

A FACILITATOR'S GUIDE FOR

# Solid Waste Management Planning



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**My Home, My Future**  
Greater Male' Environmental Improvement  
And Waste Management Project  
#MyMaldivesHome



MINISTRY OF ENVIRONMENT,  
CLIMATE CHANGE AND TECHNOLOGY  
REPUBLIC OF MALDIVES



Japan  
Fund for  
Poverty  
Reduction

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**A FACILITATOR'S GUIDE FOR**

**Solid waste  
Management  
Planning**



## Acronyms

ADB	Asian Development Bank
AIIB	Asia Infrastructure Investment Bank
BATNEEC	Best Available Techniques Not Entailing Excessive Cost
BPA	Bisphenol A
BPEO	Best Practical Environmental Options
EC	European Commission
EPA	Environmental Protection Agency
EPPA	Environment Protection and Preservation Act
EU	European Union
ICT	Information and Communication Technology
IEC	Information, Education and Communication
IsDB	Islamic Development Bank
IWM	Island Waste Management
IWMC	Island Waste Management Center
JFPR	Japan Fund for Poverty Reduction
JFJCM	Japan Fund for the Joint Crediting Mechanism
MOECCT	Ministry of Environment, Climate Change & Technology
NGO	Non-governmental Organization
PACCB	Public Awareness and Community Capacity Building Project
PPT	Power Point
PTA	Parents Teachers Association
RAP	Rapid Assessment of Perceptions
RWMF	Regional Waste Management Facility
SAP	Strategic Action Plan
SUP	Single Use Plastics
SWM	Solid Waste Management
TASF	Technical Assistance Special Fund
UNGA	United Nation's General Assembly
WAMCO	Waste Management Corporation
WDC	Women's Development Committee
WM	Waste Management
WMC	Waste Management Center
WMP	Waste Management Plan
WTE	Waste-to-Energy
3R	Reduce, Reuse, Recycle

# CONTENTS

INTRODUCTION	6
PURPOSE	7
MODULE 1 – INFRASTRUCTURE PROVISION & SYSTEM DESIGN	11
Activity 1.1 – PROJECT OVERVIEW	12
NOTES TO THE FACILITATOR	14
RESOURCE SHEET 1.1	15
MODULE 2 – THE BEHAVIOUR CHANGE APPROACH	24
Activity 2.1 – BEHAVIOR CHANGE APPROACH	25
Activity 2.2 – ICE BREAKER ACTIVITY: Take a Stand	26
NOTES TO THE FACILITATOR	27
MODULE 3 – FORMULATION OF THE SWM POLICY	40
Activity 3.1 – SWM LAWS, POLICIES AND PLANS	42
NOTES TO THE FACILITATOR	43
RESOURCE SHEET 3.1	44
MODULE 4 – IEC FOR COMMUNITY ENGAGEMENT AND 3R	51
Activity 4.1 – IEC FOR COMMUNITY ENGAGEMENT AND 3R	52
NOTES TO THE FACILITATOR	53
Resource sheet 4.1	54
Resource sheet 4.2	59
Resource sheet 4.3	64
Resource sheet 4.4	68
Resource sheet 4.5	73
MODULE 5 – SWM PLANNING	76
Activity 5.1 – VISIONING AND TARGET SETTING	77
Activity 5.2 – SWM Planning	78
NOTES TO THE FACILITATOR	60
Resource sheet 5.1	86
Resource sheet 5.2	110



# INTRODUCTION

Over the recent decades, solid waste generation has increased in Maldives driven by population growth, changing consumption patterns, barriers in transportation and rapid growth of the tourism sector. The per capita waste generation is estimated at 1.7kg, 0.8kg and 3.5kg in Male', atolls and resorts respectively. The Greater Male' region is responsible for a significant proportion of waste generation within the country. Organic waste constitutes the bulk of the municipal waste. The majority of this waste is either burned or dumped at sea. Only a few islands practice composting.

More than 38% of the population in the Maldives lives in Zone 3, which includes the Greater Male' Region. This zone suffers from pollution caused by inadequate waste collection and the dumping and burning of waste that compromises the health of residents and the environment. Open dumping and burning of garbage at the 28-year-old, 10-hectare dumpsite on Thilafushi Island (six kilometers from Male') creates an environmental and public health hazard.

Improving solid waste management in the Zone 3 region of Maldives is a top priority of the government. The Greater Male' Environmental Improvement and Waste Management Project aims to establish a sustainable solid waste management system in the region. The project is being implemented by Ministry of Environment, Climate Change and Technology (MOECCT) with financial assistance and technical support from Asian Development Bank, Japan Fund for Poverty Reduction, and the Government of Maldives.

The Greater Male' Environmental Improvement and Waste Management Project aims to transform solid waste management (SWM) in the Maldives. The Project will establish a sustainable solid waste management system in the Greater Malé capital region and its inhabited outer islands by (i) establishing a modern waste collection, transfer, and disposal system, (ii) improving community-based outer island waste management systems, (iii) building institutional capacity for sustainable services delivery, and (iv) raising public awareness in reduce, reuse, recycle (3R) behaviors .

Building on the technical approach to public awareness and behavior change communication adopted by Live and Learn, the aim of this toolkit is to provide guidance for Community Leaders to develop Island Waste Management Plans for sustainable management of solid waste in the Islands.

# PURPOSE

This Toolkit comprises of training modules and materials developed for the Greater Male' Environmental Improvement and waste management project with the intent to assist the local government leaders in solid waste management planning.

The Guide also includes an overview of the behavior change approach that is adopted by Live and Learn Environmental Education (Live and Learn) to use as a basis to formulate the training and community mobilization activities in the islands. The training program aims to guide Island Leaders with Island waste management planning in line with the waste management system implemented by the project.

The Information and tools shared in the training program would emphasize the transformational change that would occur as a result of the activities by the Greater Male' Environmental Improvement and Waste Management Project. The Island Leaders will be guided to develop Island Solid Waste systems and processes to complement the central and regional SWM systems implemented by the project.

The program would also encompass activities and tools that would be provided to the Island Leaders to assist in community engagement and mobilization to bring about the positive change that is required.

The toolkit aims to;

- Provide information about the SWM established by the project, including the hardware and software components.
- Provide information about the behavior change approach adopted by Live and Learn
- Provide guidance to Community Leaders in solid waste management planning
- Create positive values, awareness and responsibility of the community towards waste management



# What is in this toolkit?

This toolkit is presented in SIX modules:

**Module 1:** Infrastructure Provision and System Design

**Module 2:** Behavior Change Approach

**Module 3:** Formulation of the Policy

**Module 4:** Formulation of the Communications Plan

**Module 5:** Solid waste management planning

## Training Schedule

MODULE	DETAILS	DURATION (hours)
<b>1</b>	<b>Infrastructure Provision &amp; System Design</b>	
	Activity 1.1: Project Overview	30 minutes
<b>2</b>	<b>Behavior Change Approach</b>	
	Activity 2.1: Behavior Change Approach	1
	Activity 2.2: Take a Stand	15 minutes
<b>3</b>	<b>SWM Policy</b>	
	Activity 3.1: Solid waste management Policies and Plans	30 minutes
<b>4</b>	<b>IEC for Community Engagement and 3R</b>	
	Activity 4.1: IEC for Community engagement and 3R	30 minutes
<b>5</b>	<b>SWM Planning</b>	
	Activity 5.1 – Visioning and target setting	15 minutes
	Activity 5.2 – SWM Planning	2
Total		5 Hrs



# Who can use this toolkit?

This toolkit has been designed to be used by the community-based facilitators and trainers. These facilitators may come from many organizations including Government Institutions, NGO's and schools.

Live and learn has actively promoted waste management education to communities for more than a decade. Through the use of the training toolkit, Live and Learn's goal is to provide information about the new solid waste management system established by the project and to guide the community facilitators to identify and assist communities to implement action related to the 3R's, leading to behavior change.



## Participants

Participants of this training program would be Island Councilors and Council Office staff, members of the Women's Development Committee, Representatives from Institutions, NGO's and businesses. At least 50% of the participants would be women.

## Facilitators Role

The community facilitators trained in this program will;

- Assist Island Councils to finalize and authorize the WMP
- Assist Island Councils to finalize and authorize the WMP
- Assist in planning and conducting activities in the WMP including community engagement and mobilization activities
- Assist in monitoring and evaluation of island level activities
- act as the focal point for the project activities





# MODULE 1

## INFRASTRUCTURE PROVISION & SYSTEM DESIGN

The focus of this module is to provide information about the infrastructure provision and SWM system design by the project. The information would highlight the objectives and key outcomes of the project, the infrastructure system and its components. Targets and outcomes of Public Awareness and Community Capacity Building activities by the project will also be presented to the participants.

