



CLEAN CITIES, BLUE OCEAN

3R/SWM and Marine Debris Reduction Strategy Alignment Assessment | Maldives



Photo credit: Matt Porteous/GO

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Acronyms and Abbreviations

3Rs	Reduce, Reuse, Recycle
CCBO	Clean Cities, Blue Ocean Program
DRS	Deposit refund system
EPPA	Environmental Protection and Preservation Act
EPR	Extended producer responsibility
GDP	Gross domestic product
GoM	Government of Maldives
ICC	International Coastal Cleanup
IDEAS	Island Development and Environmental Awareness Society
IETC	International Environmental Technology Center
IWMC	Island Waste Management Center
kW	Kilowatt
MBI	Market-based instruments
MDT	Marine Debris Tracker
MSW	Municipal solid waste
Mt	Metric tons
MW	Megawatt
NGO	Non-governmental organization
OCHA	Office for the United Nations Coordination of Humanitarian Affairs
PET	Polyethylene terephthalate
PPP	Public-private partnership
RWMC	Regional Waste Management Center
SAR	South Asia region
SAS	South Asian Seas
SBC	Social and behavioral change
SIDS	Small island developing states
SUP	Single-use plastics
SWM	Solid waste management
TIP	Trials of Improved Practices
UMI	Upper middle income
UN	United Nations
UNEP	United Nations Environment Programme
USAID	U.S. Agency for International Development
USD	United States Dollar
WAMCO	Waste Management Corporation Limited
WDC	Women Development Committee
WTE	Waste-to-energy

Executive Summary

As an upper middle-income country comprised of over 1,000 islands, the Maldives' dispersed populations are concentrated on geospatially limited land mass, making plastic waste generation and management critical components to protecting the environment of the Maldives and livelihood of Maldivian people. With essentially all mismanaged plastic waste in the Maldives having the potential to reach the ocean given its topography, the country is developing a national Single-Use Plastic (SUP) Phase Out Policy to combat the impacts of plastic waste on land and marine activities. The SUP Phase Out Policy is currently in draft form, but focuses on implementing national legislation including bans, levies, and tariffs on imported plastic products, establishing a baseline of SUP use and waste data coupled with defined reduction targets, establishing alternative materials and product delivery systems, and shifting towards the principles of circular economy supported by the development of improved recycling infrastructure.

In August 2019, Tetra Tech was awarded the Clean Cities, Blue Ocean (CCBO) Program, a five-year, \$48 million contract from the U.S. Agency for International Development. CCBO is the Agency's flagship program to respond to the global crisis of marine plastic pollution and includes the Maldives as one of its seven focal countries.

The Maldives' draft SUP Phase Out Policy and its National Solid Waste Management Policy, developed in 2008 and revised in 2015, provides an opportunity for CCBO to align and leverage its activities to support the country to enhance, implement, and enforce its ocean plastics policies and plans. In particular, CCBO plans to provide support to improve solid waste management and 3R practices, build social and behavioral change through educational and community efforts, and establish effective policy with sustainable implementation. While the SUP Phase Out Policy is a nation-wide endeavor, much of the focus is occurring in the nation's capital and CCBO's engagement site, Malé. The policy aims to:

- Initiate national data collection mechanism to identify product packaging of imported products;
- Set national reduction targets for SUPs;
- Achieve 85% collection of SUP waste in the Maldives to prevent leakage into the marine environment;
- Increase affordability and accessibility of non-plastic alternatives; and
- Establish a plastic recycling facility that segregates and recycles.

Many of the Maldives' SUP Phase Out Policy strategies are well-defined and actionable and will be served well through CCBO activities that provide policy, technology, and financial analysis and assistance while also incorporating livelihoods, gender, and inclusion into the implementation strategies and decision-making.

In the Maldives, its dispersed geography and population lends to varying waste management approaches. That said, the country has many projects related to development of improved infrastructure and technological innovations. In identifying its approach and activities for prioritization, CCBO acknowledges that community engagement is critical at initial stages and authentic inclusion in the process will build local relationships. Other partnership creation can be cultivated in initial years but implemented in subsequent years after developing relationships. At the same, infrastructure system design and implementation must address and incorporate the vulnerabilities the nation has related to natural and environmental hazards. With significant work underway to combat ocean plastics within the country and region, CCBO will continue to assess, collaborate with, and leverage projects and programs conducted throughout

implementation.

In general, CCBO has strong alignment with the draft SUP Phase Out Policy as well as existing legislation and projects in the country, particularly related to enhancing solid waste management (SWM) and reduce, reuse, and recycle (3R) practices, building SBC through educational and community efforts, and establishing effective policy with sustainable implementation. In particular, the SUP Phase Out Policy will benefit from additional technical expertise, policy recommendations, and baseline research offered through CCBO.

I. Introduction

On August 28, 2019, Tetra Tech was awarded the Clean Cities, Blue Ocean (CCBO) Program, a five-year, \$48 million contract from the U.S. Agency for International Development's Bureau of Economic Growth, Education, and Environment. CCBO is the Agency's flagship program to respond to the global crisis of marine plastic pollution. The objectives of CCBO are to:

Objective 1: Promote reduce, reuse, recycle (3Rs) and strengthen local and regional markets for recycled plastics;

Objective 2: Build social and behavior change (SBC) for 3Rs and sustainable solid waste management (SWM);

Objective 3: Increase capacity and effective governance of SWM and recycling systems; and

Objective 4: Support international fora, public-private partnerships (PPPs), and multi-stakeholder alliances.

As a cross-cutting objective, CCBO also works to support and enhance the livelihoods of those working in the waste and recycling sectors, particularly women, as well as advance gender equality within the sector and opportunities for women's economic empowerment.

