



Maldives

POLICY BRIEF (Input Paper): Prevention of Marine Litter in the Maldives

Dr. Abdulla Nazeer – The Maldives National University

Mr. Hamdhoon Hameed – Parlay Maldives

September 2021

1. Introduction

This document is produced as a part of the project ‘**Prevention of Marine Litter in the Lakshadweep Sea (PROMISE)**’. The project activities target tourism clusters located along the Lakshadweep shorelines in the Maldives, Sri Lanka and India. The project aims at prevention and leakage of wastes from land-based sources into the Lakshadweep Sea in line with Sustainable Consumption and Production (SCP) approach. This input paper outlines the preliminary findings about the current waste management related policy ecosystem specifically addressing marine litter in the Maldives and provides initial recommendations based on desk research. Following engagements with stakeholders such as local authorities managing waste, micro, small and medium enterprises (MSMEs) in the tourism sector, business associations, policy makers etc., this document will be updated incorporating the learnings from these engagements.

2. Background

The Maldives are a group of 1200 low lying islands in the middle of the Indian Ocean, stretching 800 km from north to south across the equator, and spanning a large Exclusive Economic Zone (EEZ) of 859,000 sq. km. Less than 1% of the EEZ is land-based. Besides the 3 islands comprising the capital, Male’ City, only 189 islands are inhabited, and 164 are tourist resorts while 128 are used for industrial, agricultural or other activities¹. The country’s total population estimated in 2019 is 533,941 people².

The coral islands provide the country with an extremely rich and diverse marine ecosystem. The Maldives rely totally on coastal and marine resources for subsistence and their economic development. Tourism and fisheries represent key economic sectors and together constitute up to 45% of the Gross

¹ <http://statisticsmaldives.gov.mv/nbs/wp-content/uploads/2020/10/Statistical-Pocketbook-2020.pdf>

² <http://statisticsmaldives.gov.mv/nbs/wp-content/uploads/2020/10/Statistical-Pocketbook-2020.pdf>

Project Implemented by:



Domestic Product, more than two-thirds of export earnings, and employment for some 18% of the domestic labour force³.

Although the reefs and lagoons of these islands were pristine less than 50 years ago, they are now increasingly becoming hotspots for marine litter. Across the country, several islands with population congestion have coastal garbage sites that spill and overflow into the sea.

A study report on the *State of the Environment*, published by the Ministry of Environment and Energy (2016) indicates that the Maldives are generating about 365 metric tonnes of solid waste per day⁴. Recent estimates suggest that solid waste is generated at a rate of 1.8 kg per person per day in the capital city Male', 0.8 kg per person per day on the other inhabited islands, and 3.5 kg per person per day on resort islands⁵. According to some reports, the amount of waste generated in Male' has increased by 155% over the past decade while the number of inhabitants has increased by 57.6% in the atolls over the same time period⁶.

Thilafushi, a separate landfill island on one of the nearby ring reefs off the west coast of Male', is the disposal site for all waste from the Greater Male' and nearby resorts. To date, the most common method of disposal is open burning in the Maldives⁷.

Islanders are dumping wet waste to the ocean while other waste is burnt. Most dumping is done by the transport boats, fishing vessels and safari boats. Under the regulations enforced in the hospitality industry, resorts can dump wet biodegradable waste into the ocean 5 km away from an island⁸.

Ocean plastic pollution is a big problem for the Maldives. According to UNICEF (2019), over 280,000 plastic bottles are used every day and discarded in Male' alone⁹. Maldives Customs data shows that over 97 metric tonnes of polythene tube roll for packing, more than 104 million plastic bags and almost 150 million biodegradable plastic bags were imported to the country in 2019¹⁰. It was estimated that over 143 million Polyethylene Terephthalate (PET) bottles were produced locally for water and soft drinks in 2019¹¹. A large amount of this plastic ends up in the ocean¹².