With the information gained in this module, the participants will be assisted to develop broad strategies for the formulation of the IWM plan components and to determine the waste stream flow interventions from the waste sources to the disposal.

### OUTPUT

The output of this activity will be to provide information about the provisions by the project and to enable the participants to identify the targets for the IWM plan. As an initial activity, the participants will be guided to analyze the SWM situation in the island.



## Activity 1.1

### PROJECT OVERVIEW

<b>Purpose:</b>	Provide information about the Project objectives, outcomes, and the key components.
<b>Time:</b>	30 minutes
<b>Materials needed:</b>	Video - Project Overview

#### What to do:

1. Ask participants about what they feel about waste and/ or waste management. Describe in a phrase or a sentence.
2. Discuss about the key solid waste management issues faced by the community including, the facility and equipment, collection and/ or disposal arrangements, processing and management, organization in charge of waste management, rules/ regulation, issues with waste management and opportunities.
3. Show the project overview video which highlights
  - a. The infrastructure system that will be established centrally at the Greater Male' Region and the transport system.
  - b. Infrastructure and equipment that would be provided to the island
  - c. Public Awareness and Community Capacity Building component
4. Ask the participants to list down 5 of their observations from the video presentation, the list could include outcomes, objectives and interesting facts.
5. Participants to present the points that they have listed, 1 point will be presented from each group.
6. Discuss the key outcomes and benefits that the community will gain from the project. Key highlights would be that;
  - a. non-biodegradable waste would be removed from the island in containerized vessels.

- b. waste segregation would be essential for the system to run efficiently
- c. The system will facilitate segregation and removal of recyclable materials
- d. Open burning in Thilafushi has stopped
- e. The state-of-the-art waste to energy facility that would process 500 tons of waste per day. Waste processing in the facility will not cause any harm to the environment
- f. Public awareness and capacity building program that will be carried out on all 35 islands.

## Reflection and Drawing Conclusions

- Once system by the project comes into effect, what kind of waste should be managed at the island level?



# NOTES TO THE FACILITATORS

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Provide an overview of the objectives, components, outputs and outcomes of the project to the participants. The community facilitators will work with the Island Leaders to identify the provisions by the project to the island and to ensure that the SWM plan developed for the island is in alignment with and support the system that will be established by the project.

## **Key points to note:**

- Organic waste materials should be safely managed at the island
- Waste segregation at source is mandatory, therefore, arrangements should be made at the island level to adhere to the regulations by the Government (more information in module xx)
- Air pollution should be reduced at the island, plans should be made to stop burning of waste.
- Island Waste management plan should be developed and implemented after
- Public awareness and communication activities are integral to the design of Island waste management process and implementation.
- Island waste management process to include source segregation, waste disposal/ and or transportation, storage, treatment and final disposal.
- Consult with the public and gain support for island waste management process and waste management fee.

More information about the project could be accessed at <https://mymaldiveshome.environment.gov.mv>



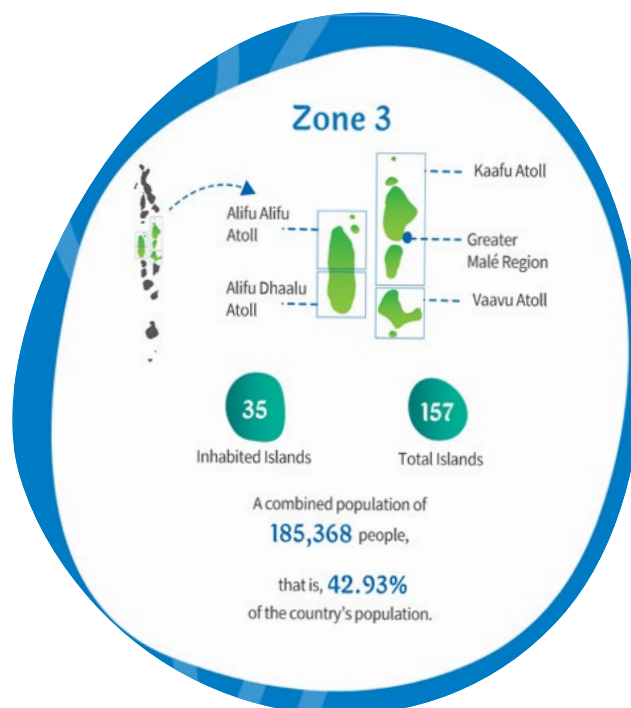
# Resource sheet 1.1

## Project description

The Greater Malé Environmental Management and Waste Management Project aims to establish a **sustainable solid waste management system** for the Greater Malé capital region and outer islands in Alif Alif, Alif Dhaalu, Kaafu and Vaavu atolls – **Zone 3**. The Project includes diverse activities such as Waste Management system designs, procurement of specialist assets, construction of improved island waste management facilities, capacity-building with civic leadership, education, awareness and behavior change campaigns.

The catchment area encompasses central region of Maldives zoned as Zone 3 in the national waste management system. There are 35 inhabited islands in Zone 3 with a combined population of 185,368 people accounting to 42.93% of the country's population.

Figure 1: Zone 3



### Regional waste management facility -Thilafushi

The waste disposal site at Thilafushi is by far the largest solid waste disposal site in the Maldives. Open dumping and burning of garbage at the 30-year-old 10-hectare dumpsite on Thilafushi Island (6 km from Malé) has created significant environmental problems and public health hazards. Plumes of smoke visible from the capital city Malé, the international airport, and surrounding resorts compromise air quality and has posed a daily nuisance to the residents and tourists.

Joint efforts by the Ministry of Environment, Climate Change and Technology, WAMCO and the project have led to a complete stop to the open burning at Thilafushi in 2020. The project is contributing to the development and execution of a long-term plan to remediate the dumpsite and establish the Regional Waste Management Facility at Thilafushi.

### **Thilafushi Waste Management Site - 2018**



### **Thilafushi Waste Management Site – 2020**



### **Waste management in outer islands**

The lack of a waste management system in the region presents a challenge to the inhabited islands. In most of the islands, waste disposal and management services are inadequate and random dumping of waste is widespread. In many of the islands, waste is accumulating into one or multiple open dumpsites and open burning is common. Waste collection services are carried out individually or through community private entities.

## Waste Management Site – K. Himmafushi



## How the project will address the solid waste problem in Zone 3

The Complexities surrounding Solid Waste Management in the Maldives has disabled development of a comprehensive system to address the issue. The project aims to address this issue through:



### *PROCESS IMPROVEMENT*

Improving collection, transfer, disposal, treatment (using advanced waste to energy technology), recycling and dumpsite rehabilitation



### *CAPACITY BUILDING*

Strengthening individual capacities for solid waste service delivery and environmental monitoring



### *PUBLIC AWARENESS*

Improving public awareness and behaviours in 3R principles – reduce, reuse and recycle



## What will be provided by the Project?

- **Establish Regional Waste Management Facility (RWMF)** with a **waste-to-energy treatment plant** in Thilafushi. The state-of-the-art waste-to-energy treatment plant established by the project in Thilafushi will transform waste management in the region. The WTE plant will process 500 tonnes of waste to generate energy. The WTE facility will be equipped with renewable energy generation and will be adapted to the risks derived from climate change.

### Concept design of the waste to energy plant that will be established in the RWMF

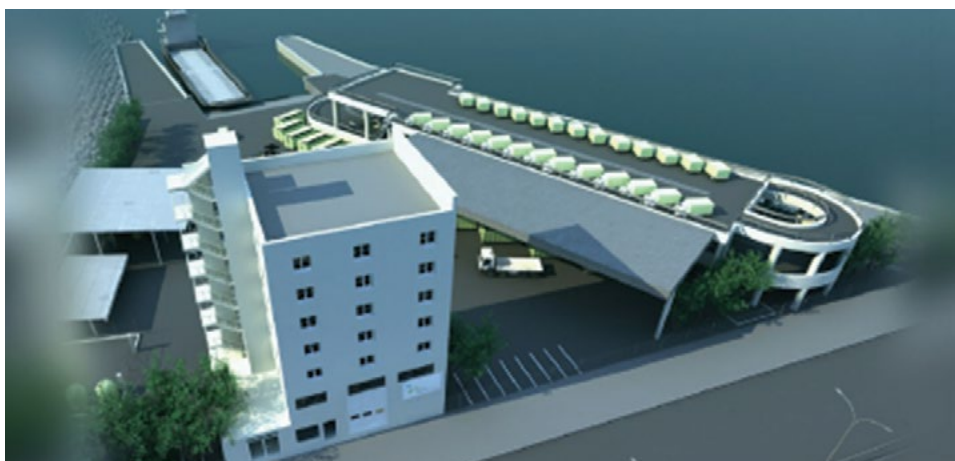


- Establish a modern waste collection, transfer/ transport, treatment and disposal system

Figure 2



- 3 transfer stations will be established in the Greater Male Region



- 3 transfer vessels will be provided to collect, transfer/ transport waste to the RWMF



- Improve community-based outer island waste management systems

Figure 3



- Remediation of Thilafushi waste management site

## The Project will be implemented in 2 phases

### PHASE 1

	<p>Improved waste collection, transfer and disposal in Greater Malé including improved site management and logistics on Thilafushi</p>
	<p>Improved outer island waste management system</p>
	<p>Improved awareness and behavioral change</p>

## PHASE 2



Climate resilient regional waste management facility with WTE plant and landfill



Dumpsite remediation



Institutional capacity & Community awareness

## Purpose of the Project

**Reduce disaster risk** - The project is designed to reduce disaster risk and improve climate change resilience while creating a cleaner environment and reducing greenhouse gas emissions.

