

Plastic Pollution Policy Country Profile: Maldives

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Key Takeaways*

- Maldives is a small island developing states (SIDS) with over 1,000 islands with unique characteristics; some are predominantly resort islands, some are sparsely inhabited, some are urban settlements with higher population density, and some are uninhabited. As a result, different islands have different plastic waste trends and waste management needs.
- Much of Maldives' plastic waste is exported as the country lacks the infrastructural capacity to manage its waste.
- Plastic pollution is found even on remote islands.
- Maldives has begun to ban and phase out many single-use plastics, beginning with bags, using a combination of regulatory (e.g., ban), economic (e.g., deposit return scheme), and outreach instruments.
- While the import tax on nonbiodegradable plastic bags has resulted in a 76% reduction of plastic bag imports, a simultaneous increase in the importation of biodegradable bags has been observed.

* These are based on a review of literature published and policies enacted before December 2021



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INTRODUCTION

This document outlines: 1) the nature of the plastic pollution problem in Maldives, 2) available information about the national, subnational, and to a smaller extent, international policy landscape guiding government approaches to the plastic pollution problem in Maldives, and 3) what, if any, information exists about the effectiveness of these policy approaches. This document is written using a basic literature review process and with support from the [Plastics Policy Inventory](#), as outlined in the Appendix (below), and is not exhaustive. It contains the most up-to-date information at time of publication, but this information may eventually be less relevant as the policy landscape continues to evolve. The authors were able to get expert review for this case study, to ensure the information gathered aligns closely with what experts and practitioners are observing and experiencing on the ground. If conducting research on the plastic pollution crisis in Maldives, we recommend you use this document as one of many resources available to better understand the problem and its solutions.

PLASTIC POLLUTION IN MALDIVES

Maldives is a Small-Island Developing State (SIDS) made up of roughly 1,190 islands spread over 860 km in the Indian Ocean (Fallati et al. 2019). Of the Maldives territory, 98% is ocean, and the remaining 2% are islands—presenting a unique solid waste management challenge. Like many other SIDS, a relatively recent rise in population growth, tourism, and demand for imported goods has resulted in an increase of waste. Plastic waste comprises 12% of all waste in the Maldives and threatens marine ecosystems, the tourism industry, and public health (Nashfa 2016).

Broadly speaking, there are four categories of islands in the Maldives. These are: 1) islands inhabited by local populations; 2) islands with relatively dense urban settlements; 3) uninhabited islands; and 4) resort islands (Malatesta et al. 2015). Because of the diversity of population density and industry across these four categories of islands, plastic pollution and waste management needs challenges vary significantly within the Maldives.

Table 1. Solid waste management systems and practices related to four categories of islands (Malatesta et al. 2015)

| | <i>Local Systems</i> | | | |
|--|--------------------------|--------------------------|----------------------------|----------------|
| | Inhabited Islands | Urban Settlements | Uninhabited Islands | Resorts |
| <i>Solid Waste Management Systems and Practices</i> | | | | |
| Dumpsite and open air burning | Majority | No | Yes | No |
| Onsite incinerator | Few cases | Planned | No | Yes |
| Waste treatment | Few cases | Few cases | No | Yes |
| Waste reuse or recycle | Majority | Few cases | No | Yes |
| Shipping to Central or Regional Sites | Very few cases | Yes | Yes | Yes |
| Organic fraction dumped in the sea | Majority | Yes | Yes | Yes |

For a number of reasons, including limited freshwater sources and hesitancy towards treated water, PET bottles of drinking water are shipped to inhabited islands regularly. One study, that looked at Magoodhoo, an island within the Faafu Atoll with a population of nearly 800, found that over 6,000 1.5 liter PET bottles are brought from the capital Malé to the island monthly, totaling nearly 75,000 bottles annually. The import of these bottles also contributes to carbon emissions from shipping, and costs the average household nearly \$200 USD per year.