³ <https://planning.gov.mv/planning>

⁴ MEE (2016) State of the Environment, Male', Maldives

⁵ <https://www.worldbank.org/en/news/press-release/2017/06/23/maldives-improve-solid-waste-management>

⁶ Review Report on Water and Waste Accounts (2018). National Bureau of Statistics, Male', Maldives

⁷ MEE (2016) State of the Environment, Male', Maldives

⁸ <https://www.tourism.gov.mv/dms/document/2d56cd76d0564fa52c9365821bf4ed36.pdf>

⁹ <https://www.unicef.org/maldives/stories/ending-plastic-pollution-fenfulhi-launch-events-addu-city-and-fuvahmulah-island>

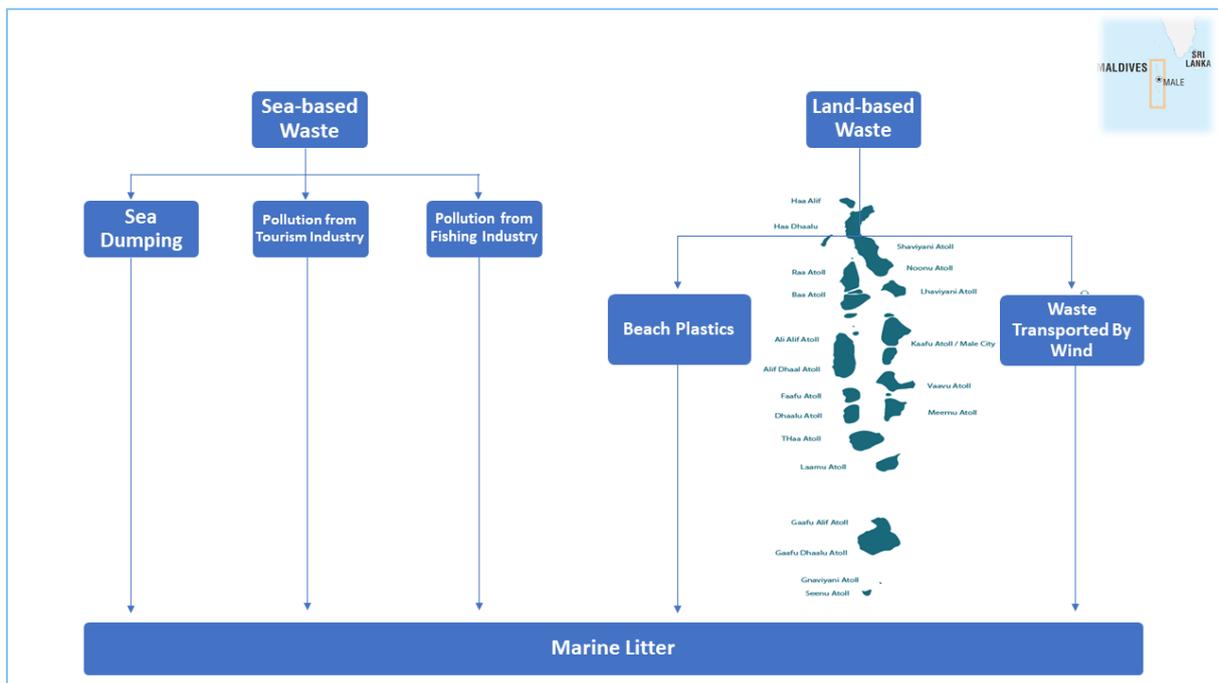
¹⁰ <https://www.customs.gov.mv/Statistics>

¹¹ Maldives Ocean Plastics Alliance (MOPA) (February, 2021)

¹² <https://www.unicef.org/maldives/stories/ending-plastic-pollution-fenfulhi-launch-events-addu-city-and-fuvahmulah-island>

In addition to PET or plastic bottles, the country also imports a significant volume of other plastics including plastic bags, food packaging, wrappers, pipes, and products used in beauty and hygiene. A recent report on the social economic impact assessment of the use of PET in the Maldives indicates that plastics makes up 12% of all waste produced annually in the Maldives¹³. The report further notes that the amount of plastic being imported to the Maldives had an annual increase of 17% between 2014 and 2018. Pathways of marine litter in the Maldives are presented in Figure 1.

Figure 1: Pathways of Marine Litter in the Maldives



(Source: developed as part of this policy brief)

3. Important Actors and Initiatives

3.1. Policy Framework

Development targets and priorities of the Maldives are embedded in its **Strategic Action Plan (SAP)**¹⁴. The SAP 2019-2023 serves as the guide to implement and monitor government policies, development

¹³ Social Economic Impact Assessment of the use of PET in the Maldives (2021) Maldives Ocean Plastics Alliance, Male', Maldives

¹⁴ <https://presidency.gov.mv/SAP/>

projects and priorities. One of the subsectors incorporated in the SAP under “Jazeera Dhiriulhun” (Island Lifestyle) is “waste as resource”, which is mandated for the **Ministry of Environment, Climate Change and Technology (MECCT)** to implement. Waste as a resource comes with four policies: (1) Promote waste as a valuable resource for income generation; (2) Improve chemical and hazardous waste management practices to ensure protection of people and the environment; (3) Reduce plastic pollution by phasing out single-use plastics; (4) Instil environmental values in the society and promote an environmentally friendly lifestyle.