**Reduce hazardous dumping** - Reduce the need for open waste burning, mixing of waste and the dumping of dry and wet waste into the ocean.

**Waste segregation and recycling** - The process of waste segregation and recycling, food and household waste collection will radically alter the way waste is disposed of and handled in The Maldives

**Sustainable waste management** - Establish a sustainable solid waste management system that will improve all aspects of industrial, business and household waste management in Zone 3.

**Reduce negative health impacts** - Reduce the negative environmental, lifestyle and health impacts that results from the current waste management process



## Project outputs



**Output 1:** Waste collection, transfer and disposal systems improved and made climate resilient



**Output 2:** Community-based outer island waste management systems targeting poor and women enhanced



**Output 3:** Institutional capacity and public awareness in sustainable waste management strengthened – Raise public awareness in reduce, reuse, recycle behaviors

## Project impacts



Healthy living environment created in Zone 3

## Project outcome



Climate- and disaster-resilient solid waste management services improved

# Implementing Agencies



MINISTRY OF ENVIRONMENT,  
CLIMATE CHANGE AND TECHNOLOGY  
REPUBLIC OF MALDIVES



## Timeline



## Project funding partners

Asian Development Bank (ADB)

Japan Fund For Poverty Reduction (JFPR)

Asian Infrastructure Investment Bank (AIIB)

Japan Fund for the Joint Crediting Mechanism (JFJCM)

Technical Assistance Special Fund (TASF)

Islamic Development Bank (IsDB)

Government of Maldives

For more information about the project please visit  
<https://mymaldiveshome.environment.gov.mv>







## MODULE 2

# THE BEHAVIOR CHANGE APPROACH

This module introduces participants to the behaviour change approach adopted by Live and Learn for public awareness and behaviour change communication programs. The approach integrates general good communication and transformative practices based on advances in the science of human behaviour change. These insights highlight that change is needed in the prevailing assumptions about how target audiences make decisions. Behaviour choices decisions are fully embedded in social networks and are influenced by the context of decisions and the way choices are presented.

The key tenets of behaviour change and the importance of using the approach in community mobilization will be emphasized in the training session.

### COVERAGE:

The focus of the activity will be to highlight the rationale, the value and principles of using the approach in behaviour change communication. Participants will be guided to use the approach in Information, Communication and Education (IEC) activities designed for use in the Island Waste Management Plan.



## Activity 2.1

# BEHAVIOR CHANGE APPROACH

- Purpose:** Use of the Behavior Change Approach in SWM planning
- Time:** 1 Hour
- Materials needed:** PPT 2 – Behaviour Change Approach, paper and markers

## What to do:

1. Present a story portraying desirable SWM practice. The story is of a community influencer who initiated work and successfully engaged her community in SWM activities This would be shown in the first slide in the PPT. The content would highlight “motivating the change”
2. Discuss whether they have community influencers in the island, individual, institution or a community group could work as community influencers to motivate the change.
3. Present an overview of the behaviour change approach and share examples to explain the use of the approach and the strategies
4. Discuss how the behaviour change approach could be used in Information, Communication and Education (IEC) activities in the island.

## Reflection and Drawing Conclusions:

- What could be done in the Island to “Motivate the Change”?

## Activity 2.2

### ICE-BREAKER ACTIVITY: Take a Stand

- Purpose:** Ice-breaker activity – taking a stand on WM
- Time:** 10 minutes
- Materials needed:** 3 cards on which Government, Institution and Individual is written on.

#### What to do:

1. Ask participants to take a stand and show that the responsibility of waste management is with the Government, Institutions or Individuals.
2. Discuss why they took their stand. Share views of the individuals.





# NOTES TO THE FACILITATORS

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## Module 2 - Behaviour Change Approach

Live & Learn's technical approach to public awareness and behaviour change communication campaigns integrates general good practice communication and transformative approaches based on advances in the science of human behaviour change. These insights highlight that change is needed in the prevailing assumptions about how target audiences make decisions. Behaviour choices are not made solely on the basis of fully conscious, deliberate or even rational processing of information. Instead, decisions are fully embedded in social networks and are influenced by the context of decisions and the way choices are presented.

Therefore, conventional tools alone – for example, education and awareness – will not achieve sustained change unless they are fully connected to social context and institutionalised in local organisations, schools, governments and, importantly, the private sector.

For Solid Waste Management (SWM) the connections or partnership between individual decisions, social context and institutionalised systems is particularly important as SWM actions usually contribute to a wider, large scale institutional system of movement and processing of waste. Commitment to principles such as the 3Rs needs to be embedded at all levels of the processes in order for individual buy-in and action.



**Figure 4: Transformative Model**

The transformational approach will be used as a basis to formulate communications and capacity building program to identify best practicable action and to bring changes in people's behaviour. The following diagram describes the features of this approach and gives an indication on the steps that would be considered in the design of the community engagement program and to promote behaviour change.

## OVERVIEW OF THE BEHAVIOR CHANGE STRATEGY

Presented below are the pillars of the behavior change strategy, its characteristics and traits that has been adopted to formulate the Information, Communication and Education Program for community engagement used in this toolkit. The facilitators trained in this program would be encouraged to use this strategy to inform the community and to carry out activities that lead to behavior change.



Figure 5

### Motivate the change



1. Leverage positive emotions.
2. Frame messaging to personal values, identities or interests.
3. Personalize and humanize messages
4. Design behaviorally informed incentives

### Socialize the change



5. Promote the desirable norm.
6. Increase behavioural observability and accountability
7. Encourage public and peer-to-peer commitments
8. Choose the right messenger

### Ease the change



9. Make it easy by removing frictions and promoting substitutes
10. Provide support with planning and implementation of intentions
11. Simplify messages and decisions
12. Use timely moments prompts and reminders

## APPLICATION OF THE BEHAVIOR CHANGE STRATEGY

As an initial activity of the training program, the facilitator would use a case study or video spot as a tool to lead discussion. The tool or concept used could be sourced from a media article, a video or social media story. The content of the tool would be used to promote or “motivate the change” for example, demonstrate the “vision” to work towards using pictures or, share a story of re-use/ repurpose.

IEC Plan developed for use in the Island would incorporate activities to integrate the concepts of the Behaviour change Strategy. The participants will be presented with examples of activities and emphasis points and guided by the facilitator to adopt activities & actions in line with the behaviour change strategy.

## CASE STUDY – AN INDIVIDUAL’S STORY OF CHANGE



Veshi Saafu is with Fathmath Saeed.

August 16, 2019 · 🌐



Sometimes later becomes never. Clean now #veshisaafu #adducity #plogger #plogging #clean #cleanaddu #keepclean #doyourshare #noplactic #climateemergency



when Fathimath Saeed arrived her home city Addu in 2014, she wasn't happy with what she saw and experienced. She was expecting a beautiful, much developed Hithadhoo. On the contrary, she saw poor development and unclean roads and parks. Plastics and trash were thrown everywhere. Fathimath was extremely depressed to see the park in front of her house, full of litter. It would have been a good place for children to play, otherwise. On this thought, on the next Friday she bought some garbage bags and cleaned the park. Council was keen enough to support collect and dispose the waste. Soon after, she found people gathering the Park. Next Friday, the park was full of children playing and grown-ups having a good time enjoying the nature.

From that day onwards, Fathimath started cleaning the park every Friday. She also started plogging, picking trash on her way to jogging, in the thought people will follow. Soon, around 15 women joined her. The idea to formalize and advance her social work grew stronger. She registered an NGO under the name Veshi Saafu in 2019 with 70 members. The NGO aimed to work for Preservation and conservation of the Environment, Reduce Plastic pollution, Tree Planting and Waste Reduction.

Currently The NGO is serving Addu through severall environment related projects, including a project on gifting plants to Institutions and Community members, planting coconut trees in the link road “Ruh fasha” area, Constructing a leisure Park etc.