Bottled water demand on Magoodhoo Island stems from the 2004 tsunami in the Maldives, which damaged Faafu atoll's freshwater reservoir. Many residents on inhabited islands that do have sufficient access to treated water still prefer imported water in PET bottles. In addition to drinking treated water, some islands also collect rainwater (Acciarri 2021) in order to reduce dependence on PET bottles. In addition to imports, plastics are also manufactured in the Maldives. At least two facilities are known to produce single-use plastic bags and according to the literature are neither monitored nor regulated, and are exempt from import-relevant regulation as they are manufactured domestically. An example of such regulation that does not apply to domestic producers is that plastic bags are subject to a 400% import duty since June 2021.

Some of the islands in the Maldives “lack a waste segregation system, an efficient collection system to extract recyclables from the general waste stream, and technical infrastructure to recycle” (Nashfa 2016). As a result, PET and other plastic waste is either sent to landfills, incinerated in an open-air burning site, or exported to India for recycling. Plastic waste that does not make it into one of these disposal streams often ends up along shorelines threatening both marine ecosystems and the tourism industry, which makes up a quarter of the country's GDP.

Uninhabited and remote islands are not immune from plastic pollution. On the remote coral island of Vavvaru, use of the island is restricted to educational and research purposes, and strict waste disposal rules are strongly enforced. Despite this, a 2017 study by Imhof et al. that sampled several locations around the island found accumulated macro (> 25 mm), meso (5–25 mm), and micro (1–5 mm) plastics including Styrofoam, foil, and large plastic items.

Because of the small landmass and rising sea levels in Maldives, landfilling is particularly unsuitable waste management option (Kapinga and Chung 2020). The only operational landfill for Maldives is on the human-made island, Thilafushi, and the amount of waste generated in the Maldives exceeds its capacity (Shadiya 2016). Experts estimate that 20 hectares of landfill space remain, which will only last another 25 to 30 years, assuming current waste generation rates (Medina 2012; Peterson 2013). Thilafushi is also threatened by rising sea levels which may lead to waste from the landfill entering the Indian Ocean.

Currently, the total plastic footprint in the Maldives is about 12% of the total waste produced in the country, which is about 43,134 tons per year (Maldives Ocean Plastics Alliance 2021). However, with the absence of waste-type segregation and a systematic plastic waste collection system, 66% of these plastic waste are mismanaged (Maldives Ocean Plastics Alliance 2021). In fact, in 2019, only 0.06% of all plastic used in the Maldives was reported as reused or recycled in 2019, and 189 tonnes were exported, presumably for recycling (Moosa 2021). Such low percentage might also be the result of lack of data on many types and end results of waste in the most recent report. Waste that is transported for export for recycling is often transported in uncovered barges and may enter the marine environment that way as well (Kapmeier and Gonsalves 2018). Though technically prohibited, incineration of plastics is commonly carried out in some islands, which releases noxious substances and threatens public health, air quality, and the tourism industry. As of 2016, some 14% of plastic waste was incinerated across the Maldives. Public littering is also an issue on inhabited islands such as Hulhumale, where the Waste Management Corporation Organisation (WAMCO) invests a lot of money on litter cleanup of single-use plastics.

In addition to threatening the tourism industry, degrading air quality, and harming marine ecosystems, mismanaged waste in the Maldives contributes to the risk and spread of Dengue fever. During rainy seasons, sitting water in bottles, cans, tires, and plastic bags that have entered the environment facilitate breeding for mosquitos that can spread the disease (Shadiya 2016).

POLICIES TO ADDRESS PLASTIC POLLUTION

Export-Import Act of Maldives (Act No. 31/79)

Import Tax on Nondegradable Plastic Bags

In 2012, the government-imposed levies on producers, importers, and distributors of plastic bags, which has led to a reduction in the use of bags (Chasse 2018). The import of nonbiodegradable plastic bags of more than 30*30 cm long and bags over 50 micron thickness is taxed at a rate of 400% (Zero Waste Maldives). At the same time, the government has not imposed a tax on *biodegradable* bags. Biodegradable bags, in this context, are defined as those made from biomass (e.g., starch or gelatin) that are third-party certified.