Over the next four years, CCBO will collaborate with local USAID missions and key stakeholders to test and scale 3R/SWM solutions with an initial focus in seven focal countries: Indonesia, the Philippines, Sri Lanka, the Maldives, Vietnam, the Dominican Republic, and Peru. To inform CCBO's approach, the program is producing 3R/SWM and Marine Debris Reduction Strategy Alignment Assessments in each of the focal countries to highlight the ways in which CCBO can support existing marine debris strategies and provide recommendations for increased impact. The Jambeck Research Group at the University of Georgia was selected to produce Reduction Strategies for The Philippines, Vietnam, Sri Lanka, the Maldives, and Indonesia. These Reduction Strategies were generated through literature review of existing marine litter plans and strategies, review of proposed CCBO plans, interviews with CCBO staff, and additional desktop research.

2. Scope and Background

The Maldives' land mass is characterized as a group of atolls made up of thousands of islands covering almost 300 km in area and approximately 1,130 km of coastline. The dispersed nature of this island nation has created challenges for SWM and pollution. While, globally, abandoned and derelict fishing gear are known contributors to marine debris, it is estimated that 80% of marine debris may come from land-based activities that are proximal to coastlines, and as such, a contributor of land-based waste inputs is municipal

solid waste (MSW). Key industries in Maldives include tourism, fish processing, shipping, boat building, and coconut processing.¹ Tourism alone accounts for 30% of the Maldives’ gross domestic product (GDP)² and generates an estimated 21% of the nation’s solid waste.³ Both the tourism and fishing industries are expected to grow and so the waste associated with their operations are key concern for sustainable waste and marine management.⁴

The entire population of the country, 391,904 as of July 2020,⁵ is considered coastal (within 50km of the coastline) and geospatially concentrated—meaning that any mismanaged waste on land has the potential to reach the ocean. The nation’s average population density is 1,719 people/km²—29 times that of the world’s average. Malé, the capital of the Maldives and CCBO’s engagement site, is one of the most densely populated cities in the world.

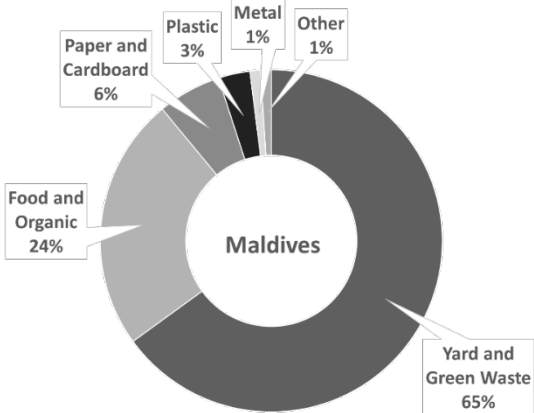
A study by Jambeck et al. (2015), estimated that 31,500 tons of plastic waste was mismanaged in the Maldives in 2010. From this mismanaged quantity, the mid-range estimate from the study found that 7,870 mt of land-based plastic waste may have entered the ocean from the Maldives, 0.1% of the total global input of 8 mt. Though it’s a small fraction of the global inputs of plastic marine debris, the country has the fourth highest level of mismanaged plastic waste at 0.220 kg/person/day.⁶

2.1 Generation and Characterization of MSW

As a region, the South Asia Region (SAR) has an average per capita waste generation rate of 0.52 kg per day, compared to the global average of 0.74 kg per day. In the region, the Maldives has the highest national per capita waste generation rate at 1.44 kg per day,⁷ however, this can vary between the local systems. The resort industry sees the highest waste generation rate at 2.5-3.5 kg per person per day, compared to 0.8-2.48 kg per person per day in Malé, 0.8-1.0 kg per person per day in inhabited islands. Based on current population estimates for the country, approximately 206,000 metric tons (mt) of waste is generated annually in the Maldives.

From a waste composition perspective, the SAR has an average plastic composition of 7.8%. This is lower than the world average of 12%.⁸ Comparatively, the Maldives’ plastic composition is much lower, at 3% (Figure 1). Composition differs between the general Maldivian

Figure 1. Waste composition in the Maldives (Source: Kaza et. al., 2018.)



¹ Pucino, 2016.
² Stevens and Froman, 2019.
³ Pucino, 2016.
⁴ Stevens and Froman, 2019.
⁵ Central Intelligence Agency, 2020.
⁶ Barnes, 2019.
⁷ Kaza et. al., 2018.
⁸ Ibid.

population and the resort industry, with recyclables (including metals and plastics) making up 5% of the tourism waste stream.⁹

In 2019, the International Coastal Cleanup (ICC)—an annual international cleanup effort that collects count data of littered items—collected 17,176 items in the Maldives, with the top three items being plastic beverage bottles (n=6,106), plastic bottle caps (n=5,861), and cigarettes (n=560). In the city of Addu in the Maldives, 2,172 items have been recorded with the Marine Debris Tracker (MDT) mobile application. Of these, 58% of items were categorized as plastic, 24% were categorized as “other,” but were associated with plastic shipping waste, and 11% was categorized as rubber (i.e., rubber flip flops and tires). The remaining 7% of items were recorded under material types including glass, cloth, paper, and metal. Fishing gear only constituted 1.0%. Of the plastics fraction, the most recorded item was plastic bottles (89%), followed by plastic caps or lids (5.5%), and plastic jugs (2.1%). The remaining fraction recorded were a range of plastic items such as balloons, plastic utensils, and tobacco and food packaging.

2.2 Solid Waste Disposal and Management

The Maldives’ waste management challenges are particularly unique given its dispersed geography and populations which are spread over an average distance of 860 km.¹⁰ Most residents live in Malé, while the remaining islands typically have less than one thousand inhabitants, and another 100 islands are dedicated to tourist resorts and activities.¹¹ Because of this, the waste management system in the country is disparate and dependent upon the location within the nation. Little information is available regarding waste collection coverage in the country.

