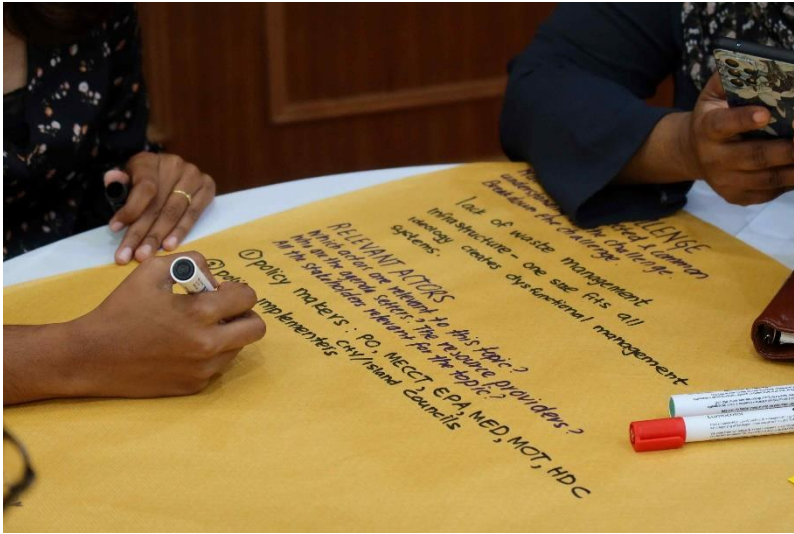
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Sri Lanka

(Output Paper)

# Policy Solution Prototypes for Marine Litter Prevention in Sri Lanka

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The project team expresses its gratitude to all the participants of the roundtables for a very valuable and highly appreciated contribution.

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## Project Contribution to SDGs:



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## Introduction

Prevention of Marine Litter in the Lakshadweep Sea (PROMISE) is a 4-year project (2020-2024) supported by the European Union (EU) under the SWITCH Asia Programme.

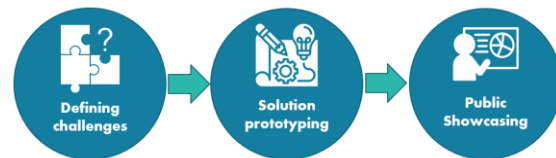
Tourism industries have been identified as major contributors to marine litter due to high consumption rates of fast-moving consumer goods (FMCG) and convenience products wrapped in single-use plastic packaging. In many touristic regions of the global south, this is aggravated by the absence of effective policy frameworks, a lack of consumer awareness and insufficient capacities of local authorities to handle the increasing solid waste. The Maldives, Sri Lanka and India have undergone substantial growth in tourism clusters located along their shorelines of the Lakshadweep Sea. While this has increased the economic well-being of the local population, these developments have also come at a high price (PROMISE, 2022).

The PROMISE project responds to this by preventing leakage of wastes from land-based sources into the Lakshadweep Sea in line with a Sustainable Consumption and Production (SCP) approach. To achieve the desired impact, the activities target tourism clusters located along the Lakshadweep shorelines in the Maldives, Sri Lanka and India.

As part the project PROMISE, a series of policy roundtables were organised with an aim to prototype policy solution mechanisms for challenges in prevention of marine litter. Three policy roundtables were organised, each focusing on Defining challenges (1<sup>st</sup>), Solution prototyping (2<sup>nd</sup>), and public showcasing of policy mechanisms (3<sup>rd</sup>). Every roundtable will feed-in inputs to the next one to prototype potential policy solutions that can help national policy makers in furthering marine litter prevention policies.

The policy roundtables serve as platforms that bring together a diverse array of stakeholders, including policy makers, governmental bodies,

institutions, development organizations, associations, NGOs, and social enterprises. These stakeholders are actively engaged in waste management and marine litter prevention projects. The aim is to engage in discussions and collaborative efforts using a co-creation methodology, supported by a series of policy mechanism design tools.



The inaugural policy roundtable, known as the "Defining Challenges" session, was held in Sri Lanka on 21.01.2022. During this session, participants delved into the existing challenges and gaps within Sri Lanka's policies related to marine litter prevention. The identified key challenges included:

- Lack of Monitoring and Evaluation systems for Waste Management
- Absence of coordination between stakeholders
- Insufficient incentives, mechanisms, and Extended Producer Responsibility (EPR) principles
- Deficiencies in Capacity Building, skill development, and awareness initiatives.

Building upon the insights gleaned from the first roundtable, the second session, titled "Solution Prototyping," was conducted on 24.01.2023. Participants focused on benchmarking best practices and exploring their adaptation to the Sri Lankan context. They worked collaboratively to design and develop prototype policy mechanisms to address the challenges outlined in the initial roundtable. This session witnessed active participation from representatives of governmental institutions, development organizations, universities, and NGOs.

The outcome of this session resulted in the creation of four policy solutions:

- Overarching Policy Framework for Monitoring and Evaluation



## Group 1: Overarching policy framework for Monitoring and Evaluation Systems

<b>Focus:</b>	Fragmentation of policies for monitoring and evaluation
<b>Ecosystem Impact:</b>	Improved monitoring and evaluation framework, multiple stakeholder engagement, inter-agency approach
<b>Challenge:</b>	Improved decision-making process, increased efficiency in waste management

### Background

Sri Lanka's 2007 National Policy on Solid Waste Management is directed towards waste reduction, 3R implementation, capacity building, research and development, and regulation of sanitary landfills using best environmental practices and latest technologies. However, there was lack of focus on monitoring and evaluation systems and feedback mechanisms.