Veshi Saafu has recently successfully secured funding for a “Plastic Aai Dhurah” Project through Ministry of Youth, Sports and Community Empowerment Grant Aid, and is in the process of securing a plot from Addu Nature Park to revive the medicinal plants in Maldives.

For Fathimath, the biggest challenge is attracting Youth engage with the community activities!



# 1. MOTIVATE THE CHANGE



## 1.1 Leverage positive emotions

Does it make you feel proud to do something good for your community?

A Pride campaign focused on increasing community pride in “clean island environment”, or sustainable behaviors that affect them have found to be effective. Community lead initiatives by few of the island communities in the Maldives have shown to that leveraging the power of pride can lead to greater outcomes where solid waste management can be achieved.

### What is the strategy?

Use positive messaging with emotions like pride, self-efficacy, joy, and gratitude, instead of negative messaging with emotions like guilt, disgust, and fear.

### Let's apply:

- Build a sense of pride to establish a “clean Island”, e.g., forming a social media page to post the achievements or give out free t-shirts or bags that imply membership and also signal pride. This visible signaling also operates as a social norm.
- Deliver key messages (e.g., on required actions) during a ‘peak moment’ of emotion (e.g., moment of joy, celebration, excitement) so it is memorable, for example during a community event where individuals are celebrated.
- Harness local or national pride, engagement and compliance. This could be done through awards for participation by the Island Council for ‘local hero’.

## 1.2 Frame messaging to personal values, identities, or interests

Would you prefer to ‘carry a shopping bag’ or ‘receive a plastic bag from the shop’?

Carry own shopping bag, promoting the behavior as more appealing and of high status.

### **What is the strategy?**

Tailor messages, products, and marketing to make them personally relevant, palatable, and appealing to the target audience. Often, this can mean speaking to the audiences' concern for security, convenience, profit, status, or enjoyment, rather than sustainability in its own right.

### **Now it's your turn to apply:**

- Use religious or national identity prompts or framings to reinforce the ethical aspects to promote waste management actions including cleanliness and economizing.
- Promote alternatives to single use plastic products as more high-status/luxury/desirable rather than as more ethical per se.
- Frame eco-friendly ecotourism initiatives including solid waste management actions to local communities as good money-makers and providing job security.

### **1.3: Personalize and humanize messages**

Have you considered how poor solid waste management in the Island may impact your life, your family, and your home?

Include points from RAP community perception

Making behavior feel personally relevant or tailored to individuals can help to focus attention and energy for a topic as complex and abstract as climate change.

### **What is the strategy?**

Personalize campaigns and correspondence to the individual and their circumstance, and put a human face on campaigns. This includes telling stories of individuals rather than statistics, highlighting consequences that are relevant in the person's neighborhood or context, and focusing on the human story with identifiable characters.

### **Now it's your turn to apply:**

- Frame messages around the unique and personal impacts to a given community, household, or individual.
- Focus on telling a story of a local individual or family negatively affected by this behavior; alternatively tell a story about behavior change around waste management that positively impacted a celebrated individual by helping them support their family.

#### 1.4: Design behaviorally-informed incentives

Would you rather use filtered tap water or continue using bottled water for drinking?

Highlight that water filters would reduce the cost of drinking water used at home in the long run.

#### What is the strategy?

- Use non-financial incentives over small cash incentives, such as symbolic rewards or public recognition, particularly where the behavior is already intrinsically motivated or rooted in social norms, peer pressure or gaining social kudos or altruistic motives (such as volunteering). The aim is that these existing pro-social and social motivations should be amplified, but should not be replaced with financial incentives. If financial rewards are used, they must be large enough to outweigh the damage they may have done in undermining intrinsic motivations - in other words “pay enough, or don’t pay at all.” The same advice applies to sanctions - make sure the fine is big enough, or instead leverage non-financial penalties such as peer pressure or public recognition.
- Use group incentives where payment is made to all members of a group (or to pairs in buddy schemes) so long as all of them comply, or they collectively meet some target.
- Harness loss aversion by highlighting that water filters would reduce the cost of drinking water used at home in the long run.

#### Now it’s your turn to apply:

- Give out non-financial incentives, such as something to put on a boat (a flag/ plaque) in return for being a champion or meeting certain ‘good practice’ standards. The positive signaling effect of the plaque is likely to encourage compliance/ positive behaviors

## 2. SOCIALIZE THE CHANGE







## 2.1: Promote the desirable norm

How would you feel if you found out most people in your institution agreed with a certain practice?

Highlight the desirable norm or behavior of individuals or institutions.

### What is the strategy?

Highlight the desirable norm (e.g., “9 out of 10 people do...”) and cases of success or good behavior. Alternatively, emerging research suggests that where the behavior we wish to promote is not yet normative, highlighting the increasing prevalence or frequency of the desired behavior (called a dynamic norm) can also be effective (e.g., ‘more and more people are reducing their meat consumption’).

### Now it's your turn:

- Where desirable behaviors are not yet normative (e.g., carry own shopping bag to reduce plastic pollution), we can either highlight the dynamic norm (“more and more people... “, or target the highest users and draw a social comparison (“The great majority, 80%) of people in your island are using shopping bags).
- Where the desirable behavior is normative, we can target non-compliers and highlight the social norm (“9 out of 10 are using reusable water bottles”).

## 2.2: Increase behavioral observability and accountability

Would you try harder if your performance was made public?

Publish data to show amount of waste generated or processed by institutions & businesses. Show whether there is any reduction in the amount of waste generated or processed.

### What is the strategy?

There are several ways we can increase the observability of behavior, both to

socially ‘police’ undesirable behavior, and to socially reward good behavior. For example, post data in a public location to show who is contributing most to waste management).

Other mechanisms such as non-financial rewards or public recognition can act as a social incentive. Actual or implied surveillance, for example through cameras, published audits, or increased bureaucratic transparency can also help by leveraging the social cost of transgressing.

### Now it's your turn:

- Make community leaders more publicly accountable. If a Island Council President pledges to do something, there need to be social costs to not following through. For example, setting up mechanisms of tracking their efforts and keeping the community aware of them could be highly effective.
- Set up a public display board on ‘performance’ in adhering to waste management behaviors (e.g., compliance among businesses).
- Paint signage on boats for those who are registered. Make the signage contingent on compliance with best practice.



### 2.3: Encourage public & peer-to-peer Commitments

Would you commit to refusing plastic straw?

Cafes/ Restaurants could give the option commitment to the customer. They could have a sign on the table to remind them their commitment. The café/ restaurant could keep a track, maintain record of the number of customers who opt the option.

#### What is the strategy?

Encourage people (whether consumers and companies, or community leaders) to make public pledges and commitments. Added gravitas through ceremony or written signatures can further strengthen the commitment. Similarly, buddy systems or group incentives (where rewards are only gained if someone else, or a whole group, comply) can encourage peer-to-peer enforcement where regulatory enforcement may otherwise be difficult.

### Now it's your turn:

- Introduce the obligation of making a public pledge to adhere to the sustainable standards of the organization members, etc.
- Reward members of a community or organization (or pairs of colleagues or friends) in return for certain objectives being met by all (or both). For example, this could apply to attendance at local training events, or achieving a community-wide transition to new practices or targets.
- Provide recognition or non-financial rewards to businesses who have pledged and committed to solid waste management actions such as waste segregation or reduction of waste from their business. By publicly ratifying and recognizing their efforts, they are more likely to adhere to them.

### 2.4: Choose the right messenger

Whose advice would you rather follow?

Identify a local business, leader or influencer who the community admires. Work with the business or individual to promote key messages.

### What is the strategy?

Identify who (or which organization or brand) will be most influential in promoting a certain message, product, or practice. We generally respond to people of authority, and those with whom we identify. First, by 'authority,' we refer to those with credibility (e.g., experts or those who have adopted the behavior themselves), or those with some degree of power over us (including government, local leaders and parents, children). Second, we care about those with whom we identify, which typically includes our peers (who are relatable and trustworthy), or indeed celebrities (who we admire).

### Now it's your turn:

- Get spiritual leaders to speak about behaviors that have religious motivations.
- Harness 'network effects' by getting those that have already adopted a certain practice/behavior to advocate





### 3. EASE THE CHANGE

#### 3.1 Make it easy by removing frictions and promoting substitutes

What if the choice you make, makes it easier and more sustainable?  
Make the desired behavior more convenient and accessible to encourage an action. You can also add more hassle to the undesirable behavior to discourage an action., e.g., individuals or businesses who make their own arrangement to take waste to the waste site, need to pay a higher rate.