Regionally, the SAR has a waste collection rate of 51%. In urban areas, this rate increases to 77%, but this can vary by country and city, and rural area coverage is considerably less at 40%.¹² Only 38.2% of the Maldives’ population’s waste is estimated to be collected,¹³ and this is usually through a paid service that comes door-to-door,¹⁴ but is often not regular.¹⁵ The state-owned waste management service, Waste Management Corporation Limited (WAMCO), was recently revived in 2015 and serves the main urban settlements of the country including Malé Region, Hulhumalé, Addu City, and Fuvahmulah City.¹⁶ In the less populated islands, waste is either collected by island councils and community operators or is taken to designated disposal sites or Island Waste Management Centers (IWMCs) by households themselves.¹⁷ There is little published data on the informal sector in the Maldives, however, in the city of Fuvahmulah, it has been documented that 100% of waste is collected by informal waste pickers.¹⁸

Like the rates of waste generation in different local systems, the way that waste is managed in different areas of the country can vary greatly, as shown in Table I. However, as a whole, the waste management

⁹ The World Bank, 2016.

¹⁰ Malatesta et. al., 2015.

¹¹ Saliu et. al., 2018.

¹² Kaza et. al., 2018.

¹³ Ibid.

¹⁴ Pucino, 2016.

¹⁵ The World Bank, 2016.

¹⁶ Wong et. al., 2015, Sadeh et. al., 2016, WAMCO, 2020.

¹⁷ Ministry of Environment, 2019.

¹⁸ Kaza et. al., 2019.

system in the Maldives exists in three main parts:^{19,20} central and regional waste management dumpsites; hybrid systems implemented by resorts; and informal waste management practices followed by local communities.

Table 1. Overview of solid waste management systems and practices in the local systems of the Maldives (Source: Malatesta et. al., 2015)

Solid Waste Management Systems and Practices	Local Systems			
	Inhabited Islands	Urban Settlements	Uninhabited Islands	Resorts
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

In the Maldives, most waste (63%) is reportedly disposed of via waterways and marine environments (being that it is a small island nation, in this case, this is likely direct disposal in the ocean). Notably, one of the country’s main waste disposal locations is an artificial island called Thilafushi which serves as a non-engineered landfill, and so much of the waste deposited there has the potential for direct disposal into the sea. Small fractions of the waste stream have been reported to be managed through burying (17%), composting (7%), burning (7%), and incineration (6%). The remaining 24% is reportedly managed via and burning (7%).^{21,22}

From these sources, there is notably no nationally reported fraction as treated via engineered landfills or recycling,²³ however, a recycling facility has been developed in the capital city of Malé through a partnership between the local waste management service and Parley, an organization discussed in more detail in subsequent sections. Formal government-based recycling is reportedly challenging because of insufficient funding and technical capacity. However, recycling does occur by the informal sector at Thilafushi for export and may not be reported formally by the government.²⁴ With the lack of end-use markets, only a fraction of the plastic waste generated in the country is exported—an estimated ~7,200 mt in 2014. Exported quantities, however, have decreased recently, likely due to international policy impacting recyclable material global trade,²⁵ with only 189 tons exported in 2018 (11% of which went to Sri Lanka,

¹⁹ Malatesta et. al., 2014.

²⁰ Malatesta et. al., 2015.

²¹ Kaza et. al., 2018.

²² Malatesta et. al., 2015.

²³ Kaza et. al., 2018.

²⁴ Note: Kaza et al. 2018 provides data for 215 countries and economies and is based upon a range of sources including local/national reports and SWM experts in the country or region in question. Sources are considered verified and up to date, and most data published was compiled in 2017. Other data comes from reporting on informal or recycling conducted by non-governmental entities, e.g., Parley.

²⁵ Brooks et. al., 2018.

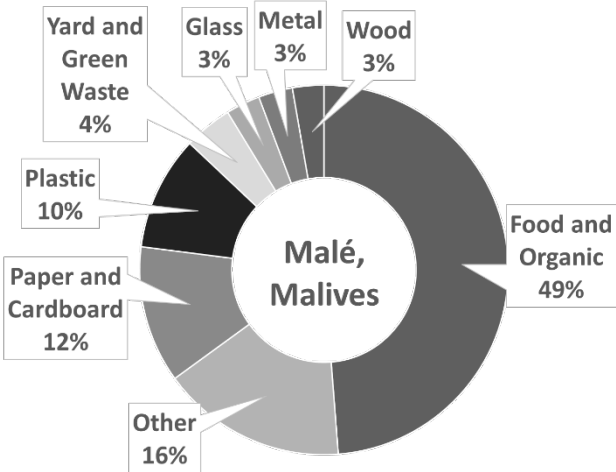
the remaining fraction was sent to unspecified Asian countries). No plastic scrap was imported by the country in 2018.²⁶

2.3 Waste Management in CCBO’s Engagement Site (Malé)

The World Bank’s What a Waste 2.0 report provides data for three cities in the Maldives—Malé, Addu, and Fuvahmulah—all of which have legal frameworks in place setting out rules and regulations regarding SWM and institutional units enforcing solid waste issues in their respective cities, such as illegal dumping or littering. However, there is no evidence in the data that plastics and packaging are separated from general waste in the Maldives, suggesting that this may be a key area of intervention for improved plastic management at the city level. While the World Bank reports that environmental assessments, including social aspects, have been performed in the Maldives at the city level (including Malé) within five years prior to 2018,²⁷ institutional informational system frameworks are still lacking for the nation’s cities, something that may be a gap.