The policy statements related to Monitoring, Evaluation, Feedback and Reporting defined the updated National Policy on Waste Management (2020), are targeted towards, system performance, performance of Waste Management Institutions and Service providers, performance of Enforcement Authorities, and contribution of Citizens, Community organizations and representatives.<sup>1</sup>

The new National Action Plan on Plastic Waste Management (NAPPWM) 2021-2030, sets out

actions based on 3Rs principle and covers the entire lifecycle of plastic waste management from importing, processing, usage, collection and disposal. It has 16 defined goals as well as a preparation, implementation, monitoring and evaluation plan using the use the PDCA (Plan-Do-Check-Action) cycle.<sup>2</sup> The planning phase includes drafting of the Action Plan based on consultation meeting and stakeholder workshops. This is followed by implementation and monitoring of the Action plan through appropriate administrative processes. Then, the implementation progress is reviewed to identify areas of success and failure so that the Action Plan can be revised and updated accordingly. Several synergetic projects have also been identified to strengthen stakeholder coordination and facilitate the Ministry to execute the action plan.

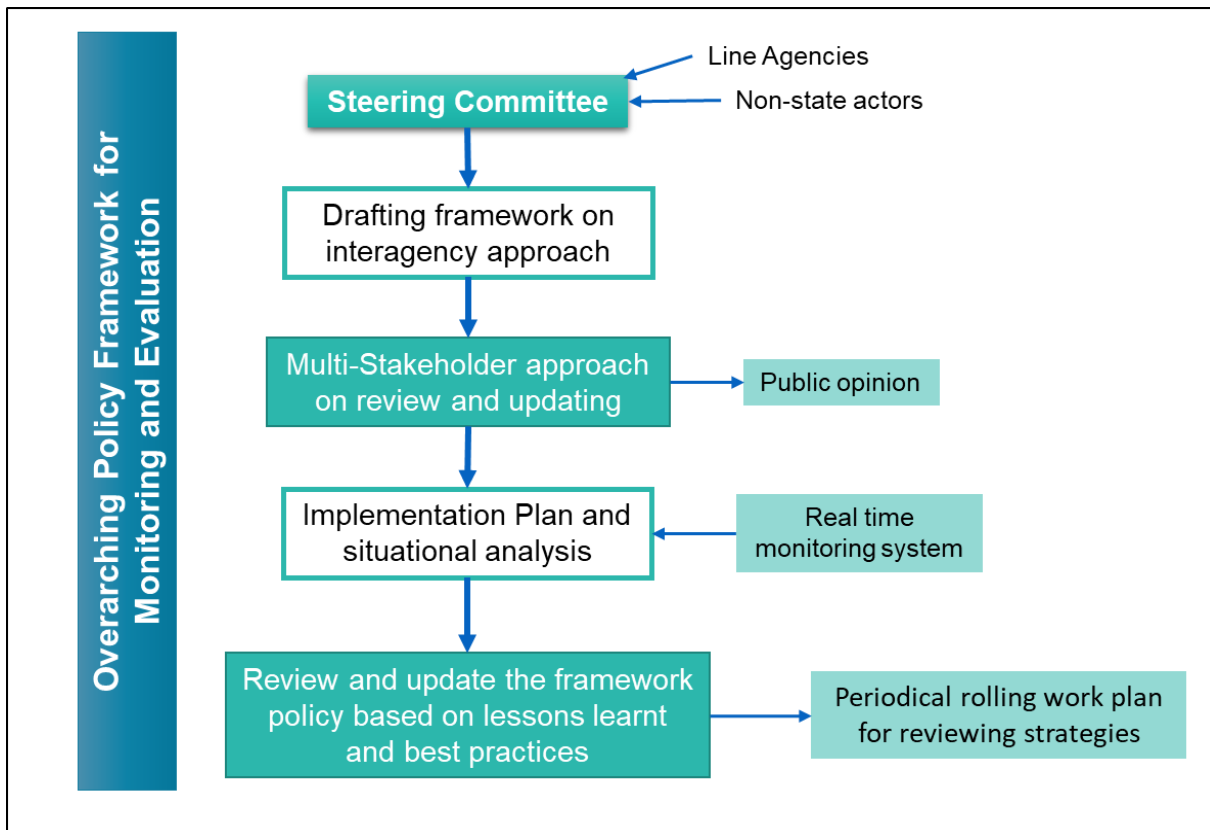
However, in spite of several existing policies and guidelines in place to protect marine environment and prevent plastic pollution, there seems to be a lack of implementation and enforcement of these frameworks. This is due to systematic gaps such as inadequate resources, lack of evaluation process and transparency in authorities, and absence of enforcement committees which become obstacles in policy implementation. Thus, it is key to have a dedicated monitoring and evaluation body that is separate from the state and has public interest.

### Solution overview

The first group proposed an inter-agency approach to establish a robust Monitoring and Evaluation (M&E) system for Waste Management policies. Central to their recommendation is the creation of an overarching policy framework for M&E, ensuring effective oversight and accountability. This framework begins with the formation of a steering committee comprising both non-state

<sup>1</sup> [http://www.env.gov.lk/web/images/pdf/policies/National\\_Policy\\_on\\_Waste\\_Management\\_English.pdf](http://www.env.gov.lk/web/images/pdf/policies/National_Policy_on_Waste_Management_English.pdf)

<sup>2</sup> [http://www.env.gov.lk/web/images/pdf/policies/National\\_Action\\_Plan\\_on\\_Waste\\_Management.pdf](http://www.env.gov.lk/web/images/pdf/policies/National_Action_Plan_on_Waste_Management.pdf)



actors and line agencies, fostering a collaborative governance structure.

policies in Sri Lanka. This framework emphasizes transparency, stakeholder engagement, and continuous improvement in waste management practices.