Single-Use Plastics Import Ban

In 2020, the government amended the regulation to allow the president to compile and make public a list of single-use plastics whose import is prohibited. With the guidance established in a complementary Single Use Plastics Phase-Out plan (below), this legislation will begin with the prohibition of imports on “drinking straws; plates, cutleries and stirrers; Styrofoam lunch boxes; 30x30 cm carrier bags; areca nuts in plastic wrapping; single use coffee cups below 250ml; cotton buds with plastic sticks; 50 ml and smaller toiletry bottles; and, below 500ml PET beverage bottles. After December 1, 2022, importation of carrier bags below 50-micron thickness; 50–200 ml toiletry bottles; and, one-liter PET beverage bottles, will also be prohibited” (The President’s Office 2021).

Single Use Plastics Phase-Out Plan

In addition to the prohibitions on imports and levies mentioned above, the Single Use Plastics Phase-Out plan (SUP Phase-Out Plan) includes other policy instruments intended to reduce the quantity of single-use plastics in the Maldives. These include increasing existing levies on SUP imports (e.g., plastic bags, PET bottles and raw materials, plastic balloon sticks, single-use plastic party decorations), exempting levies on alternatives to SUP (e.g., package-free products, utensils made from bamboo, and water filtration systems), developing fees on SUPs at the point of sale (e.g., plastic bags, balloon sticks, decorations, and condiment tubes), and creating incentive programs for businesses that import, develop, and sell SUPs to use alternatives. The plan also has set policy and regulatory goals related to increasing data collection on imports of SUPS to determine national reduction and collection targets, passing extended producer responsibility (EPR) legislation for bottles, food and drink containers, food packaging, and household cleaning products and beauty products. Linked to this EPR mechanism will be a Deposit Refund System for products included in the EPR legislation. Simultaneously the government intends to provide the infrastructure for the provision of potable water as an alternative to PET bottles, and mandate the use of nonplastic alternatives such as soap and shampoo bottles in tourism facilities, water refill stations in public spaces, and nonplastic sea sickness bags among others. Lastly, all of these regulatory and economic instruments will be supplemented with information-based instruments including public awareness campaigns on SUPS, waste segregation, and littering. This phase-out was, in part, inspired by the work done by Common Seas in their “Plastic Drawdown” model to visualize and evaluate changes in plastic waste and leakage under various management schema. This drawdown model can be used in data poor contexts, such as the Maldives. In their 2022 report, authors Royle et al. suggest that the comprehensive phase-out implementation (including bans on SUPs, taxes on items and improved waste management as highlighted in the above) can yield a reduction of up to 85% of plastic pollution by 2030.

Environmental Protection and Preservation Act of Maldives

According to this legislation, waste that is deemed harmful to the environment “shall not be disposed within the territory of Maldives,” though the legislation does not specify whether or not this includes any type of plastic. In order to avoid disposing into the environment, waste can be landfilled, incinerated, or exported.

Regulation on the Protection and Conservation of Environment in the Tourism Industry

This legislation, which is intended to “to protect the environment in the tourism industry and to encourage and facilitate sustainable development of tourism” includes mandates to separate plastic among other waste types in separate bins and labeled and prohibits the burning of plastics waste in open areas.

Multilateral Partnerships and Campaigns

Prior to the national SUP ban, a “Ban the Bags” campaign spearheaded by corporate actors such as Maldives Getaways and telecommunications firm Dhiraagu resulted in SUP bag bans on the islands of Bodufolhudhoo, Ukulhas, and Keyodhoo. It is unclear if these were codified via subnational law or voluntary commitments made by stakeholders on the island.

In addition, the government has received loans and grants to develop waste-to-energy incinerators on Thilafushi (Asian Development Bank 2020) and on Vandhoo in Raa Atoll (Lorson and Kadarli 2015). Likewise, a GEF small grants loan resulted in the development of waste segregation infrastructure on the island of Magoodhoo, which was intended to minimize burning, however the funding ultimately ran out and more financial support was needed to continue waste segregation.