The nation’s capital city of Malé contains about a third of the country’s population,²⁸ with the remaining population distributed throughout 200 of the nation’s islands, and so much of the efforts at centralized waste management is focused on Malé. The per capita waste generation rate for the city ranges from 0.8-2.48 kg per person per day,²⁹ and the city itself has a much higher plastic composition compared to the nation’s average—a tenth of the city’s waste stream is comprised of plastic (Figure 2). The primary collection system in Malé is door-to-door, while other cities in the nation have significant collection coverage via the informal sector combined with a centralized drop off point (i.e., Fuvahmulah). Household waste in the Maldives is typically a flat fee per household, and according to WAMCO’s website, that fee is 150MVR (approximately \$9.75) per household per month and 100MVR (approximately \$6.50) per apartment per month which are typically run by building services. WAMCO has divided the city into 13 zones that include service to both residential and commercial areas. Once collected, waste is transported for treatment and storage to the nearby artificial island called Thilafushi (Figure 3). From a logistics standpoint, one specific challenge is narrow roads and high population density in the city, which has been noted to impact WAMCO’s vehicle fleet.³⁰

Figure 2. Waste composition in Malé, Maldives (Source: Kaza et. al., 2018)



²⁶ UN Comtrade Database, 2018.
²⁷ Kaza et. al., 2018.
²⁸ Central Intelligence Agency
²⁹ Malatesta et. al., 2015.
³⁰ Asian Development Bank, 2018.

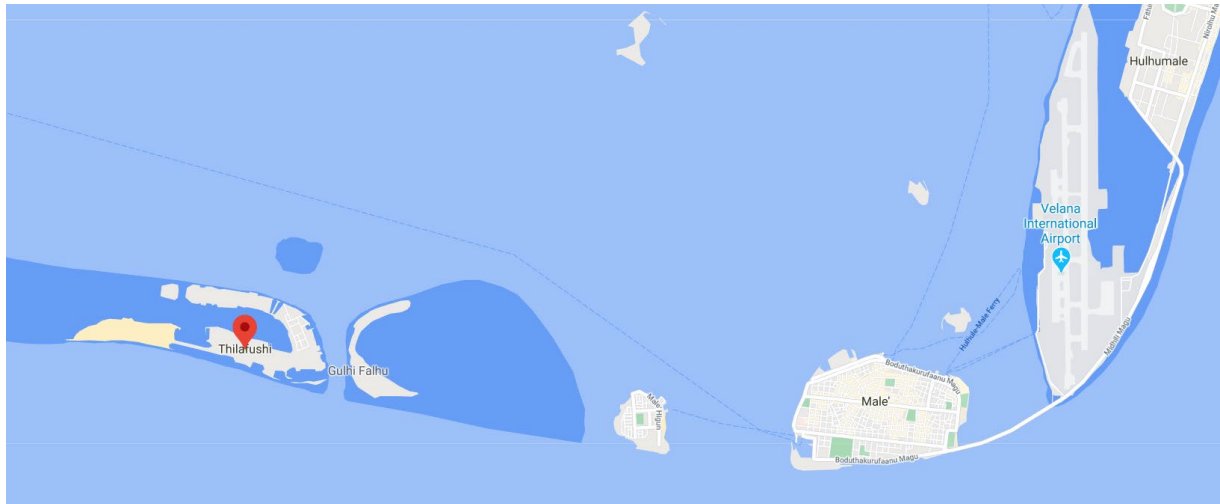


Figure 3. Location of the Thilafushi dump site relative to Malé (Source: Google Maps)

In 2018, a government-led project by the Ministry of Energy and Environment, the Greater Malé Environmental Improvement and Waste Management Project, was developed with the primary goal of developing a Regional Waste Management Facility outfitted with waste-to-energy (WTE) capabilities. The ongoing project has been split into two phases, the first of which is focused on a 40 million USD investment in waste collection infrastructure, outer-island waste management systems (focusing on low income and women empowerment), and increased institutional capacity and public awareness. The second phase is a 127.5 million USD investment in a designed and technically supported WTE facility, engineered landfill for residues, and rehabilitation of the Thilafushi dumpsite. The project aims to be completed by December 2023.³¹ Additionally, according to a World Bank Development Update for the country, “the Government of Maldives [sic] has recently established a regional waste management center at R. Vandhoo to cover four northern atolls which can produce up to 500 kW daily. The government has also initiated plans to build a waste-to-energy facility in the island of Thilafushi to supply 8 MW of power to the Greater Malé region. A 1.5 MW waste-to-energy facility was also proposed for Addu City.”³²

Additionally, the Government of Maldives (GoM) has a registered a commitment focused on the tourism industry based in Malé through the UN Ocean Conference Registry of Voluntary Commitments. This commitment is focused on the *Malé 3R Declaration of Private Tourist Resorts towards Sustainable Tourism and protection of Marine and Coastal Ecosystem*, led by the Ministry of Environment and Energy which aims to implement 3R and resource efficiency particularly in the tourism and resort context. While the methodologies of the project are focused on a wide range of resource management applications, three of the six key implementation methods are focused on waste management, plastics, and physical damage to reefs from pollution. The commitment has been continuously implemented since 2015, however, there is little information regarding the impacts and outcomes. That said, as part of the commitment, a 3R Award system for the resort system was developed as part of the commitment which is given to resorts that demonstrate exceptional waste management practices, though details of this award system are not available through desktop research.³³

³¹ Ministry of Environment, 2018.

³² World Bank, 2020.