#### What is the strategy?

Make the desired behavior more convenient and accessible to encourage an action. You can also add more hassle to the undesirable behavior to discourage an action. There are many ways we can make the good behavior easier: streamline bureaucratic processes; partially complete forms; shorten wait-times; simplify instructions; provide new technologies; and promote appealing substitutes to undesirable behaviors.

#### Now it's your turn:

- Lots of bureaucratic processes exist. Provide opportunities for quick and easy trials to apply behavioral insights.
- Put recycling and compost bins in easier-to-access places than trash bins to reduce plastic pollution and increase composting of food waste.

#### 3.2: Provide support with planning and implementation intentions

Would planning motivate you to recycle more at work?  
A tele-company in the Netherlands wanted to reduce its environmental impact through employees recycling more paper and plastic. They conducted an experiment to compare the effectiveness of offering recycling bins and the opportunity to form

implementation intentions to recycle. For employees who spent time planning out their recycling intentions, waste going to landfill decreased by 75-80 percent as compared to employees who did not make a plan, and this behavior persisted in the months following the intervention.

### **What is the strategy?**

Implementation intentions are a specific type of planning tool that specify when, where, and how a person intends to complete a goal, giving them a premeditated strategy for overcoming likely barriers. Providing timely feedback can also help people track and validate their progress to maintain motivation and help re-direct efforts.

### **Now it's your turn:**

- Develop pre-specified plans for how to improve waste management and distribute these exercises in the community through workshops, leaflets, or community assemblies.
- Reduce, Reuse and recycle; prompt people to plan their “plastic free” events, days or months.
- Tackle illegal dumping and littering by providing strategies for ‘positive’ reactions to common situations, e.g., people are asked to develop implementation intentions in the form of “if I see someone do X, I will....”).

### **3.3: Simplify messages and decisions**

What environmental messages have stuck with you the most?

Recently there has been a movement to ban and restrict the use of plastic straws. Despite the debate over its real impact on ocean plastics, there is no denying that the specificity and simplicity of this one action has led it to become highly popular with businesses and municipalities around the world. Catchy slogans such as “the last straw” and “stop sucking” have become rallying cries. Global companies such as Starbucks and McDonalds are just some of the major players who are phasing out straws in their stores, and the movement is only spreading.

### **What is the strategy?**

Simple, straightforward messages are more actionable than complex ones. These can include rules of thumb, checklists, mnemonics, decision trees, and calls to action that serve as ‘decision aids’ that simplify information and choices.

### **Now it's your turn:**

- Put pictures of recyclable and non-recyclable items on bins to reduce contamination of waste and pollution from littering.

### 3.4: Use timely moments, prompts, and reminders

Have you ever attempted to start a habit right after a life moment or transition?

Moving houses and neighborhoods therefore represents a temporal landmark for people to form aspirations and goals with regards to sustainable travel.

#### What is the strategy?

Target periods of transition or provide prompts and reminders at timely moments to capture people's attention and spur people to action when it's most needed. These can be especially helpful during 'visceral states' (e.g., when angry, in pain, or hungry) that can cloud judgment and bias behavior.

#### Why does it work?

Temporal landmarks (e.g., a new job, beginning of the week) that represent new beginnings make us more likely to form aspirations and take steps towards a goal. They help us to leave prior, failed attempts at change in the past and create a new image of our present and future selves. New Year's resolutions are the most famous example of aspiration formation at a temporal landmark. Additionally, the extent to which we are receptive to certain information varies significantly from moment to moment, and so timing is key.

#### Now it's your turn:

- Target people when checking in to the hotel/ guest house for their holidays against waste management actions.
- Provide information of/ or mark significant areas of the island and the ocean including sensitive habitats with clear signs, tape, and/or fencing as a visible reminder. Put up signs with appropriate actions to protect the environment from littering/ or pollution.





## MODULE 3

# FORMULATION OF THE SWM POLICY

With an analysis of existing policies and ordinances and the recommended interventions as bases, the Island Council will be able to develop its priority policy support agenda and work out an effective enforcement strategy for SWM.

This Module emphasizes the necessity to have a strong policy support for the implementation of the IWM plans to ensure their compliance with the requirements of the National laws, regulations, and plans. This component identifies the specific actions in the plan needed to be embodied in ordinance(s) and define the corresponding enforcement mechanisms that must be put in place. Policies/ordinances should incorporate good governance principles, making sure that the practices identified and observed during the planning stage are carried through to the implementation phase.

A brief input presentation on a walk-through of the overview of National laws, Policies and plans will be used in this module.

Considering that many Island Councils have ordinances passed before and in practice, this activity would allow them to review these ordinances and recommend how these may be updated and made compliant with the National requirements. They will likewise have hands-on experience in enhancing these ordinances by integrating into them provisions on transparency, accountability and participatory decision-making. Thus, it will be insufficient to only identify the set of ordinances that need to be enacted to support the IWM plan. It is equally important to establish who will be accountable for specific decisions and actions, and to provide (among others) procedures for greater stakeholder participation.



## OUTPUT

The output of the module is a draft SWM policy, which is one of the major components of the IWM plan. Part of the exercise would be gaining knowledge about National ordinances, the list of the priority ordinances that will have to be enacted to support implementation of the IWM plan and the enforcement mechanisms.

Upon the completion of this activity, the Island Council can initiate the preparation/ revision of priority ordinances or the formulation of a comprehensive SWM ordinances to be implemented in the Island.





## Activity 3.1:

# SWM LAWS, POLICIES AND PLANS

**Purpose:** Reflect on the SWM laws, policies and plans and formulate ordinances for the Island.

**Time:** 30 minutes

**Materials needed:** PPT 3 - SWM laws, policies and plans and waste segregation cards.

## What to do:

1. Provide information about the SWM laws, policies and plans using the PPT Presentation which includes key statements, sections and highlights in the Environment Protection and Preservation ACT, Strategic Action Plan (SAP) and the Single Use Plastic (SUP) ban policy.
2. Highlight the amendment brought to SWM regulation which has made waste segregation mandatory and present the waste streams.
3. Divide the participants into 2 groups. Provide the waste segregation card sets to the groups and ask them to sort / segregate waste in line with the instructions provided.
4. Ask participants to present the results. Discuss about further streams that would be facilitated by the project including special waste and hazardous waste. Emphasise the need to start waste segregation at source and discuss the reasons why it is so crucial.
5. Show the waste segregation video by the Ministry of Environment, Climate Change and Technology.
6. Discuss about integrating policy actions in the island SWM ordinances and conducting community consultations or public meetings on draft ordinance before it is finalized.

## Reflection and Drawing Conclusions

- How should regulations be enforced at the Island?

# NOTES TO THE FACILITATOR

## Module 3- SWM Plan Policy Support

### I. SWM ORDINANCE FORMULATION

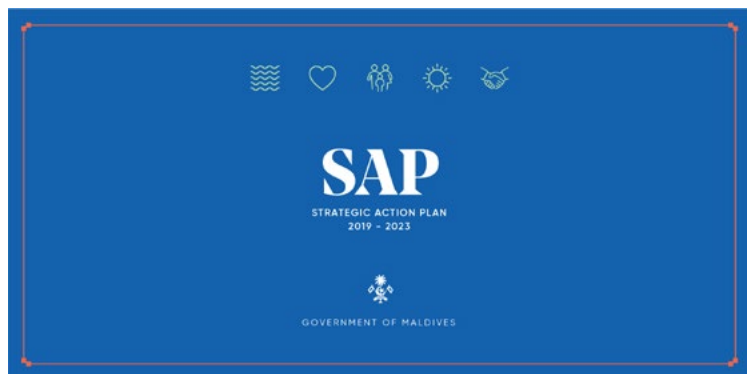
- Review and analyze existing ordinances of Island Council on SWM & Identification of proposed ordinances
- Conduct consultations or public meetings on draft ordinance
- Refinement/ finalization of proposed ordinance

### II. PRIORITY SWM ORDINANCES

- Establishment of SWM process and priority ordinances
- Establishment of enforcement mechanisms
- Determination and collection of SWM Fees
- Prohibited Acts, Fines and Penalties under the local regulation

**Note:** Sample ordinances that could be adapted for use by the Island Council is included in Module 5

#### **Some Important Documents :**



# Resource sheet 3.1

## Policy Directions

Provision of solid waste systems and solid waste management arrangements in the islands are governed by a range of laws, policies, and regulations, the most important of which are listed below with reference to goals and targets determined at the National level that have direct and indirect links to the service delivery. Strategic Action Plan (2019-2023) outlines priorities in terms of the Government's development efforts and targeted achievements. Solid Waste Management sector is identified under the priority area Jazeera Dhiriulhun - Environmental Protection and Preservation. The section presented under 4.5 – Waste as a Resource includes a list of targeted strategies and Actions that would be implemented to develop the sector.