Upon establishment of this interagency platform, the group suggests drafting a comprehensive policy framework for the common M&E system. This framework would undergo thorough review processes involving multiple stakeholders, allowing for inputs from public opinion and expert insights. The committee is tasked with developing an implementation plan, encompassing situational analyses and the establishment of a real-time monitoring system for efficient data collection.

The proposed framework is designed to evolve over time, with periodic reviews and updates based on lessons learned and best practices. This iterative approach ensures adaptability and responsiveness to changing circumstances and emerging challenges. Through this systematic process, the group aims to establish a dynamic and effective M&E system that enhances the efficiency and impact of Waste Management

## Objective

- To formulate mechanism for proper M&E system and functions
- Inter-agency approach of implementation
- To enhance the capacity of stakeholders on M&E function
- To strengthen the interconnections among relevant organisation

## Key features

- Review and update Policy Strategies in a periodical rolling basis
- Real time monitoring systems and establishment of data base

- Right to the stakeholders to monitor and evaluate waste management system

- Identifying financial resources to establish a real-time monitoring system
- Identifying the legal authority of the steering committee of functions

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## Impact Potential

- Environmental:
  - Avoid burden on landfills and waste flowing in sea through efficient waste management monitoring system in place
  - Minimising coastal/ marine pollution and minimising the degradation of marine resources
- Social:
  - Upgrade living standard of the coastal community
  - Increased inclusiveness among stakeholders in decision making on waste management policies
- Economic:
  - Efficient resource allocation and planning leading to reduction for waste management costs
  - New jobs and entrepreneurship boost in waste management sector

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## Further Recommendations

Furthermore, during the discussions, participants emphasized the need for policy refinements and put forth additional recommendations. It was highlighted that prioritizing the already identified challenges is crucial, urging action towards addressing them promptly.

Additionally, participants stressed the importance of conducting a comprehensive stakeholder mapping exercise and a situational gap analysis, particularly through focused group discussions. This holistic approach provides a clearer understanding of the broader context, aiding in the development of more targeted and effective strategies.

In terms of ensuring long-term sustainability, participants proposed the establishment of a self-income mechanism. This self-sustaining model can be further bolstered through partnerships with donor agencies and private companies, leveraging their resources and expertise in financing mechanisms.

Lastly, participants underscored the necessity of establishing a dedicated committee with approval from the cabinet. This committee would oversee the entire framework and implementation mechanism, ensuring smooth and successful execution of the proposed policies. Approval from the cabinet would provide the necessary authority and support for the policy framework, enhancing its credibility and potential impact.

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## Foreseen Challenges

In the third and final policy roundtable, the participants further discussed the policy prototype and identified the following foreseen challenges:

- Identifying the gaps in legal & policy framework
- Lack of synergies among functioning institutions
- Infrastructural gaps in implementing plans and & achieving indicators
- Conflict of interest in functioning of the steering committee
- The availability of baseline data and setting up a mechanism for its collection

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## Implementation Steps

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- Step 1: Identifying the lead facilitator which is the *Ministry of Environment*
- Step 2: Stakeholder mapping and establishing of the committee
- Step 3: Getting the legal authority of the committee to function
- Step 4: Situational analysis and gap identification
- Step 5: Setting up mechanisms for data gathering
- Step 6: Implementation plan including time-bound indicators
- Step 7: Setting-up systems & monitoring in place
- Step 8: Periodical evaluation & reviewing in place

## Group 2: National Waste Management Authority

<b>Focus:</b>	Lack of clearly defined roles and responsibilities of stakeholders, and lack of accountability
<b>Ecosystem Impact:</b>	Institutional reform, Nodal agency formation for waste management
<b>Challenge:</b>	Better coordination between different stakeholders in waste management, improved regulatory framework and stricter implementation

### Background

There are several strategies and guidelines in Sri Lanka which recognize the participation of public sector, private sector and local communities e.g., the Coastal Action Plan (2000), the Biodiversity Legislation, the National Strategy for Clean Development Mechanism and the National Strategy for Solid Waste Management<sup>3</sup>. In spite of these policies which aim to promote higher stakeholder participation in governance, there currently seems to be a lack of coordination between different stakeholder groups of the waste management system in Sri Lanka.

The newly updated National Policy on Waste Management (2020) has policy statements related to Institutional mechanisms,

coordination and communication which highlight the following<sup>4</sup>:

- Coordination between national, provincial and local authority levels
- Involvement of public and private sectors
- Cooperation and coordination with communities and non-governmental organisations.
- And building sustainable partnerships

In the National Action Plan on Plastic Waste Management (2021-2030), goal 16 is to increased community participation of which key activities are (Ministry of Environment, 2021):

- 16.1: Increase community participation and networking to address the issue of plastic waste in each DS division
- 16.2: Strengthen media participation in plastic waste management

With plastic management a pressing global issue, in 2021, the Government of Sri Lanka developed the National Plastic Waste Management Action Plan (2021–2030) with assistance from UNEP (United Nations Environment Programme), IGES-CCET (IGES Centre Collaborating with UNEP on Environmental Technologies), and Japanese Ministry of Environment<sup>5</sup>. In line with this plan, the Centre for Plastic Management of Sri Lanka was also established under the purview of CEA (Central Environmental Authority), Ministry of Environment.