The Maldives is a member of the Commonwealth Clean Ocean Alliance, an action group comprising Commonwealth countries. Member states of the Commonwealth Clean Ocean Alliance are encouraged to:

- Take steps to eliminate all avoidable single-use plastic waste
- Significantly reduce single-use plastic carrier bags by 2021
- Ban the sale and manufacture of microbeads in rinse-off cosmetic and personal care products by 2021
- Join the London Protocol, the UN Clean Seas Campaign, and the Global Ghost Gear Initiative

While the Maldives has taken strides on the first two steps, the country has yet to act on microbeads or join other multinational initiatives.

POLICY EFFECTIVENESS

The differentiated tax rates for imports of nonbiodegradable and biodegradable plastic bags have resulted in a 76% reduction in the importation of nonbiodegradable plastic bags from 2012 to 2017, and an increase in the importation of biodegradable bags in that same period of time. While this tax rate has had a positive impact on the use of nonbiodegradable plastic bags, there has simultaneously been an increase in biodegradable plastic bag use, which are also single-use and are entered into an insufficient waste management sector (Chasse 2018). As part of the regulation, biodegradable bags are labeled with “Environmentally Friendly Bag,” which obfuscates the truth that biodegradable bags are still harmful to natural systems. According to Zero Waste Maldives, “[a]lmost all of the importers now import oxobiodegradable bags which disintegrate into microplastics over time and are in fact more harmful to the environment than the regular plastic bags” (Ismail and Hussain 2019).

CONCLUSION

Maldives is a SIDS that is beginning to comprehensively target single-use plastics using national level policy instruments. Effectiveness measures on the bag ban demonstrate that they do result in decreases in plastic use, however they may lead to an increase in biodegradable alternatives which does not interrupt the habit of disposability and which many advocates for plastic reduction see as problematic alternatives as well. The implementation and enforcement of the phase out plan will be an important example of how SIDS can approach plastics pollution despite having limited space and infrastructure to process plastic waste.

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APPENDIX – METHODS

To start off the search for policy documents, researchers referenced the Nicholas Institute’s Plastics Policy Inventory for any relevant national or subnational policies in Maldives. At the time this case study was initially drafted, there were neither national nor subnational policies from Maldives in the Inventory.

In addition to the Maldives plastic pollution policy search, researchers then searched for academic and grey literature relating to plastic pollution and relevant policies in Maldives. This search was mostly done through Google Scholar. Search terms included, but were not limited to, “Maldives plastic,” “Maldives plastic pollution,” “Maldives plastic pollution policies,” “Maldives plastic bag ban,” “Maldives single-use plastic,” and “Maldives plastic use.” In addition, Google Scholar search strings outlined in the “methods “ section of the [20 Years of Government Responses to the Global Plastic Pollution Problem](#) [The Plastics Policy Inventory](#) report were adapted, as follows:

“Maldives” AND “Plastic” AND (Policy OR Govern* OR Institution OR Law OR Regulat* OR Legal OR Intervention OR Infrastructure OR Coastal city OR Mega-city OR Municip* OR Subsidy OR subsidize OR Subsidies OR Ban OR bans OR Tax* OR taxes OR Fee*);

Fifteen total articles were found, and all were screened for inclusion. The inclusion criteria were that the articles described the plastic pollution problem in Maldives, described relevant policies in Maldives, or they described the effectiveness of relevant policies. They were then read through and relevant information that could aid this case study was extracted. When citations referenced additional literature that seemed relevant, those papers were subsequently screened for inclusion as well. This is the primary method in which the background information was collected.

Much of this scholarly literature referenced specific national policies, and in some cases included data on effectiveness as well. To find the policy documents that were not originally in the Plastics Policy Inventory, the policy names found in the literature were either entered in a Google. This is how the specific language of the policy documents was discovered and analyzed, though most policy documents were in Dhivehi and could not be analyzed beyond how the secondary literature described them. The policies which demonstrated an intent on behalf of policy makers to address plastic pollution were then entered into the Plastics Policy Inventory.

Finally, to check if any new policies had been agreed upon or enacted since the publication of the literature referenced above, the same search strings that were used to find the literature were applied in a normal Google search. Here, researchers were looking for recent news articles referencing policies that may have been implemented and not yet included in any literature. Nothing new was discovered, though there were many references to the recently implemented single-use plastic import ban.