STRATEGY	ACTION
<i>Strategy 1.1: Review and revise the current legislative, regulatory and institutional framework on waste management</i>	<b>Action 1.1a:</b> Review and enact Waste Management Law
	<b>Action 1.1h:</b> Develop a framework for extended producer responsibility or other product stewardship programs
	<b>Action 1.1i:</b> Develop and implement a National Recycling Strategy
	<b>Action 1.1j:</b> Enforce regulation on Anti Littering through stricter fines, policing and strengthened reporting mechanisms
	<b>Action 1.1k:</b> Develop and implement an SOP for waste segregation at the household level in all administrative islands
<i>Strategy 1.2: Strengthen the role of EPA in regulatory framework formulation, implementation, and monitoring of wastemanagement practices</i>	<b>Action 1.2a:</b> Establish an inspectorate at EPA for monitoring and inspection of waste management activities
<i>Strategy 1.3: Establish a mechanism for waste collection, storage and management at the island level</i>	<b>Action 1.3b:</b> Develop a framework to conduct waste audit at island level
	<b>Action 1.3c:</b> Revise the current design guideline for island based management centres (IWMCs) based on the characteristics, waste audits, and socio-economic needs of the host island integrating solar power generation systems



	<b>Action 1.3d:</b> Revise architectural design of the Island Waste Management Centers (IWMCs) to integrate solar power generation systems to operate tools and machinery
	<b>Action 1.3e:</b> Establish a feasible fee structures and fee collection methods at island level
	<b>Action 1.3f:</b> Provide guidance for Island Councils to integrate waste collection as part of the Integrated Utility Service provision of the Government
	<b>Action 1.3g:</b> Provide technical support to formulate Island Waste Management Plans and determine appropriate waste management tools and machinery
	<b>Action 1.3h:</b> Strengthen the capacity of electricity grids in inhabited islands to accommodate additional demand created by waste management equipment, tools and machinery at the Island Waste Management Centres
	<b>Action 1.3i:</b> Implement a mechanism to extract nonbiodegradable waste generated in inhabited islands and ensure safe transportation to Thilafushi annually until the Regional Waste Management and Treatment Facilities are Operational
	<b>Action 1.3j:</b> Coordinate with the relevant authorities to regulate design and safety features on marine vessels transporting waste
<b>Strategy 1.4: Strengthen waste collection and management in Greater Male' Region</b>	<b>Action 1.4a:</b> Roll out household waste segregation scheme
	Action 1.4b: Equip waste collectors with required equipment and resources to collect and transport different waste streams for treatment
	Action 1.4c: Identify ways to expand plastic interception in the Greater Male' Region
<b>Strategy 1.5: Strengthen waste management through evidence-based policies</b>	Action 1.5a: Conduct comprehensive waste audits across all islands to identify volume of different waste streams and to formulate reduction targets
	Action 1.5b: Develop a national database and establish methods for information collection, collation, access and dissemination to ensure its comprehensiveness and public availability
<b>Strategy 1.6: Establish Regional Waste Management and Treatment Facilities (RWMT Facilities)</b>	Action 1.6a: Develop and operationalise RWMT Facilities with a key focus on recovery and recycling, in line with the National Spatial Plan

	Action 1.6b: Develop intermediary treatment facilities and/ or transfer stations where a full-scale RWMT Facility is not financially and technologically feasible
	Action 1.6c: Develop Best Practical Environmental Options (BPEO) methodology for selecting technologies through Best Available Techniques Not Entailing Excessive Cost (BATNEEC)
<b>Strategy 1.7: Expand and Implement waste-to-energy and expand waste-to-wealth initiatives in local communities</b>	Action 1.7a: Conduct research to identify technologies for converting waste to wealth that is cost effective and appropriate for the Maldivian context
	Action 1.7b: Assess potential mechanisms to produce refuse derived fuels and study market opportunities to sell them for co-combustion
<b>Strategy 1.8: Increase employment and entrepreneurship potential in the waste management sector through support mechanisms for SME start-ups and existing businesses to encourage innovative solutions for waste reduction, reuse, recovery, and management</b>	Action 1.8a: Identify skills needed to manage waste and to promote waste as a resource and design short term training programmes to develop skilled personnel
	Action 1.8b: Identify the services required in the waste management system that can become a potential Private Sector Participation (PSP) business opportunity and disseminate information through the BCs to potential entrepreneurs

SAP also outlines the following strategy that is related to SWM;

Strategy 6.1 - Increase awareness among policymakers, civil servants, NGOs and Councillors on use of chemical and impacts on human health and environment

# Single Use Plastic Phase-Out Plan (2020 – 2023)

Phasing-out single-use plastic in Maldives by 2023 is a commitment of the Government of Maldives, as per the Maldives Parliamentary Resolution of 2019 (1- 2019/ /EC) and His Excellency President Ibrahim Mohamed Solih's declaration at the 74th session of the United Nation's General Assembly (UNGA) in 2019.

This phase-out plan is a national initiative to phase out the production, import and consumption of certain single use plastics into the Maldives and promote the use of sustainable alternatives, in the effort to protect human health, and the vulnerable marine environment of the country.

MOECCT declared a list of 8 items that will be prohibited to import from 31st December 2021 as follows:

- Single-use plastic-based drinking straw
- Single-use plastic-based plates, cutleries and stirrers
- Plastic shopping bags below 30×30 cm
- Imported sweet areca nuts in plastic wrapping
- • Single-use plastic drinking cups below 250ml
- Cotton bud with plastic stems
- Shampoo, soap, conditioner, and lotion bottles in plastic packaging that are 50 ml and below
- All imported water packed in plastic bottles below 500 ml
- MOECCT emphasises the need to promote strategic awareness through educational campaigns, with targets to reduce the consumption of single-use plastics, and nudge consumers to shift away from SUP's, and use sustainable alternatives.

# National Solid Waste Management Policy (2015)

States the following

- Implement the 3R concept in Maldives in order to reduce waste
- Identify ways to aware people at all level about proper waste management
- Assign the Ministry of Environment as the regulatory body that oversees all works related to waste management and establish waste management systems in all islands
- Establish a plan to manage waste in all the islands and implement the waste management plan
- Establish legal framework and ensure effective implementation of the framework
- Review the regulation regarding management of clinical, infectious and dangerous/ hazardous waste and implement this regulation
- Keep a statistical record of waste at island and national level and disseminate this information
- Establish environmentally sound waste management systems in inhabited islands accordingly and provide required resources
- Conduct trainings for best waste management practices and continue to do in a sustainable manner
- Conduct and update accordingly, the inventory of the waste management systems in inhabited islands
- Establish regional waste management facilities and make necessary arrangements to transfer and manage excess waste from those islands to regional waste management facilities
- Conduct research on latest waste management technologies
- Encourage industrial islands to develop waste management plans, and monitor its progress
- Establish a national waste management trust fund
- Environment Protection and Preservation Act (EPPA) 4/93 is the main legal instrument for Environmental management in the Maldives. EPPA states that the natural environment and its resources are a national heritage that needs to be protected and preserved for the benefit of future generations. The protection and preservation of the countries land and water resources, flora and fauna as well as the beaches, reefs, lagoons and all-natural habitats are important for the sustainable development of the country. EPPA states the following in relation to solid waste management;



### **Section 7 - Waste Disposal, Oil and Poisonous Substances**

(a) Any type of waste, oil, poisonous gases or any substances that may have harmful effects on the environment shall not be disposed within the territory of the Maldives.

(b) In cases where the disposal of the substances stated in paragraph (a) of this clause becomes absolutely necessary, they shall be disposed only within the areas designated for the purpose by the government. If such waste is to be incinerated, appropriate precaution should be taken to avoid any harm to the health of the population.

### **Section 8 - Hazardous/ Toxic or Nuclear Wastes**

Hazardous/ Toxic or Nuclear Wastes that is harmful to human health and the environment shall not be disposed anywhere within the territory of the country. Permission should be obtained from the Ministry of Transport and Shipping at least 3 months in advance for any transboundary movement of such wastes through the territory of the Maldives.

The Waste Management Regulation (Regulation number 2013/R-58) aims to implement national policies regarding waste management. In this regard, this regulation shall implement these policies to conserve the environment by:

- Minimising the direct and indirect negative impact caused to human health and the environment due to waste.
- Compiling the standards to be maintained in relation to waste management.
- Establishing an environmentally friendly, safe and sustainable waste management system through an integrated waste management structure
- Encouraging minimising, reusing, recycling and recovering of waste.
- Implementing polluters pay principle.
- Introducing extended producer responsibility.