Most recently, on 29<sup>th</sup> March 2023, the Japan International Cooperation Agency (JICA) signed a Record of Discussions with the Sri Lankan Government for a technical cooperation project, Strengthening Plastic Management Capacity<sup>6</sup>. This project aims to develop action plans and pilot activities related to plastic-waste reduction and, develop human resources for the Centre for Plastic Management as well as, establish a database and a monitoring mechanism. Through such activities, this project will build a system for sustainable plastic waste

<sup>3</sup>[https://projectpromise.eu/sites/projectpromise.eu/files/documents/promise\\_policy\\_brief\\_input\\_paper\\_sri\\_lanka.pdf](https://projectpromise.eu/sites/projectpromise.eu/files/documents/promise_policy_brief_input_paper_sri_lanka.pdf)

<sup>4</sup>[http://www.env.gov.lk/web/images/pdf/policies/National\\_Policy\\_on\\_Waste\\_Management\\_English.pdf](http://www.env.gov.lk/web/images/pdf/policies/National_Policy_on_Waste_Management_English.pdf),

<sup>5</sup> <https://www.unep.org/ietc/resources/report/national-action-plan-plastic-waste-management-2021-2030>

<sup>6</sup>[https://www.jica.go.jp/Resource/english/news/press/2023/20230403\\_31.html](https://www.jica.go.jp/Resource/english/news/press/2023/20230403_31.html)

management, thereby contributing to the strengthening of Sri Lanka's plastic management capacity.

However, existing policies and guidelines for waste management lack not only clear mention of roles and responsibilities of different actors but also the proper guidelines for coordination between those actors. There seems to be lack alignment between central and provincial waste management coordination systems and centralized management system.

With no proper coordination, several activities may be duplicated while other important activities get delayed due to lack of initiative or lack of finances. Since several stakeholders have overlapping responsibilities, there needs to be a defined communication process which ensures that all players contribute equally and efficiently to the waste management system. This can be achieved by developing a Nationally coordinated process for waste management to ensure proper implementation.

coordination mechanism through the creation of a 'National Waste Management Authority'. This Authority is envisioned as a centralized body responsible for coordinating mandates, roles, and clearly defined responsibilities in the realm of waste management.

The proposed structure of the National Waste Management Authority includes a sectoral committee comprising 25 members representing governmental institutions, private organizations, and NGOs. This diverse representation ensures a holistic approach to policy formulation and implementation.

The primary function of the Authority is to develop sectoral policies aligned with the national waste management objectives. These policies will be accompanied by detailed sectoral implementation plans and robust monitoring mechanisms to track progress and ensure accountability.

The process begins with the drafting of the Authority's framework and institutionalization mechanism, which will be submitted to the central government for approval. Once approved by the cabinet, members of parliament will be engaged to facilitate the

**Solution Overview**



implementation of the framework at the national level.

The policy solution proposed by group 2 aims to establish a sustainable and effective

Furthermore, the Authority members will actively engage with international development agencies and relevant institutions to refine the monitoring and implementation processes. This collaborative approach seeks to leverage external expertise and best practices to enhance the effectiveness of waste management policies in Sri Lanka.

In essence, the establishment of the National Waste Management Authority aims to streamline coordination, enhance efficiency, and promote sustainable waste management practices across sectors. Through this centralized mechanism, Sri Lanka aims to achieve significant strides towards a cleaner and more environmentally conscious future.

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## Objective

- Formation of a nodal agency to oversee efficient implementation of waste management policies.
- National waste management coordination mechanism
- Propose consolidated funding mechanisms through waste management (revenue earned from licences, taxation, fines, fees, and sales of secondary raw materials.)

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## Key Features

- Include provincial governments & non-governmental actors in the authority
- Include Monitoring and evaluation mechanisms that are handled by third party organisations
- Conduct cost effectiveness and readiness assessments of policies before implementation (including human capital, and physical infrastructure)
- Total annual budget evaluation for the overall waste management policy implementations

- Looping in monetary benefits from waste management activities into annual budget contribution

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## Impact Potential

- Better coordination within different waste management stakeholders
- Creating strong regulatory framework and stricter enforcement
- Lowering the dependency on the general treasury for annual waste management budget
- Each local govt. authority would have a comprehensive business plan which could be achieved through encouraging public-private partnerships in waste management sector

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## Foreseen Challenges

The participants further discussed the policy prototype and identified the following foreseen challenges:

- The formulation process of the National Waste Management Act
- Transferring existing regulatory responsibilities
- Opposition from existing regulatory entities is anticipated
- Issues surrounding constitutional devolution

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## Further Recommendations

During the discussions on the national waste management bill, participants emphasized the importance of establishing a robust institutional structure for the National Waste Management Authority. This includes defining roles and responsibilities for key positions such as the Board of Directors, Chairmen, Director General,

Directors, Assistant Directors, and Waste Management Officers. Clarity in the organizational hierarchy is vital for effective decision-making and streamlined operations within the Authority.

In addition to the institutional setup, participants stressed the need for comprehensive rules and regulations governing the waste management sector. These regulations will serve as the guiding framework for waste management practices, ensuring uniformity, efficiency, and adherence to environmental standards. The formulation of such rules is imperative for the smooth functioning and compliance of all stakeholders involved.