³³ UN Ocean Conference Registry of Voluntary Commitments

3. Relevant National and Local Actions

4.1 Regional Actions

South Asia is one of three key regions in the world that have some of the fastest growing volumes of solid waste. Given the concerns regarding mismanaged waste and sustainable waste management,³⁴ there are efforts at the regional level to help mitigate these concerns as the region grows. National level policies in the SAR (primarily in India, Pakistan, and Sri Lanka) are often characterized by prohibitive instruments such as bans on specific materials and products, however, there is little documentation for the region showing the effectiveness or observed outcomes of these measures.³⁵ Additionally, there seems to be difficulty with enforcement in the region as a whole.³⁶

The Regional Seas Programme, which aims to encourage countries that share waters to develop comprehensive efforts and actions to help reduce degradation of oceans and has been identified as a pioneering program for developing action plans for combatting plastic pollution and marine debris. As part of this program, supported by UNEP, South Asia agreed to a plan in 2018—the Regional Marine Litter Action Plan for the South Asian Seas (SAS) Region. The plan focuses on the development of national legislation targeted at land-based plastic pollution at all phases of the plastic life cycle and works to create instruments ranging from research, monitoring, education, and outreach. Additionally, it focuses on reduction at the source using economic instruments as well as litter capture at ocean entry points and recommends alignment with international policies. The plan recommends the:

- Establishment of institutional structure and dedicated marine litter institutions for developing policies, plans, and strategies, and enhancing cooperation among relevant institutions;
- Establishment of new legal framework to ensure that national level frameworks are in place in participating SAS countries;
- Review of mechanisms for enforcement to align laws and regulations, identify institutional enforcement options, and document and report progress;
- Development of programs to reduce litter at the source and to capture at the point of entry
- Introduce new economic and market instruments for consumer incentivization; and
- Research regarding coastal marine litter and development guidelines for best management practices.

There has also been significant international attention given to the unique challenges for waste management in the context of small island developing states (SIDS), of which, the Maldives is considered one. For the geographic group as a whole, there are international policy efforts aimed at SIDS such as the 2018 G7 Ocean Plastics Charter, which is committed to advancing efforts to reduce marine litter and plastic, particularly in SIDS.

³⁴ Kaza et. al., 2018.

³⁵ Karasik et. al., 2020.

³⁶ UNEP, 2018.

Many island states in the Pacific Islands region have also successfully enacted policies that target plastic pollution, with the Marshall Islands and Vanuatu, in particular, noted as examples to follow regarding banning single use plastics.³⁷

4.2 National Supporting Legislation

While the country is moving towards developing political frameworks for phasing out SUPs and addressing marine litter, there are also some previously established legal efforts addressing SWM that have been carried out under the Maldives' Ministry of Environment and the Environment Protection Agency (EPA). The Ministry provides a top-down approach by implementing and monitoring policies and regulating through legal frameworks, projects and research, and building capacity and necessary infrastructure. Complementary to this, the EPA provides ground level authority through providing approval of SWM plans, permitting related to waste, and monitoring of SWM operations. The Ministry of Health, Ministry of Tourism, and Ministry of Foreign Affairs also play roles in national waste management structuring and policymaking.

Existing legislation targeting waste management and environmental protection includes Sections 7 and 8 of the Environmental Protection and Preservation Act (EPPA) of 1993 (Act No. 4/93), which provides regulation addressing waste disposal, oil, and poisonous substances, and hazardous/toxics or nuclear waste.³⁸ Additionally, the country implemented the National Solid Waste Management Policy of 2008, which was revised in 2015 and has eleven main targets accompanied by supporting actions:³⁹

- Establish governance structure for solid waste management;
- Hold waste producers accountable for waste they generate;
- Manage and dispose waste as close as possible to the location of generation;
- Accommodate specific requirements of special waste;
- Base SWM on variable facts on known effective strategies;
- Make the SWM system economically viable through fees, EPR, and a dedicated fund;
- Consolidate legislation to support implementation;
- Facilitate private sector participation and partnership with the government;
- Implement financial incentives to support best practices;
- Discourage harmful goods and unacceptable waste activities; and
- Maximize community participation and awareness.

4.3 National Efforts, Commitments, and Action Plans

The UN Ocean Conference Registry of Voluntary Commitments provides details on ocean commitments in the Maldives. The GoM has registered three commitments with the UN Ocean Conference, two of which are nationwide efforts. The first details a commitment from the GoM Ministry of Environment and Energy that focuses on introducing the legal frameworks for reducing plastic pollution, which seeks to aggressively phase out non-biodegradable plastic bags, bottles and packaging, and promote biodegradable plastics all under the SUP Phase Out Policy. Deliverables in the context of the commitment include a policy

³⁷ Karasik et. al., 2020.

³⁸ Ministry of Environment, 2019.

³⁹ Ibid.

proposed in July 2018 that focused on the development of the framework targeting non-biodegradable plastic bottles and bags through bans and mandating the use of biodegradable product packaging followed by adoption, implementation, and enforcement of the ban on plastic bags by December 2020.⁴⁰ The other national commitment from the GoM, which was introduced and implemented in 2017, focuses on requiring licensed traditional fishing vessels to avoid and intercept ocean plastics such that both fishing operations and their traditional practices are maintained in a sustainable matter.⁴¹ Further, in September 2017, President Ibrahim Mohamed Solih announced a comprehensive phase out of single-use plastics in the country by 2023.⁴² The short term aims include the following:

- Passing national Single-Use Plastic Phaseout Regulation in 2020;
- Initiating a national data collection mechanism to identify product packaging of import products, in order to monitor SUP's imported into Maldives, i.e., to capture the quantity of SUP's put in the market in 2023;
- Setting national reduction targets for SUP's by 2022; and
- Achieving 85% collection of SUP waste in the Maldives to prevent leakage into the marine environment by 2023.

The long-term goals aim to increase affordability and accessibility of non-plastic alternatives by 2030, establish national policy for circular economy, and establish a plastic recycling facility that segregates and recycles by 2030.⁴³ To meet these objectives, the draft SUP Phase Out Policy includes the following six actions:

- 1) Ban the import, production, and sale of ten specific single-use products by June 2021
- 2) Establish market-based instruments including increased import tariffs and national levies on plastic bags, PET bottles, and balloons and event decorations as of June 2020, and incentives and business facilitation by June 2021
- 3) Strengthen waste data and development of reduction targets by collecting and analyzing data regarding surrounding a list of 20 specific single use plastic items and their plastic-free alternatives that are imported
- 4) Legislation on Extended Producer Responsibility (EPR) for packaging by December 2020 such that importers, producers, and distributors support product design, product collection, and end of life management, in particular through a deposit refund scheme aiming to be implemented by December 2021.
- 5) Develop strategies of sustainable provision of alternatives to single use plastics which targets a range of actions in the country such as updates to the Tourism Act and refill stations in schools, hospitals, restaurants, etc.
- 6) Education and awareness efforts including the development of a communication plan, nationwide campaigns on littering and drinking tap water, and publicly available information regarding waste collection and segregation.