# MODULE 4

## IEC FOR COMMUNITY ENGAGEMENT AND 3R

This Module will assist the participants to identify the priority Information, Education and Communication (IEC) activities required to increase SWM awareness and support efforts on solid waste management best practices, including waste reduction, reuse and segregation at source. The Island Council will be provided guidance by the project to develop an IEC program and use the materials developed by PACCB.

The Module aims to facilitate the development of IEC activities that will support the IWM strategies and interventions identified in the SWM plan.

The need to have a research-based communication plan will be emphasized to the participants. A good communication plan is based on an analysis of the information needs of audience segments and the materials used need to be field-tested to ensure appropriateness and relevance. Data derived from the Rapid Assessment of Perceptions Study conducted by PACCB will be presented to the participants to highlight the insights, awareness, and perceptions of the stakeholders.

The facilitators will guide the participants to develop community awareness and mobilization activities based on “doable” activities that can be implemented while the plan is undergoing refinement.

### OUTPUT

The expected output of the module is a Communications Action plan, which will be one of the major components of the IWM plan. It will have the following elements: Objectives (which will be based on the assessment of issues) by target audience; key messages; /medium; responsibility centers; and estimated costs.

Another output would be a one-year action plan that spells out the immediate next steps that Island Council could pursue as part of initial IEC implementation activities. The action plan will provide details on the priorities of the overall communications plan.

## Activity 4.1

# IEC FOR COMMUNITY ENGAGEMENT AND 3R

**Purpose:** Share information about 3R best practices and guide the development of a communication plan

**Time:** 30 minutes

**Materials needed:** PPT 4 – SWM Issues, plastic pollution, waste management hierarchy, 3 R benefits, circular economy and zero waste, paper and markers

### What to do:

1. Discuss about the importance of providing information and educating the public on SWM.
2. Present information about SWM issues and plastic pollution and the effects it has on the environment and on human health.
3. Present the waste management hierarchy, 3 R benefits, circular economy and zero waste and highlight how it is related to the island context. Emphasise the need for waste segregation at source in order to provide better opportunities for recycling; contributing to the circular economy.
4. Point out the need to promote food waste cycling or composting as a way to responsibly manage food waste in the island. Discuss the willingness to participate in composting and who could lead the activity at the island level.
5. Highlight the importance of aligning choices made and behaviours to 3R.
6. Discuss how to organize zero waste events at the island/ institutional level.
7. Participations will work in groups and list down how waste could be reduced and reused as an individual, at home, at workplace and at island level.
8. Participants will present their ideas.

### Reflection and Drawing Conclusions

- How to “Socialize the Change”?



# NOTES TO THE FACILITATOR

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## Module 4 - Planning Communication Activities

### I. OBJECTIVES OF THE ACTIVITY

- Provide information that would help in drafting IEC plan to support IWM strategies/ interventions (sample is included in Module 5)

### II. CONSIDER THE FOLLOWING.

1. Engage waste generators (such as households, establishments, institutions) to promote waste segregation and 3R behaviors
2. Reach out to and engage Influencers (such as the schools and NGO's) for waste generators to change SWM practices
3. What is to be promoted & What is the message?
  - Identify the specific action or ideal behavior that needs to be promoted
  - Identify the specific message or messages. Reminder: make the message simple, specific and clear focus on benefits
  - Who are the target audience? - Identify the target audience, both primary and secondary. How to formulate a message that fits their needs
4. What medium to use?
5. What are your available resources? - Determines available IEC resources – Resources by MOECCT and the project will be shared with the Island Leaders and community facilitators

# Resource sheet 4.1

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## WASTE- WE ALL PRODUCE IT!

We all produce waste as a part of everyday living, but we do not normally think too much about it. We just dispose our waste in the Island Waste Management Centre, or waste management site every day or arrange for someone to pick up the waste and take it away.

Until a few generations ago, waste was not a major problem in Maldives, mainly because people did not produce much waste and whatever produced was mostly organic in nature. In the past:

- People utilized resources much more efficiently. For example the coconut palm was used extensively, traders carried goods like vegetables in hand-woven containers.
- Things were made and packaged with organic materials, now many things are made from imported materials, such as plastic.
- Products were made to last. Now we are becoming a 'disposable or a throw-away society' with products are made to be replaced with in a short period of time.
- The population was smaller than it is now.

## WHAT IS WASTE AND HOW TO DISPOSE OF OUR WASTE

Wastes are objects or materials that are unwanted or unusable to anyone. We buy materials or things and use them until they become of no use to us, and it becomes waste! We then throw them away. A waste material can be anything which is worn or damaged, defective, or is worthless or of no use to us.

Some types of waste are easier to manage than others. Some wastes can be recycled, others can be burnt or composted. Some types of waste are also more harmful to the environment and human health than others. Therefore, different types of waste need to be managed in different ways.

There are two main categories of waste, that is, organic and inorganic waste

**Wastes are objects or materials that are unwanted or unusable to anyone.**

**Two main categories of waste**

**Organic waste** VS **Inorganic waste**

 #MyMaldiveshome

## ORGANIC WASTE

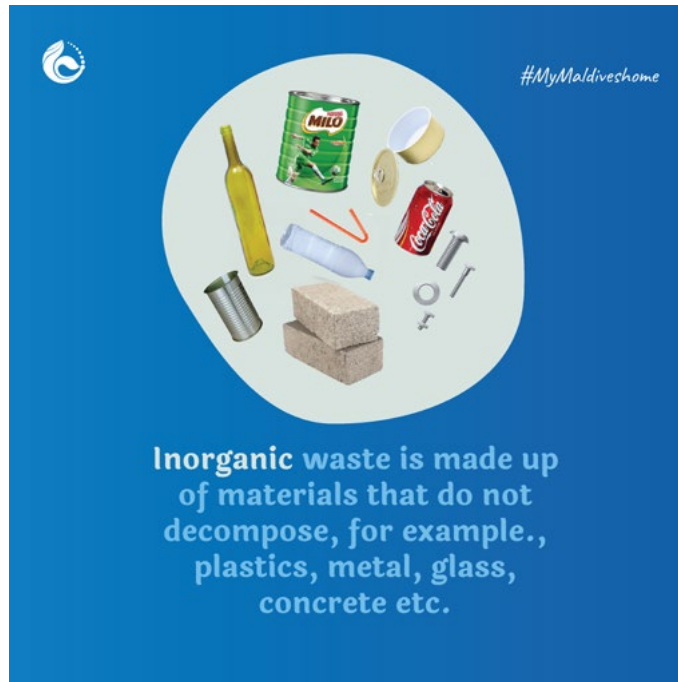
Organic waste comes from plants and animals. Organic waste includes household food waste, green waste (leaves, twigs etc) cardboard, paper and certain wastes arising from commercial and industrial sources (e.g. sawdust from carpentry). Some kinds of organic waste will easily decompose and breakdown naturally (e.g. kitchen waste). Organic wastes such as cardboard and wood will take longer to decompose.

**Organic waste comes from plants and animals, for example., food waste, green waste (leaves, twigs etc) cardboard, paper etc.**

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## INORGANIC WASTE

Inorganic waste is made up of materials that does not come from plants or animals (e.g. plastics, metals, glass etc). This waste does not readily break down (decompose), such as demolition waste such as building rubble, bricks, concrete, plastics, metals, glass etc.



Managing our waste is everyone's responsibility. Some types of waste are harmful to the environment and human health. Government, industries, institutions, and the communities, all need to work together to manage our waste. As a first step to support waste management, we need to segregate our waste!





## WASTE SEGREGATION

The Government has announced its priorities for waste segregation by the 5th amendment to the Waste Management Regulation 2013/R-58.

## HOW TO DISPOSE OF WASTE IN MALE CITY

For Male' City there are 3 categories of waste segregation.



# HOW TO DISPOSE OF WASTE IN INHABITED ISLANDS, INDUSTRIAL ISLANDS AND RESORTS

For Inhabited Islands, Industrial Islands and Resorts there are 4 categories of waste segregation.



Note: Bulky waste shall be disposed of separately under a call and pick up service arrangement.