In recognition of plastic pollution as an environmental issue and its consequences on public health and the tourism industry, an amendment was brought to the Maldives’ Export-Import Act (No. 31/79) in December 2020 to ban the import of all products declared as ‘single-use’ plastics¹⁵. As a result, the MECCT has formulated a **Single-use Plastic Phase-out Plan 2020-2023** with the aim of better waste management and minimize marine plastic pollution in the country¹⁶. Figure 2 highlights the type of plastics included in this phase-out plan. The Maldives have also drafted a new waste regulation bill to introduce the principle of Extended Producer Responsibility (EPR) for effective waste management in the country¹⁷. In addition, the establishment of Waste Management Corporation Limited (WAMCO) and assigning it the responsibility of waste collection, treatment, and disposal in all islands is a major step to curb the waste management issues in the country¹⁸.

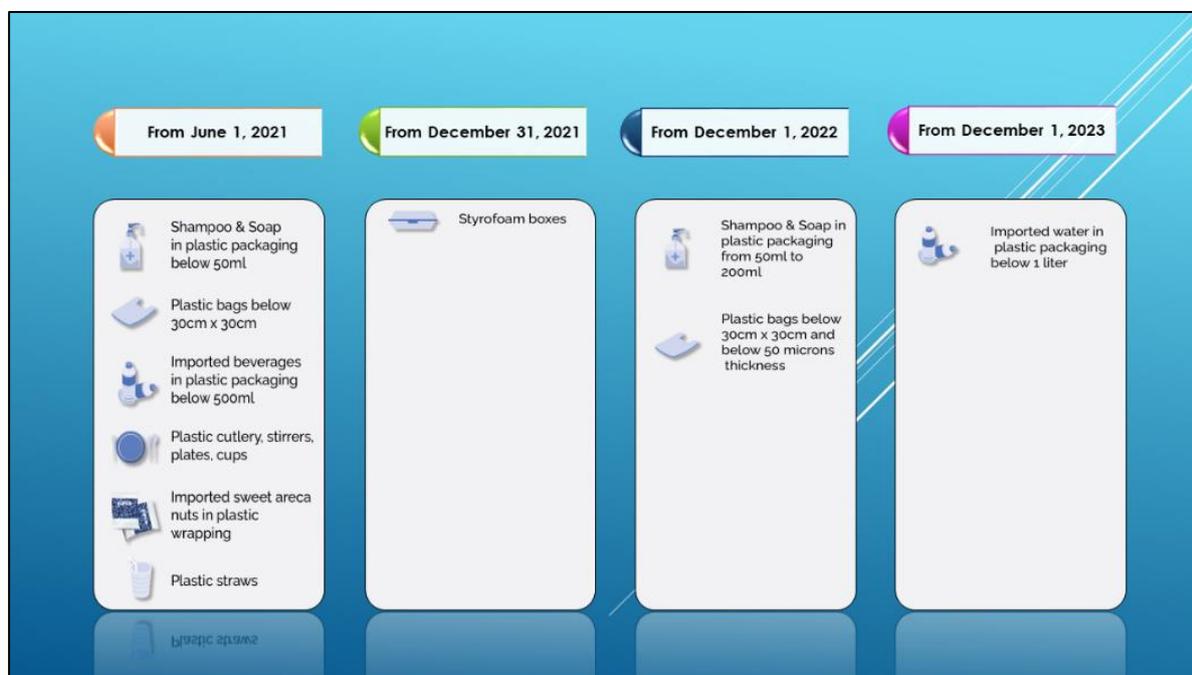
¹⁵ <https://presidency.gov.mv/Press/Article/24163>

¹⁶ <https://presidency.gov.mv/Press/Article/24727>

¹⁷ <https://lup.lub.lu.se/luur/download?func=downloadFile&recordId=8895457&fileId=8895458>

¹⁸ <https://lup.lub.lu.se/luur/download?func=downloadFile&recordId=8895457&fileId=8895458>

Figure 2: Type of Plastics included in the Government’s Phase-out Plan



(Source: developed as part of this policy brief)

There are several policy frameworks available in the Maldives to govern and manage the environment. The **Environment Protection and Preservation Act (EPPA 4/93)** is the main umbrella law for protection and preservation of the land and water resources, flora and fauna as well as the beaches, reefs, lagoons and all-natural habitats that are important for the sustainable development of the Maldives¹⁹. The **Maritime Zones of Maldives Act (Law No. 6/96)** makes a provision in respect of the internal waters, territorial sea and contiguous zone and the exclusive economic zone of the Maldives.