As noted in the policy, the first effort focuses on the ban on imports, production, and sale but will likely have the largest impact on women who comprise small and medium size businesses that use plastic containers and packets to sell goods. As such the policy exempts these businesses as part of the national plan but aims to develop a unique set of measures for that application.

⁴⁰ UN Ocean Conference Registry of Voluntary Commitments.

⁴¹ Ibid.

⁴² The Republic of Maldives President's Office, 2019.

⁴³ Nashfa, 2020.

4.5 Existing Local Projects Aligned with the SUP Phase Out Policy

There are some existing activities in the Maldives focused on education and awareness related to marine plastic pollution. Under direction of the Maldives Ministry of Education, all schools in the country are plastic-free as of 2018. The Ministry also created a student-based ocean awareness effort in 2018, Farukoe, which aims to educate school age children on ocean reefs and marine conservation. The program helps to encourage and provide resources for coordinating beach clean ups and provides educational materials regarding marine plastics.⁴⁴ Further, the Island Development and Environmental Awareness Society (IDEAS)—a local NGO located in Northern Maldives—has registered with the UN Ocean Conference Voluntary Commitments its aim to develop awareness about marine pollution and local impacts and identify strategic natural areas for protection and management by the community. The group plans to conduct baseline reef surveys in the same area of the country for increased monitoring and rehabilitation efforts, which will include cleanups and awareness programs for waste management.⁴⁵

While many in-country efforts exist, there are some international NGO groups that focus efforts for improving waste management of plastics and produce activities that support the goals of the Maldivian policies. For example, Parley for the Oceans is an international NGO that seeks to bring interdisciplinary collaboration to develop alternative business models to create eco-based products. Specifically, Parley has teamed with the Maldives' state-run waste management service, WAMCO, to implement a strategy called Parley AIR which focuses on reducing plastic use, educating communities and youth, combating pollution through cleanups, recycling and plastic interception programs, and supporting eco-innovative approaches for sustainable development. Through these efforts, the group has established a recycling center and lab in Malé and has created a business hub in the country in which participating members can access a network of government, brands, and industry and environmental experts to work toward business-based solutions.⁴⁶

Another example is Clean Blue Maldives, an initiative led by UK-based NGO that leads research initiatives aimed at facilitating marine plastic solutions, is working to eliminate ocean burning of waste and support the Maldives' development of a plastic pollution mitigation strategy through two primary strategies: 1) radical reduction of SUP volumes being used through bans on bottles, straws, and bags, development of DRS for beverage drinks, and reusable diapers for take home box for new parents and 2) optimization of management remaining plastic waste through monitoring and surveillance waste boats to prevent dumping at sea, provision of improved sewer systems and freshwater distribution, and creation of waste-to-wealth centers on islands in the Baa Atoll.⁴⁷

The World Bank has a significant endeavor focused on SWM in the Maldives, the Maldives Clean Environment Project, which began in 2017. The \$17.5 million USD project consists of four components including strengthening and streamlining the national SWM policy framework and its implementation, improving regional waste management systems in select zones, improving island waste management systems in select zones, and providing project management. The regions of the country that the project focuses on include Zone IV and V in southern Maldives and Zone II in the North Central Region, as well as island level activities, but notably this does not include the Malé Atoll or the capital city itself. Regardless,

⁴⁴ Farukoe, 2018.

⁴⁵ IDEAS

⁴⁶ Parley, 2020.

⁴⁷ Common Seas, 2020.

the project seeks to develop island-level facilities for waste collection, segregation, and treatment before being transported to a Regional Waste Management Center (RWMC), which has been constructed in the Vandhoo atoll in Northern Maldives.

There is also past collaboration between the Maldives and UNEP. In September 2017, the Maldives joined the UN Environment Clean Seas campaign, which focuses on multi-stakeholder efforts to reduce plastic use, minimize plastic packaging, and pass policy to support these efforts. One of the primary tools for implementing this project is engagement with communities and increasing awareness of the issue of consumption and management of non-recoverable plastic items and SUPs. An additional project coordinated between the Ministry of Environment, the Institute for Global Environmental Strategies (IGS), and the UN Environment - International Environmental Technology Centre (IETC) also has a zonal waste management focus. This project developed a Regional Waste Management Strategy and Action Plan for Zone 6 in the Maldives, which outlines actions to be completed between 2019 and 2023 including maximizing public awareness, waste separation, collection, composting and temporary storage of recyclables and residuals at the island level and improving technology and infrastructure, sustainable financing systems, and enhancing institutions and private sector involvement at the regional level.

4. CCBO Alignment

The activities proposed in the CCBO Year One+ Work Plan for the Maldives (November 2020 to September 30, 2021), including focused work at key engagement sites, largely complements existing legislation, projects, and the draft SUP Phase Out Policy. The draft policy first sets out to pass a ban on certain imported SUP, but implementation and roll out of the policy may benefit from CCBO analysis and strategic enforcement assistance. A key action of the policy is to establish data collection and baselines which will inform reduction targets and impacts of the product ban legislation. The draft policy also focuses on provision of alternatives to plastics and delivery formats (particularly for drinking water), which could be made stronger through CCBO activities that explore funding mechanisms and technical assistance.