Financial sustainability of the Authority was highlighted as a crucial aspect for its independence and effectiveness. To achieve this, the establishment of a Consolidated Fund was recommended. This fund will serve as a dedicated source of revenue for the Authority, supplemented by revenue generation mechanisms such as licensing fees, fines, taxation on waste-related activities, and sales. These measures will empower the Authority to carry out its mandate without external dependencies.

Furthermore, recognizing the need for accurate data and documentation, participants underscored the importance of replacing the provincial waste database with a comprehensive national database. This database will serve as an official repository of information on all private sector waste management companies, both operational and non-operational. Regular updates and maintenance of this list by the National Waste Management Authority will ensure transparency and facilitate effective decision-making in the waste management sector. Additionally, creating a conducive and well-regulated business environment for private sector waste management companies was highlighted as a key factor for encouraging competitive business ventures and fostering innovation in the sector. These measures collectively aim to strengthen the foundation of the proposed policy solution

and pave the way for effective waste management practices in Sri Lanka.

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## Implementation Steps

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- Step 1: Hold a multi-sectoral state holder constitution
- Step 2: Draft a National Waste Management Bill (NWMB)
- Step 3: Refer the NWMB to cabinet administration for central government approval
- Step 4: Upon clearance, send the draft bill to AGDSL for clearance and then to LDD for official finalization
- Step 5: Submit the draft bill for parliament approval by the subject Minister of Environment
- Step 6: Encourage a push from civil society so the draft bill is placed on the parliamentary order paper
- Step 7: Begin the enforcement process for the bill

## Group 3: Independent EPR Committee

<b>Focus:</b>	Lack of viable Producer Responsibility Organisation (PRO)
<b>Ecosystem Impact:</b>	Improving EPR implementation, transparency and accountability
<b>Challenge:</b>	Involvement of multiple stakeholders, robust policy implementation, improved EPR operations

### Background

In Sri Lanka, manufacturers and distributors are not responsible for the end life cycle of plastic packaging under the domestic legislation. Stakeholders have divergent views when it comes to the dialogue on Extended Producer Responsibility for plastic waste management in Sri Lanka, and there is absence of legal provisions to impose EPR. The private sector was initially displeased when the state-led EPR approach was presented.

However, in October 2018 the Ceylon Chamber of Commerce (CCC) together with Biodiversity Sri Lanka (BSL), launched a project to develop an Extended Producer Responsibility (EPR) mechanism for plastic waste management in Sri Lanka. With financial support from the United States Agency for International Development (USAID), CCC and BSL developed an EPR Roadmap in 2021, to provide a strategic plan for plastic waste management <sup>7,8</sup>.

<sup>7</sup> <https://www.chamber.lk/index.php/news/9-media-releases/1185-ceylon-chamber-and-ministry-of-environment-propose-collect-back-plastic-waste-management-model-for-the-private-sector>

<sup>8</sup> [https://pdf.usaid.gov/pdf\\_docs/PA00XV7B.pdf](https://pdf.usaid.gov/pdf_docs/PA00XV7B.pdf)

In this process, several sectoral stakeholder consultations targeting key industry sectors yielded some useful policy-level inputs and insights. Simultaneously, a review of global EPR practices from six countries helped to identify applicable EPR policy instruments for Sri Lanka. The implementation of the Mandatory Reporting and Collect-Back (MRCB) model was recommended under this EPR Roadmap.

Additionally, under the National Action Plan on Plastic Waste Management (NAPPWM) 2021-2030 one of the goals (goal 7) mainly focuses on “Introducing legal requirements to operationalize EPR and pilot implementation for selected products by 2022”<sup>9</sup>.

Besides the lack of mandatory regulations, another problem is that SUP (Single Use Plastic) and plastic packaging is still the cheapest option compared to more durable and sustainable alternatives mainly for FMCGs (Fast Moving Consumer Goods). In order to shift market demand and production lines away from plastic, the alternatives need to be subsidized and made cheaper.

The Government ministries play a key role in bringing in new EPR policy mandates. Whereas, provincial councils and municipalities are important in ensuring effective implementation of the policies. However, policy change is not enough to bring about drastic and rapid results. There also needs to be a shift in societal mindset away from high plastic usage and dependency. This is where entrepreneurs and R&D facilities become important to innovate and promote sustainable and cost-efficient alternatives to plastic.