The **Maldives Tourism Act (Act No. 2/99)** provides details for the determination of zones and islands for the development of tourism in the Maldives. In addition, the **Act on Coral and Sand Mining (2000)** aims to protect the ecosystem of the island reefs which play a vital role in the economic and social well-being of the people. Section 5 of the **Regulation on the Protection and Conservation of the Environment in the Tourism Industry (2006)** details provisions for the management of solid waste in the tourism sector. Under this regulation, resorts are required to install incinerators to manage their waste. At the same time, an exception is given for resorts to dispose food waste to the sea. However, the plastics are prohibited from combustion to avoid air pollution. The **Maldives Climate Change Policy Framework (2015)** is a major policy document to help the Maldives deal with the numerous facets of

¹⁹ https://zh.unesco.org/sites/default/files/maldives_act_11_08_1998_engl_orof.pdf

the climate change issue. The **National Solid Waste Management Policy** (2015) gives waste management responsibilities to local authorities (Island and City Councils) and maps a plan for the establishment of regional waste management centres that would have treatment and disposal facilities for the waste collected by the island waste management centres²⁰.

The **National Action Plan on Air Pollutants** (2019) describes all types of air pollutions in detail, including the emission levels of different pollutants in the Maldives and their likely progression in the future. The **Fisheries Act of the Maldives** (ACT NO. 14/2019) regulates the sustainable management of fisheries and marine resources and their ecosystems in the maritime zones of the Maldives²¹. The **Utility Regulatory Authority Act** (26/2020) was ratified in 2020 to regulate and oversee the proper management of public utility services including the waste management in the country.

The Maldives also ratified a number of regulations relating to the environment including the **Environmental Impact Assessment Regulation** (EIA), the **Waste Incineration Guidelines** 2016, and the **Waste Management Regulation** (2013/R-58). The key elements of the waste management regulation are to ensure safe disposal and transfer of solid waste and encourage recycling and reduction in waste generated; develop guidelines on waste management and disposal and advocate enforcing these guidelines through inter-sectoral collaboration; and to ensure safe disposal of chemical, industrial and hazardous waste²². Currently, with the technical assistance from the World Bank, the MECCT, is working on a project to formulate a **National Waste & Resource Management Policy and Strategy** under the Maldives Clean Environment Project 2017.

In addition, the Maldives are a signatory of some international and regional conventions with regard to waste and pollution that include the **Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal** and the **Male' Declaration on Control and Prevention of Air Pollution and its Likely Transboundary Effect for South Asia**²³.

The government has been intensively changing programmes and development towards a blue economy. The recent policy directives to change from fuel-based energy to renewable energy are already in action and are moving to achieve the ambitious goal of Net Zero emissions by 2030 and to create a blue economy to sustain the country's economy and hopeful to repair the damaged marine environment²⁴.

²⁰ <https://www.environment.gov.mv/v2/en/download/4584>

²¹ <https://www.gov.mv/en/guidance-and-regulations/fisheries-act-of-the-maldives>

²² <https://www.environment.gov.mv/v2/en/download/4584>

²³ <https://www.environment.gov.mv/v2/wp-content/files/publications/20170202-pub-soe-2016.pdf>

²⁴ <https://presidency.gov.mv/Press/Article/24135>

3.2. Finance Mechanisms

Waste management has been a growing concern for the Maldives due to the absence of an efficient waste collection and the technical infrastructure to recycle²⁵. The Maldivian government has indicated a strong willingness to reallocate its waste management budget provision, which has substantially increased in recent years²⁶.

The main form of financing for waste management in the Maldives comes from the government budget as well as household and resort retribution fees. The government also seeks financial assistance from donor agencies where revenue inflows are not sufficient to establish a critical infrastructure for waste management. As such, the government of the Maldives has recently secured \$165 million from various multilateral donors including the Asian Development Bank to finance the Greater Male' Environmental Improvement and Waste Management Project, which includes a 10-13% government contribution²⁷. The World Bank has also approved \$17.5 million financing for the Maldives Clean Environment Project to help improve waste management in selected areas in the Maldives²⁸. Likewise, the Global Environment Facility's small grants loan resulted in the development of waste segregation infrastructure on some outer islands. In addition, the Green Climate Fund has also provided \$23.6 million for two environment projects in the Maldives²⁹.