The following table maps potential CCBO Activities to related action items and resource requirements in the draft SUP Phase Out Policy. The table is intended to provide an overview of areas for potential collaboration and alignment and only highlights those areas of the policy relevant to CCBO collaboration. Key resources that overlap with CCBO efforts are in bold.

Table 2. CCBO activity alignments with the SUP Phase Out Plan for the Maldives

Goals of the SUP Phase Out Plan for Maldives	Draft SUP Phase Out Action	CCBO [Work Plan] Activity
Pass national Single-Use Plastic Phaseout Regulation in 2020	4.1 Ban on the import, production, and sale of specific SUP products 4.2 Market based instruments including tariffs, levies, and incentives and business facilitation	Activity 1.4 (and all sub-activities) – Improve local implementation and enforcement of laws, policies, and regulations M 2.2.2 - Monitor (and engage in select) national and local opportunities for policy advancement [and in subsequent years, support drafting of

		<p>new regulations, as needed, to strengthen financial sustainability and transparency]</p> <p>M 3.1.2 - Begin to conduct Trials of Improved Practices (TIPs) for key behaviors and willingness/ability to pay</p> <p>M 3.3.1 - Identify ways to increase safety, income, living conditions for waste workers [and in subsequent years, develop minimum acceptable policy standards that support livelihoods, including living wage/benefits and working conditions standards]</p>
<p>Initiate national data collection mechanism to identify product packaging of imported products, in order to monitor SUP's imported into Maldives</p>	<p>4.3 Strengthening of national waste data and setting reduction targets for plastic packaging</p>	<p>Activity 1.2 (and all sub-activities) – Support the development and/or strengthening of long-range SWM plans in engagement sites</p> <p>M 3.1.1 - Conduct formative research on SBC in engagement sites and capacity building of CCBO grantees, as appropriate, to contribute to the research</p>
<p>Set national reduction targets for SUP's by 2022</p>	<p>4.3 Strengthening of national waste data and setting reduction targets for plastic packaging</p> <p>4.3.1 Determine national reduction and collection targets for 2040</p>	<p>Activity 1.2 (and all sub-activities) – Support the development and/or strengthening of long-range SWM plans in engagement sites</p> <p>M 1.3 (no sub-activities) - Share international and domestic best practices virtually or in-person</p> <p>M 2.2.1 - Identify strategic actions for 3R/SWM and marine debris reduction in support of national plans</p>
<p>Achieve 85% collection of SUP waste in the Maldives to prevent leakage into the marine environment by 2023</p>	<p>4.4.2 Deposit Refund System (DRS) that is complementary with EPR schemes</p> <p>4.6 Education and awareness through the development of</p>	<p>M 1.2.1 - Establish baseline of how waste, especially plastics, is managed in CCBO engagement sites</p>

	communication plan and public awareness campaign, anti-littering campaign, and publicly available information on waste segregation, collection, and return stations	<p>Activity 2.1 (and all sub-activities)</p> <ul style="list-style-type: none"> - Increase uptake of 3Rs in CCBO engagement sites <p>M 3.2.1 - Introduce self-assessment tool for grantees and local governments to incorporate SBC effectively in 3R promotion</p> <p>Activity 2.3 (and all sub-activities)</p> <ul style="list-style-type: none"> - Engage the private sector on 3Rs <p>Activity 3.2 (and all sub-activities) - Begin implementation of SBC plans in CCBO engagement sites</p>
Provision of wide variety of affordable, and accessible non-plastic alternatives to consumers in Maldives by 2030	4.5 Strategies for sustainable provision of alternatives (specifically for alternative items such as non-plastic alternatives such as seasick bags on sea transport, plastic bags in supermarkets, and diapers in newborn ‘take-home’ kits)	<p>Activity 1.5 (and all sub-activities) - Strengthen the financial sustainability of SWM in CCBO engagement sites</p> <p>Activity 2.3 (and all sub-activities)</p> <ul style="list-style-type: none"> - Engage the private sector on 3Rs
Establishment of national level regulations to promote circular economy for different sectors in Maldives by 2030	4.5 Strategies for sustainable provision of alternatives (specifically for infrastructure that supports reuse, such as provision of water refill stations in schools, hospitals, public facilities, restaurants, etc., the development of a new business model for public water provision, and installation of household water filtration systems in Greater Malé)	<p>Activity 1.5 (and all sub-activities) - Strengthen the financial sustainability of SWM in CCBO engagement sites</p> <p>M 2.3.5 - Engage multilateral banks and development finance institutions to advance and scale initiatives</p>
Establishment of minimum one plastic recycling facility in Maldives that has pre-sorting, sorting and recycling technologies by 2030	4.4 Extended producer responsibility	<p>M 2.1.1 - Assess potential, locally viable technology and infrastructure solutions that may be recommended in future program years or support local/international decision making</p> <p>Activity 1.5 (and all sub-activities) - Strengthen the financial sustainability of</p>

		<p>SWM in CCBO engagement sites</p> <p>M 3.3 - Address and Improve Livelihood Challenges [and in subsequent years develop minimum acceptable policy standards that support livelihoods, including living wage/benefits and working conditions standards]</p>
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5. Recommendations and Gap Identification

The following recommendations are made with the acknowledgment that this report is based on CCBO’s first-year work plan, with three additional program years to follow, and are meant to inform long-term project planning. In terms of prioritization and timing, addressing historical barriers should come first and any projects related to data gathering, monitoring and assessment (especially if baseline data is desired before starting other projects). In addition, although addressing gender disparity and women’s empowerment is described as its own unique approach, this should be incorporated into each program activity so that this is not an afterthought or add-on, but part of the overall CCBO context. Community engagement is also critical at initial stages and early years in the program, and so authentic inclusion in the process will help to strengthen and build local partnerships. Finally, other partnership creation can be cultivated from initial years, but implemented in subsequent years after developing partnerships early to see if there is alignment with goals and initiatives. CCBO should continue to assess the regional context to leverage projects and programs conducted at those scales as well across all intervention points.