### Solution Overview

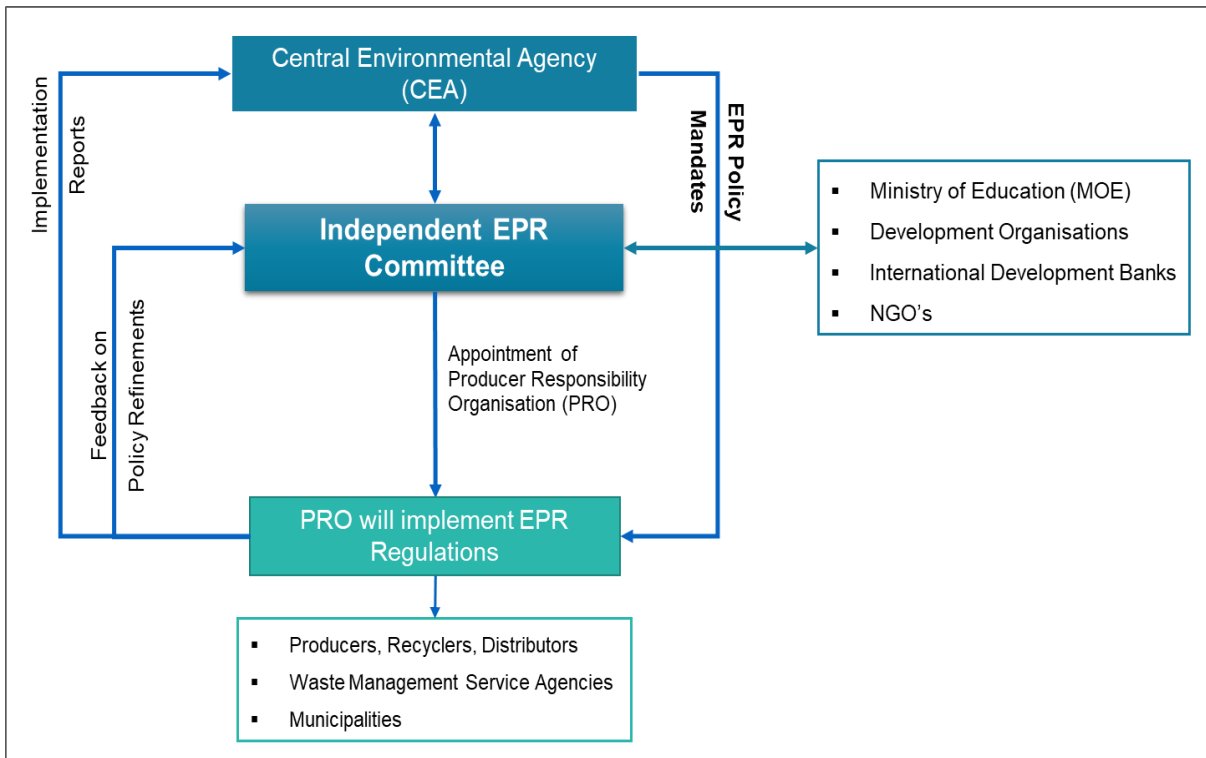
The policy solution proposed by Group 3 involves the establishment of an independent

<sup>9</sup> [http://www.env.gov.lk/web/images/pdf/policies/National\\_Action\\_Plan\\_on\\_Waste\\_Management.pdf](http://www.env.gov.lk/web/images/pdf/policies/National_Action_Plan_on_Waste_Management.pdf)

Extended Producer Responsibility (EPR) committee. This committee is designed to enhance accountability and efficiency in managing waste produced by various industries. The proposed committee will comprise members from diverse backgrounds, including representatives from the Ministry of

Environment, developmental organizations, international development banks, and NGOs. They will collaborate closely with the Central Environmental Agency (CEA) to ensure effective implementation of EPR regulations and policies.

Once appointed, the PRO will assume the responsibility of implementing the EPR regulations and policies mandated by the Central Environmental Agency. This includes overseeing the collection, recycling, and proper disposal of waste produced by the industries under the EPR scheme. The PRO will also be



Environment, developmental organizations, international development banks, and NGOs. They will collaborate closely with the Central Environmental Agency (CEA) to ensure effective implementation of EPR regulations and policies.

required to submit regular implementation reports to the CEA, providing updates on progress and compliance.

The first step outlined by the group is to initiate an open tender call for the appointment of a Producer Responsibility Organisation (PRO). This process invites third-party organizations to apply for hosting the PRO role. The Independent EPR committee will then evaluate the applications based on relevant credentials and the best bid submitted. The selection process aims to choose a PRO with the expertise and capacity to effectively manage EPR responsibilities.

Furthermore, the PRO will play a vital role in providing feedback to the EPR committee regarding policy refinements and improvements. This feedback loop ensures that the EPR system remains adaptive and responsive to changing environmental needs and industry dynamics. By establishing this independent EPR committee and appointing a capable PRO, Group 3 aims to create a robust system for managing producer responsibilities in waste management, contributing to a more sustainable and environmentally conscious approach in Sri Lanka.

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## Objective

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- Transparent and trustworthy committee to select PRO
- Provide expert advice on EPR policy updates
- Establish mandatory reporting process and EPR compliance by companies
- Conflict resolver between CEA and other members
- Create an independent body to control data.

- Maintaining the independence of the EPR committee
- Effective management of the EPR committee
- Data and submission & validation
- Lack of implementation on Waste Management
- Lack of financial resources to enforce independent EPR committee.

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## Key Features

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- An independent committee to appoint PRO
- Involving international development organisations and development banks interested in the EPR policy and implementation
- Data driven feedback loop to amend policies and regulations as required

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## Further Recommendations

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In addition to the proposed policy solution of establishing an independent Extended Producer Responsibility (EPR) committee, the participants further recommend the implementation of a mandatory polluter-pays financial mechanism. This mechanism will require industry players and private stakeholders to contribute financially towards the EPR activities, ensuring their active participation and accountability in waste management practices. The funds generated through this mechanism will not only support the operational activities of the committee but also incentivize responsible waste management practices among producers. By mandating this financial contribution, the committee can sustainably fund its initiatives, such as waste collection, recycling programs, and environmental awareness campaigns. Moreover, the polluter-pays principle aligns with international best practices in waste management, promoting a shift towards a circular economy model. This financial mechanism also encourages innovation and investment in sustainable waste management technologies, fostering a greener and cleaner environment for Sri Lanka's future. Through the collective efforts of industry stakeholders and the EPR committee, this recommendation aims to create a self-sustaining system that effectively addresses the challenges of waste management and environmental protection.