The tax regime is another financial instrument that the government has introduced to tackle the waste management issues in the country. In 2012, the government imposed a 400% import duty on plastic bags and evaluated biodegradable plastic bags with a zero-duty rating³⁰. This has resulted in a 76% reduction in the import of non-biodegradable plastic bags from 2012 to 2017 according to the Maldives Customs import data³¹.

A Green Tax was introduced in 2015 to encourage people to not harm the environment. This tax is payable by tourists at a rate of \$6 per day³². Revenues from the Green Tax for 2017 were MVR 696.2 million (\$45 million)³³.

²⁵ <https://lup.lub.lu.se/student-papers/search/publication/8895457>

²⁶ <https://www.finance.gov.mv/public/attachments/XAjcmw9zzdHjuiwRVcK48BxOL4mOjWWpTcInwyk.pdf>

²⁷ <https://psmnews.mv/en/34102>

²⁸ <https://www.worldbank.org/en/news/press-release/2017/06/23/maldives-improve-solid-waste-management>

²⁹ <https://www.greenclimate.fund/countries/maldives>

³⁰ <https://www.customs.gov.mv/d/Export%20Import%20Actcompiled%20upto%2018th%20amendment.pdf>

³¹ <https://www.customs.gov.mv/>

³² <https://www.mvlaw.gov.mv/pdf/gavaid/MIRA/R181-2015.pdf>

³³ <https://www.finance.gov.mv/public/attachments/A3x787DjtC0SCu0HBVZfuxPgs2OcXghirOewVz7U.pdf>

Household retribution fees are collected by the WAMCO who is mandated to manage the country’s waste in an environmentally, socially, and economically responsible and collaborative manner³⁴. Established in 2016, the WAMCO provides door-to-door collection services for a fixed monthly fee for solid waste management in Male’ City, Hulhumale’, Addu City and Fuvahmulah City. It also receives waste collection fees from tourist resorts and other industries. The WAMCO generated a gross profit of over MVR 15 million (\$1 million) at the end of the second quarter of 2019³⁵.

3.3. Stakeholders and Initiatives

As per the Environmental Protection and Preservation Act of the Maldives (Act No: 4/93), formulating all policies for the environmental protection, preservation, making regulations and enforcement of these regulations, shall be carried out by the **Ministry of Environment and Climate Change (MEE)**³⁶. The **Waste Management and Pollution Control Department** of the MEE is mandated to ensure safe waste disposal and implement pollution control projects on all inhabited islands³⁷. The **Environmental Protection Agency (EPA)** as a regulator ensures that waste management and pollution control measures are being implemented according to the national waste management policies and regulations³⁸.

The **Ministry of Tourism (MoT)** instituted a mandatory guideline for management of waste in tourist resorts in 2006. The **Ministry of Transport and Civil Aviation** issues special permissions for the transboundary movement of any wastes that are harmful to human health and the environment which the Maldives does not allow to dispose of anywhere within the territory of the country³⁹.

The other major stakeholder is the **WAMCO** which is mandated to manage the country’s waste in an environmentally, socially, and economically responsible and collaborative manner.

Similarly, **Island and City Councils** are also mandated to provide adequate waste management services under the Decentralization Act (07/2010). The Waste Management Regulations of island councils provide for basic methods of waste management.

International donor agencies such as the **Asian Development Bank**, the **World Bank** and the **UNDP** have been active partners for the development of waste management facilities across the Maldives. The Maldives are also a member of the **Commonwealth Clean Ocean Alliance**, which is an action group

³⁴ <https://wamco.com.mv/About-us>

³⁵ <https://www.finance.gov.mv/public/attachments/XAjcmw9zzdHjuiwRVcK48BxOL4m0jWWpTcJnwyk.pdf>

³⁶ <https://www.environment.gov.mv/v2/?s=mandate>

³⁷ <https://www.environment.gov.mv/v2/en/department/177>

³⁸ <http://www.epa.gov.mv/regulations>

³⁹ <https://transport.gov.mv/>

committed to eliminate all avoidable single-use plastic waste, reduce single-use plastic bags and ban the sale and manufacture of microbeads in rinse-off cosmetic and personal care products.