Measurement and Evaluation. A key strategy of the SUP Phase Out Policy for the Maldives includes the initiation of national data collection mechanisms to identify product packaging of imported products, in order to monitor SUP’s imported into Maldives and setting reduction targets based on the data collected (Section 4.3), and repeated data collection will be necessary for monitoring the increased collection of SUP waste in the Maldives to prevent leakage into the marine environment by 2023. The utility of CCBO’s expertise in assessing gaps and barriers and developing effective policy is evident in this context. Gap Analysis of SWM Laws, Policies, and Enforcement Mechanisms could be implemented to monitor what works, what does not work, and what can be improved in real time. Knowledge of enforcement mechanisms from the initial review could be beneficial for analyzing national level SWM policies.

Promotion of 3Rs through Alternative Product Delivery Formats and Packaging Materials. Section 4.5 of the SUP Phase Out Plan in the Maldives includes the provision of non-plastic items and material alternatives for plastics, including biodegradable plastics. Although efforts to move the country toward biodegradable plastics may be preferred to non-biodegradable plastics, there is widespread misconceptions regarding the implementation of these types of goals. Many biodegradable plastic options require industrial composting facilities so that items can fully degrade under specific oxygen and temperature conditions. Without these facilities, many of these items may persist in the environment despite their biodegradability. Further, these types of products are often confused as recyclable by

common consumers, which can cause unintended contamination in segregated waste streams for recyclables. Finally, biodegradables can also be easily mistaken by the general public as ‘able to break down in the environment’ and so there is a perception that it is permissible to litter items.

Local fishing business and industry engagement. Being an island nation, there is a significant fishing industry in the Maldives, which contributes 11% of the nation’s employment and is more than double that for employment of poor households at 26%.⁴⁸ Further, much of the land area of the Maldives is coral reef, which provides habitat for many fish species but has been shown to exhibit increased disease due to plastic exposure.⁴⁹ As such, the fishing stock, and potentially food security, may be particularly threatened by open dumping of plastic waste into the sea. In development of waste management solutions for the country, it may be advantageous to strategically engage this community and industry for support on policy implementation, financial sustainability of SWM, and improvement of livelihood challenges.

Climate Change and Natural Hazards. The Maldives is one of the lowest lying countries in the world, and with increasing natural hazards associated with climate change like extreme rainfall, severe storms, and rising seas, the nation’s waste management infrastructure is particularly vulnerable to impacts from these. For example, a tsunami in December 2004 resulted in the unintended transport of an estimated 290,000 m³ of land-based waste stored in open dumps to the sea.⁵⁰ Key CCBO activities that may address the challenge of resilient waste infrastructure in the country include technical assistance for strengthening SWM plans, developing local infrastructure solutions, and identifying ways to improve safety conditions for waste workers in the country, all of which offer context-appropriate and anticipatory implementation of 3R strategies in the country.

Gender and Women’s Empowerment. Key activities in the CCBO engagement sites include improvement of livelihoods and gender equality and women’s empowerment. According to a recent country evaluation by the UN Populations Fund, the Maldives is lagging, and the government faces challenges in providing institutional support because of frequent turnover in staffing from political changes that align with more conservative cultural and religious beliefs, existing biases and perceptions in policy employees, and limited capacity for gender and women’s empowerment.⁵¹ There is a perception too that because the Maldives is a high income country, that development assistance in the gender and women’s empowerment are limited.⁵² There may be opportunity to harness the collective action of formalized women’s groups that exist on many of the islands in the Maldives, called a Women Development Committee (WDC). These WDCs are often involved in organizational planning and use of public space, which often includes beach cleanups and solid waste collection.⁵³ A case study on the Maldivian island of Faafu Magoodhoo described in Malatesta et al. (2015) showed that women predominantly managed domestic waste and that institutional efforts at introducing more formalized waste management infrastructure often clashed with the traditional knowledge of local women, suggesting that development of socially resilient waste management systems in the country will likely benefit from inclusive design that aligns with local knowledge. One of the primary actions of the SUP Phase Out Policy for the Maldives is the ban on the import, production, and sale of specific SUP products. The policy report notes that cottage

⁴⁸ The World Bank, 2016.

⁴⁹ Lamb et. al., 2018.

⁵⁰ Joint UNEP/OCHA Environment Unit, 2005.

⁵¹ UN Population Fund, 2020.

⁵² Momsen, 2019.

⁵³ Malatesta et. al., 2015.

industries (which includes small and medium-sized businesses often run by women), will be exempted by the ban as the ban will likely disproportionately impact these businesses. The policy recommends adapting the policy on SUP products for these businesses such that different political measures are in place to support them, however, these measures are not expanded upon the report, suggesting that they are still in development and may need further impact analysis.

It is evident that there is widespread desire regionally, nationally, and in local communities to address the issue of waste management and plastic pollution and there is support from international organizations and NGOs. Ongoing efforts in different local systems, waste sectors, and the national and LGUs could gain from increased coordination between projects and sharing of best practices. It seems the biggest challenge the country faces lie in the difficulties arising from the nation's geography particularly with decentralized waste collection among the dispersed populations and islands, as well as waste treatment and storage in geographical space. Development of island waste management centers and regional waste management strategies have been key areas of focus in recent years for areas outside of the capital city. In Malé, much of the focus is on improving efficiencies and technologies for waste collection and treatment and rehabilitating the Thilafushi dump site. In all areas of the country, plastics are generally imported as goods and so much of the efforts at reducing consumption of plastics is targeted on reducing the volumes and types of products that are brought into the country. These challenging set of circumstances due to varying geographic and population needs is further stressed by the natural environmental threats of extreme storm and rainfall events and rising sea levels which are exacerbated by climate change. Solutions will likely need to be heavily technical but will need strategic financial and political support.

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