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## Impact Potential

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- Transparency and data security which builds trust amongst industry players
- Optimize waste supply chain and management
- Ensure cost-cutting in Waste Management
- Improve waste segregation and disposal
- Better EPR operations and smoother implementation process through PRO
- Reduced burden on Central Environmental Agency

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## Foreseen Challenges

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In the third policy roundtable, the participants further discussed the policy prototype and identified the following foreseen challenges:

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## Implementation Steps

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- Step 1: Gather consensus from all stakeholders
- Step 2: Identify relevant stakeholders & convene them to discuss process
- Step 3: Identify opportunities & challenges among parties
- Step 4: Putting forward the final draft for public comments
- Step 5: Amend the National Environmental Act
- Step 6: Make a legal provision to issue regulatory gazettes for developments on EPR law
- Step 7: Identify Resources needed to implement the law

## Group 4: Waste Management Curriculum

<b>Focus:</b>	Lack of knowledge and capacity in Waste Management
<b>Ecosystem Impact:</b>	Awareness raising on Waste Management, Knowledge dissemination
<b>Challenge:</b>	Creating socially and environmentally responsible citizens, reduction in waste generation

### Background

There is currently a systematic gap waste management educations and knowledge dissemination. In the past years, there hasn't been any major efforts in Sri Lanka towards capacity building or awareness rising for waste management solutions.

There seems to be lack of skill development and capacity building mechanism at provincial and municipality levels, as well as lack of awareness and knowledge amongst stakeholders. Moreover, there is lack of incentives for recycling and waste to value initiatives and lack of funding mechanisms to promote such activities.

However, in the National Action Plan on Plastic Waste Management (NAPPWM) 2021-2030 the Goal 12 directly talks about the education and training requirements to enhance knowledge and competency in plastic waste management of relevant stakeholder groups by 2030<sup>10</sup>. Which includes conducting Training of Trainers (ToTs) at provincial level, enhancing knowledge

and practices for plastics & plastic waste management in educational institutions and awareness raising programs amongst stakeholders. The curriculum for which will be developed by the Training Centre for Waste Management established by Western Province Waste Management authority in Karadiyana.

The National Policy on Waste Management (2020) also highlights knowledge management and capacity building by education and awareness raising and by skill development, training, and conducting research<sup>11</sup>. This includes incorporating life cycle issues into the educational curriculum system from pre -school level up to higher levels and technical education curriculum at university level covering environment, economic and social aspects. The policy also focuses on technology development, usage and transfer along with infrastructure development in the waste management system.

When it comes to awareness, academic and research institutions play an important role in educating students from an early age. Research is necessary to collect data to realization of the status of waste generation and update the society to adapt to control situations. This leads to change in overall societal behaviour and brings an increased sense of responsibility amongst consumers. Hence, schools and universities should be the primary focal point of waste-management education.

### Solution Overview

The policy solution put forth by Group 4 addresses the lack of awareness surrounding waste management through the development of a new school curriculum. This innovative approach aims to equip students with practical knowledge and hands-on experience in waste management practices, starting from the primary and secondary school levels.

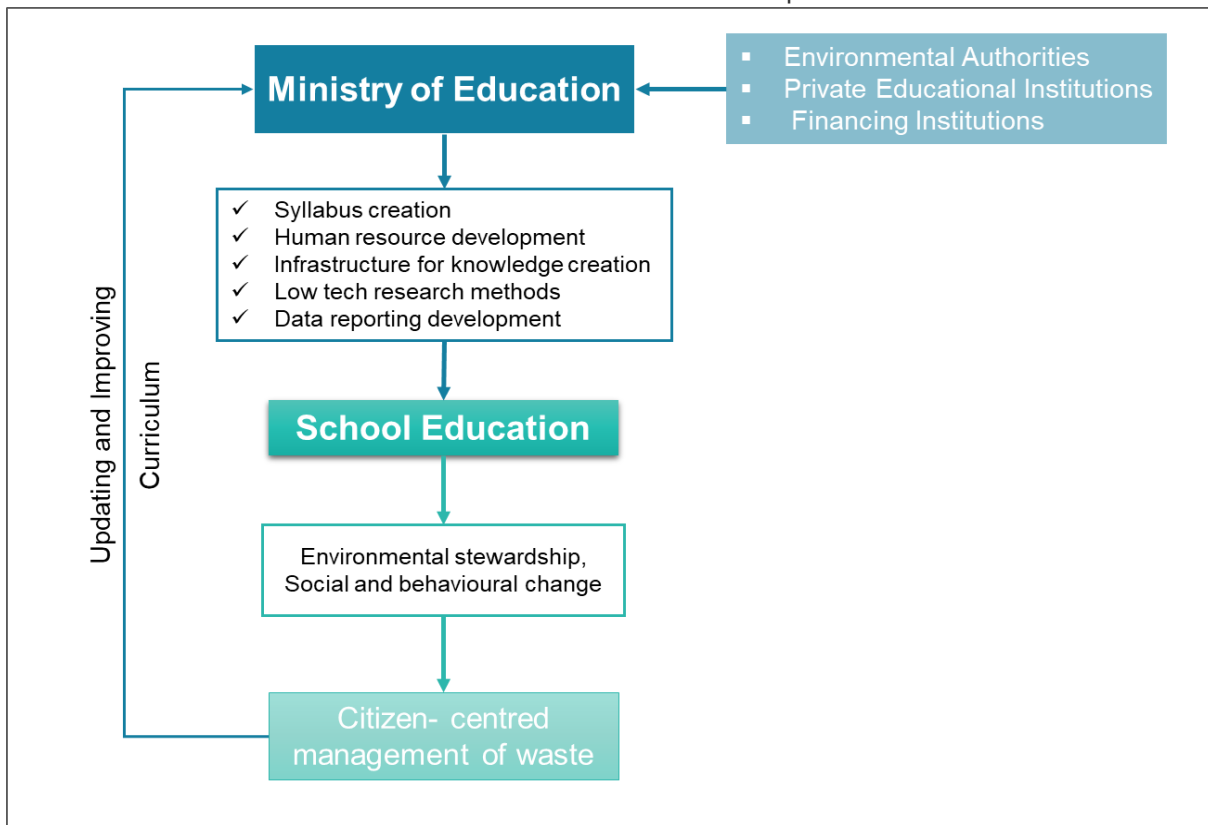
<sup>10</sup>[http://www.env.gov.lk/web/images/pdf/policies/National\\_Action\\_Plan\\_on\\_Waste\\_Management.pdf](http://www.env.gov.lk/web/images/pdf/policies/National_Action_Plan_on_Waste_Management.pdf)