The Government of the Maldives recently signed two major commitments under the blue economy initiative - the partnerships with the **Blue Prosperity Coalition**, and with **Parley for the Oceans**⁴⁰. The Blue Prosperity Coalition aims to understand the ocean and to build up capacity to protect it. The **Future Island Nation program** is to implement the Parley AIR Strategy as a workable solution towards a circular economy that will create the blueprint for other small island nations⁴¹.

4. Problem Analysis

Although several policies and regulations have been endorsed and formalised, waste management in the Maldives is still unsystematic and unregulated. It has been a major concern for many island communities over the past three decades due to the limited land space and the fragile ecosystem of the country. The volume and type of wastes has increased even beyond the capacity of daily burning in several islands and is accumulated in open mounds. These sites however fill up quickly and there are no arrangements made to transfer the accumulated plastics and other non-compostable or burnable wastes. A large amount of the unmanaged waste becomes marine litter, which already has a visible impact on island shorelines, marine environment and in the food chain⁴².

Being a small island state with very limited resources and small population, the Maldives face unique and significant challenges in addressing the adverse impacts of global climate change⁴³. They are becoming more susceptible to weather changes, with more frequent and stronger winds and wave surges. Beach erosion is taking place faster and in areas that did not impact earlier. Several islands face the added problem of their coastal waste areas becoming exposed and getting washed out into the ocean.

Under the tourism regulation, all resorts must have a waste area and an incinerator. But this regulation allows the resorts to dump wet biodegradable waste into the ocean 5 km away from the island. As waste volumes increase, the segregated waste from kitchens becomes mixed. A lot of non-biodegradable waste such as cling wraps, packaging and bottles ends up in the ocean. Resorts also bring their non-biodegradable wastes such as cans and plastics to Thilafushi, where the facility currently burns all wastes

⁴⁰ <https://presidency.gov.mv/Press/Article/22260>

⁴¹ <https://today.mv/3418/>

⁴² Parley Maldives (2020)

⁴³ <https://www.environment.gov.mv/v2/wp-content/files/publications/20200206-pub-maldives-first-biennial-update-report.pdf>

that are brought in. Such a regulation does not exist for guesthouses, liveaboards and transport vessels which contribute large parts of the marine litter in the country⁴⁴.

Almost all islands are dependent on bottled water for residential and industrial use due to the absence of running water in many parts of the Maldives. With lifestyle changes and more construction in the islands leading to groundwater depletion, as well as pollution and other issues making rainwater undrinkable, there was no turning back from the explosion of single-use plastic bottles⁴⁵. The rapid development of regional airports and transport networks ushered in a lot of new waste to the island waste streams across the atolls. Imported food wrapped and packed in tins, plastic bottles and containers became a large component of island waste. Conveniences such as disposable nappies, PET bottles and fast fashion as well as a throw away culture became the norm.

Coastal waste site overflow from inhabited islands is a major contributor to marine litter⁴⁶. Across the country, several islands with population congestion have coastal garbage sites that spill and overflow into the sea. The continued practice of waste disposal to the beach/sea in several islands, and dumping on land and sea, as well as coastal wetlands and mangroves are other sources of marine litter traced to inhabited islands. PET waste, which is mixed with general waste due to the absence of efficient collection, waste segregation systems and technical infrastructure to recycle, creates environmental problems⁴⁷.

Unmanaged PET waste in the Maldives and its subsequent impact on coastal and marine ecosystems has greatly affected the country's tourism industry, which depends on the pristine marine life and natural beauty of the islands⁴⁸.

In recent years, there has been a growing environmental and public health concern in the Maldives about the potential effects of PET waste in small island communities because of the types and quantities of toxic chemicals and their potential for leaching into the coastal areas.

A research conducted by the marine scientists from Flinders University in 2020 has recorded the levels of plastic pollution in sand across 22 sites of the coast of the Naifaru (one of the most populous islands in the country) and concluded that "the concentration of micro plastics found on Naifaru in the Maldives (55-1127.5 microplastics/kg) was greater than those previously found on a highly populated site at Tamil

⁴⁴ <https://www.environment.gov.mv/v2/wp-content/files/publications/20200206-pub-maldives-first-biennial-update-report.pdf>

⁴⁵ Parley Maldives (2020)

⁴⁶ Parley Maldives (2020)

⁴⁷ <https://lup.lub.lu.se/luur/download?func=downloadFile&recordId=8895457&fileId=8895458>

⁴⁸ <https://lup.lub.lu.se/luur/download?func=downloadFile&recordId=8895457&fileId=8895458>

Nadu, India (3-611 microplastics/kg), and had a similar concentration like that found on inhabited and uninhabited islands elsewhere in the Maldives (197-822 particles/kg)"⁴⁹.

The high level of microplastic pollution in waters around the Maldives could severely impact marine life in shallow reefs and threaten the livelihoods of island communities. It is assumed that these harmful microplastics were likely both transported by ocean currents from neighbouring countries like India as well as from Maldivian land reclamation policies as well as poor sewerage and wastewater systems adding to an unsustainable environmental situation⁵⁰.

The fragile nature of islands, limited availability of resources, a lack of technical infrastructure, and vulnerability to natural and external economic shocks are real challenges to manage PET waste in the Maldives⁵¹. In addition, limited availability and access to low cost financial resources is a key barrier for the implementation of modern technology-based waste management systems⁵². The assignment of roles and responsibilities have not been clear or effective, and enforcement has been weak, with little or no practical monitoring⁵³.

5. Recommendations

The following recommendations are being put forward for policy makers for intervention in order to improve the implementation and compliance of marine litter policies:

- Perform a **situation assessment** of policies, regulations and projects that are legally in effect, preferably with a focus on marine litter. A practical interim step forward would be to develop a minimal baseline data collection model for implementation through island councils or local NGOs.
- **Community stakeholder consultations and partnerships** would help to identify the current situation and challenges faced by the community and also the seepage points where the island waste joins marine litter. The findings can be incorporated into policy reviews.
- **Private sector engagement in PET waste management** is crucial as the introduction of schemes such as production and import taxation, user taxation or EPR is urgently needed. The Waste Management and Pollution Control Department of the MEE can lead the discussions with the stakeholders to implement an EPR scheme for the Maldives.
- **Collect disaggregated import data on non-degradable products and packaging.** Almost all the non-biodegradable waste in the Maldives comes from imports, and challenges and constraints in measuring this waste are a major obstacle in planning and policy formulation.

⁴⁹ <https://news.flinders.edu.au/blog/2020/08/13/maldives-records-highest-micro-plastic-pollution>

⁵⁰ <https://www.sciencedaily.com/releases/2020/08/200805124100.htm>

⁵¹ <https://lup.lub.lu.se/luur/download?func=downloadFile&recordId=8895457&fileId=8895458>

⁵² <https://www.environment.gov.mv/v2/wp-content/files/publications/20200206-pub-maldives-first-biennial-update-report.pdf>

⁵³ Parley Maldives (2020)

- The Government should make use of financial policy instruments to create a sustainable model for waste collection in the country in order to increase **funding and financial incentives** for marine litter prevention initiatives.
- Develop and promote simple, standard, and **practical monitoring mechanisms** at island level, for use by the local administrations to assess, plan and monitor their waste management systems in operation.
- **Conduct regular awareness programmes for island communities and local councils** and **facilitate practical measures** for them to reduce, manage and dispose of litter and potential marine litter.
- Enhanced **waste management infrastructure** on the islands is crucial in order to implement the policies effectively to manage the increasing volume of locally created marine litter.
- A **decentralised waste management system** needs to be integrated at the national level to ensure that the recycling of various plastic and waste types are done according to the policies and regulations in Maldives.
- There is an urgent need to **review policies and regulations, especially in the tourism industry**, in order to minimise dumping of waste to the ocean.

Disclaimer: This paper has been produced with the financial support of the European Union in the framework of the project 'Prevention of Marine Litter in the Lakshadweep Sea (PROMISE)'. Its contents are the sole responsibility of the authors and do not necessarily reflect the views of the European Union.