<sup>11</sup>[http://www.env.gov.lk/web/images/pdf/policies/National\\_Policy\\_on\\_Waste\\_Management\\_English.pdf](http://www.env.gov.lk/web/images/pdf/policies/National_Policy_on_Waste_Management_English.pdf)

The proposed curriculum will be a collaborative effort involving environmental authorities, private educational institutions, financing institutions, and the Ministry of Education. Together, they will design a syllabus tailored to educate students on various aspects of waste management, including recycling, composting, and waste reduction strategies. Furthermore, the Ministry of Education will conduct teachers' training workshops to ensure effective delivery of the curriculum.

practices in their daily lives. This, in turn, will lead to broader environmental benefits and contribute to the overall well-being of society.

Furthermore, the flexibility of the curriculum allows for periodic updates based on new developments in waste management practices. Incorporating research data and adapting to changes in the waste management system ensures that students receive up-to-date and relevant education on environmental stewardship.



Additionally, the policy solution emphasizes the importance of building the necessary infrastructure for knowledge dissemination within schools. This includes establishing waste management facilities, recycling centers, and other resources to support hands-on learning experiences for students.

In conclusion, the proposed school curriculum represents a proactive and holistic approach to addressing the lack of awareness around waste management. Through collaboration among stakeholders and the integration of practical learning experiences, this policy solution aims to nurture a generation of environmentally conscious individuals capable of making positive contributions to Sri Lanka's environmental sustainability.

The implementation of this curriculum is expected to result in significant social and behavioral changes among students. By instilling a sense of environmental responsibility and awareness from a young age, it is anticipated that students will adopt sustainable



fostering a generation equipped with the knowledge and skills to champion environmental sustainability.

Step 9: Finalize the development curriculum

Step 10: Accredit the curriculum

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## Implementation Steps

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- Step 1: Conduct a feasibility study (include economic, social, and environmental factors)
- Step 2: Rank priorities with the help of leading agency
- Step 3: Conduct Pilot study
- Step 4: Consultation and draft proposal
- Step 5: Submitting proposal and seeking funds
- Step 6: Prepare directory of experts
- Step 7: Prepare curriculum with the help of local and overseas experts
- Step 8: Compatibility and practicality with the successful cases of the curriculum

## Recommendations

- **Integrated Approach to Monitoring and Evaluation:** Implement an integrated approach to Monitoring and Evaluation (M&E) by establishing an overarching policy framework. This framework should encompass standardized indicators, data collection methods, and reporting mechanisms to ensure uniformity across all waste management initiatives. Regular assessments and reviews should be conducted to track progress and identify areas for improvement.
- **Strengthening the National Waste Management Authority:** Enhance the functionality of the National Waste Management Authority by providing it with adequate resources, authority, and capacity-building programs. This includes expanding its scope to cover all aspects of waste management, from collection to disposal, and empowering it to enforce regulations effectively.
- **Empowering the Independent EPR Committee:** Provide the Independent Extended Producer Responsibility (EPR) Committee with clear mandates, regulatory powers, and financial resources to carry out its responsibilities effectively. Encourage partnerships with industry stakeholders, environmental organizations, and financial institutions to promote shared responsibility and accountability in waste management practices.
- **Incentivizing Industry Participation:** Develop a system of incentives and penalties to encourage active participation of industries in EPR schemes. This can include tax incentives for companies adopting sustainable waste management practices, as well as fines for non-compliance. Transparent and fair mechanisms should be established to ensure equity among stakeholders.
- **Curriculum Integration for Waste Management Education:** Integrate the developed Waste Management Curriculum into the national education system from primary to secondary levels. Conduct regular training programs for teachers on waste management principles and practices to ensure effective delivery of the curriculum. Encourage hands-on learning experiences and partnerships with local waste management facilities for practical knowledge.
- **Public Awareness and Participation:** Launch comprehensive public awareness campaigns on waste management, focusing on the importance of waste reduction, recycling, and responsible disposal. Engage communities through workshops, seminars, and community clean-up drives to foster a sense of ownership and responsibility towards waste management.
- **Legislative Reforms and Policy Alignment:** Review and amend existing waste management legislation to align with international best practices and emerging environmental challenges. Ensure consistency and coherence among policies related to waste management and marine litter prevention.
- **Research and Innovation Hub:** Establish a dedicated research and innovation hub for waste management, collaborating with universities, research institutions, and private sector entities. This hub will facilitate the development and implementation of innovative technologies, best practices, and sustainable solutions in waste management. Encourage knowledge sharing and capacity-building programs to foster a culture of continuous improvement in waste management policies and practices.

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