Publications and Bibliography

- Flinders University (2020) Maldives record for microplastics pollution. Accessed on 20 August 2021. <https://news.flinders.edu.au/blog/2020/08/13/maldives-records-highest-micro-plastic-pollution/>
- Graham L (2014): Thilafushi - An island of trash in the Maldives. Accessed 20 November 2018. <https://asiancorrespondent.com/2014/10/thilafushi-an-island-of-trash-in-the-maldives/#88prgHZrBzFqSof.97>
- IGES, (2019). A Regional Waste Management Strategy and Action Plan for Zone 6 in Maldives. Ministry of Environment, Maldives, January 2019, Accessed 25 August 2021. <https://www.ccet.jp/sites/default/files/2019-04/IGES%20final%207th%20march%202019.pdf>
- Jeftic, L., Sheavly, S. B., Adler, E., & Meith, N. (2009). Marine litter: a global challenge. Nairobi, Kenya: Regional Seas, United Nations Environment Programme. Accessed on 26 August 2021, https://wedocs.unep.org/bitstream/handle/20.500.11822/7787/-Marine%20Litter_%20A%20Global%20Challenge%20%282009%29-2009845.pdf?sequence=3&isAllowed=y
- Law No 4/93. Protection and Preservation Act of Maldives. Accessed on 13 August 2021. https://zh.unesco.org/sites/default/files/maldives_act_11_08_1998_engl_orof.pdf
- MEE (2019): The First Biennial Update Report of the Maldives to the United Nations Framework. Accessed 25 August 2021. <http://www.environment.gov.mv/v2/wp-content/files/publications/20170202-pub-soe-2016.pdf>
- MEE (2016): State of the Environment 2016, Maldives. Accessed 9 September 2021. <https://www.environment.gov.mv/v2/wp-content/files/publications/20200206-pub-maldives-first-biennial-update-report.pdf>
- Ministry of Tourism (2015): Assessment of Solid Waste Management Practices and its Vulnerability to Climate Risks in Maldives - Increasing Climate Change Resilience of Maldives through Adaptation in the Tourism Sector, Maldives. Accessed 25 August 2021. https://archive.tourism.gov.mv/downloads/tap/2012/Assessment_of_solid_waste_management_practices_and_its_vulnerability_to_climate_risks_in_maldives_tourism_sector.pdf
- Nashfa, H. (2016). Implementing a Deposit Refund System for P.E.T bottles in the Maldives. IIIIEE Theses 2016:42. Accessed on 25 August 2021. <https://lup.lub.lu.se/luur/download?func=downloadFile&recordId=8895457&fileId=8895458>
- Maldives Custom Service (2015): Quality and Value of Recycle Materials, Statistics 2015. Accessed 19 August 2021. <https://www.customs.gov.mv/Statistics>

Maldives Ocean Plastics Alliance (MOPA) (February, 2021). Socio-Economic Impact Assessment of the use of PET in the Maldives. Male’.

National Bureau of Statistics In collaboration with Ministry of Tourism Republic of Maldives (2019). Employment in Tourism Sector 2019. Accessed on 14 September 2021, <http://statisticsmaldives.gov.mv/nbs/wp-content/uploads/2020/06/Resort-Employee-Survey-2019-1.pdf>

Ministry of Tourism (2020) World Tourism Day 2020 (Supplement), Accessed on 14 September 2021. <https://www.tourism.gov.mv/dms/document/4069357c1090ff7097cb6cbc31e185cb.pdf>

Parley Maldives (2020). Background Paper on Plastic Waste and Marine Litter in Maldives (Draft Unpublished. Maldives’, Male’, Maldives.

Review Report on Water and Waste Accounts (2018). National Bureau of Statistics, Male’, Maldives.

The President’s Office, (22 December, 2020). President Ratifies 18th Amendment to Export-Import Act. Accessed on 15 August 2021. <https://presidency.gov.mv/Press/Article/24163>

The President’s Office, (30 December, 2020). President declares list of Single-use Plastics prohibited to import from June 1, 2021. Accessed on 15 August 2021. <https://presidency.gov.mv/Press/Article/24211>

The President’s Office, (1 June, 2021). President decree's amendments to list of banned single-use plastics. Accessed on 1 September 2021. <https://presidency.gov.mv/Press/Article/24727>

The United Nations Conference on Environment and Development (UNCED) (18 – 20 March 2013) Country Analysis Paper (Draft) Maldives, 4th Regional 3R Forum in Asia, Hanoi, Vietnam. Accessed on 10 September 2021. https://www.uncrd.or.jp/content/documents/Country%20Analysis%20Paper_Maldives.pdf

The World Bank (2017): Maldives to Improve Solid Waste Management with World Bank Support. Accessed 25 August 2021. <https://www.worldbank.org/en/news/press-release/2017/06/23/maldives-improve-solid-waste-management>

The World Bank (2020). GDP per capita (current US\$) - South Asia. Accessed 9 September 2021. <https://data.worldbank.org/indicator/NY.GDP.PCAP.CD?locations=8S>

UNICEF (2019) Ending plastic pollution: the FenFulhi Launch Events in Addu City and Fuvahmulah Island, Male’, Maldives.