# Resource sheet 4.2

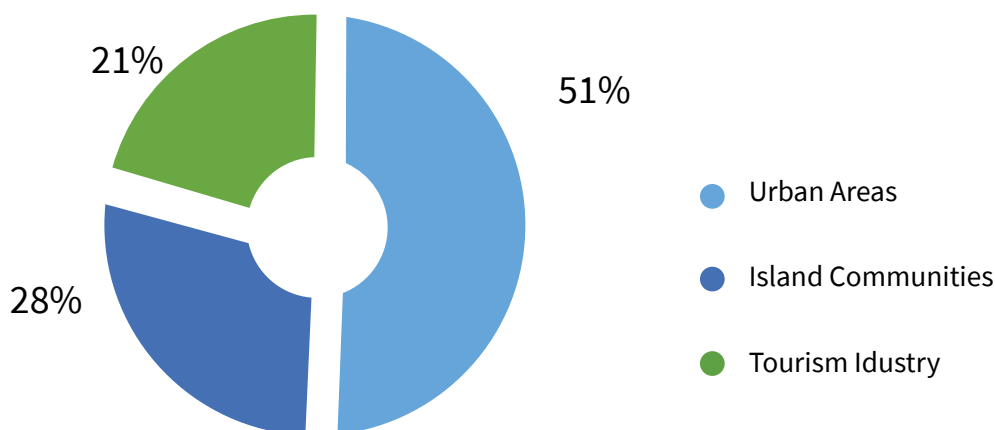
Over the recent decades, solid waste generation has increased significantly driven by population growth, changing consumption patterns, barriers in transportation and rapid growth of the tourism sector. Records of the Ministry of Environment, Climate Change and Technology show that the average rate of waste generation in Male' was approximately 1.7kg per person per day, in the atolls it was 0.8kg per person per day and at the resorts it was 3.5kg per person per day!

Waste generated in urban areas are considerably higher and the Greater Male' and islands in Zone 3 are responsible for a major proportion of it. It is estimated that the amount of waste generated in Zone 3 is about 800 tons of mixed solid waste per day. This amount is expected to grow to 924 tons per day 2022, due to the rapid urbanization and tourism development in the region.

## AMOUNT OF SOLID WASTE GENERATED AND THE ISSUE OF PLASTIC

It is estimated that **365,000 tons** of municipal solid waste is generated in per year in the Maldives, that is approximately 1000 tons per day<sup>1</sup>. **Plastic waste** constitutes an estimated 43,134 tonnes or **12%** of the total waste generated, while **PET bottles** in the beverages industry is about **10%** of the total plastic waste. Import of plastic has grown on average 17% between 2014 and 2018. Around 150 million biodegradable plastic bags, 16 million plastic bags were imported in 2019<sup>2</sup>.

Figure 6



MEE (2016) State of the Environment Report, Ministry of Environment and Energy, Male', Maldives

<sup>1</sup>Maldives Clean Environment Project (2017) Ministry of Environment and Energy, Male' Maldives

<sup>2</sup>Maldives Ocean Plastics Alliance (2019), Socio-economic Impact of the use of PET in the Maldives, Male', Maldives

**PET BOTTLES** – Most soft and fizzy drinks, water, packaging for other food products and oils are packed in polyethylene terephthalate (PET). Local production of PET bottles stand at 143 million bottles per year /3300 tons. PET is the most widely recycled plastic product worldwide as it can be recycled into a wide variety of products

**IMPORT OF PLASTIC PRODUCTS** – In 2019, 143,293,343 bottles were produced in the Maldives, this is equivalent to 3300 tonnes; and about 100 tonnes of plastic is imported as beverages.

In addition to PET bottles, Maldives imports a significant volume of other plastics including plastic bags, food packaging, wrappers, pipes, home appliances, products used in beauty and hygiene etc.

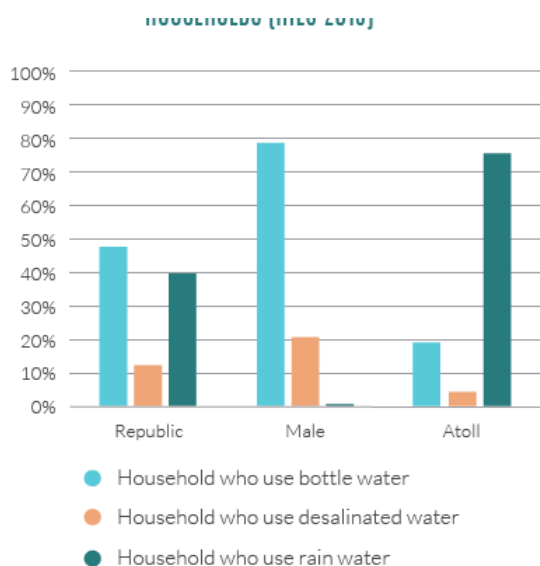
Parley Maldives focuses on and has contributed significantly to remove plastic waste from our islands. Statistics show that they have exported 1648370kgs of plastics from the Maldives, as a result of their joint efforts with 88 schools, 46 councils, 48 resorts, 46 guesthouses, 67 boats and WAMCO.

However, it is estimated that only a small proportion (1%) of total plastic waste has been removed from the environment in the Maldives! More than 3,000 tons of PET bottles per year are either burnt or thrown away (not exported as a valuable material that could be converted into a useful object). It is estimated that Maldives incurs a lost revenue of approximately MVR10.8 million (equivalent to \$700,000) per year due to this.

A total of 57 million bottles or 125 million litres of bottled water is consumed in Maldives by households at home per year<sup>3</sup>. The graph below shows the percentage of bottled water for drinking in Male’ at 79%, and a lower percentage for atolls at 19%.

## DEMAND OF BOTTLED WATER

**Figure 7**  
TYPES OF WATER CONSUMED BY HOUSEHOLDS (HIES 2019)



Percentage of Households Using Mineral/ Bottled Water for Drinking

<sup>3</sup> Household Income and Expenditure Survey (2019) National Bureau of Statistics, Male’, Maldives

<sup>4</sup> <https://littlethings.com/>



People are often sceptical of drinking tap water and think it is not as safe as drinking bottled water. Tap water provided via the water network systems in the Islands are safe to drink, as they meet the WHO standards for drinking water. Some people refuse to drink tap water simply because they do not like the taste.

## THERE ARE SOME IMPORTANT REASONS WHY WE SHOULD NOT DRINK BOTTLED WATER.

### **1. PLASTIC BOTTLES LEACH CHEMICALS.**

You have probably noticed that plastic water bottles become softer after being left in the sun. The plastic could fully melt if exposed to enough heat. Bottled water can sometimes taste a little different, a bit plastic-y, and that is not just a coincidence. According to research studies conducted in this area, chemicals in plastic products can leach in and contaminate the container's contents. The biggest culprit of this is BPA, an industrial chemical in plastics that acts like a hormone and can impact the brain development of babies. Even plastics that are labelled BPA-free often test positive for other dangerous compounds<sup>4</sup>.

### **2. A LOT OF BOTTLED WATER COMES FROM THE TAP ANYWAY.**

Commercials for bottled water lead us to believe that our water is being sourced from heavenly springs with all sorts of healthy properties. The reality, however, looks a lot more like the inside of a factory. The water produced in Maldives is actually just filled with desalinated tap water before being sealed.

### **3. BOTTLED WATER HAS NO PROVEN BENEFITS.**

Many people seem concerned about the quality of tap water, and opt for bottled water to be safe. However, this opinion about bottled water being healthier is completely wrong. Research studies on the review of safety of the water industry found no evidence supporting that bottled water is by any means superior.

### **4. BOTTLE PRODUCTION IS HARMFUL TO THE ENVIRONMENT.**

The high demand for water bottles means we use over 17 million barrels of oil on a yearly basis. Can we really afford to pour our petrol resources into making a bunch of plastic bottles?

### **5. WATER BOTTLE PRODUCTION WASTES TONS OF WATER.**

Like almost everything in the world, plastic needs a lot of water to be produced. It takes a lot of water to make water bottles. In fact, it takes a lot more than the bottle itself can even hold. Estimates show that it could take six to seven bottles' worth of water to even make the container. Instead, if you are connected to a water supply system in your island, you could just pour yourself a glass from the tap!  
(Reasons To Stop Drinking Bottled Water |LittleThings.com)

## MARINE POLLUTION

The ocean covers approximately 99% of the surface of the Maldives is the most valuable environment asset to the Maldives. The ocean is full of beautiful marine life and marine plants, which are extremely beneficial. The ocean provides over 14% of the protein that we consume globally. Maldivians have the highest per capita consumption of fish in the world, eating a pound of fish a day on average. Fish is the only staple food that is not imported to the Maldives and tuna alone accounts for 85% of protein consumed by Maldivians, with Maldivian citizens consuming 94kg of skipjack on average annually. Therefore, it must be the top most priority for us to put our efforts together to make our oceans healthy for its inhabitants!

According to research studies conducted on ocean pollution, it is estimated that;

- There are about **150 million tons** of waste in the oceans, globally.
- Every day, over **8 million pieces of plastic** are being thrown into the oceans globally, every year, which can take hundreds of years to degrade.
- **60% - 90% of waste** in the oceans are **plastics**
- **1 million plastic bottles** are thrown into the oceans **every minute!**
- **2 million plastic bags** are thrown into the oceans **every minute!**
- Every year **1 million** marine animals die from plastic pollution!



Not only are plastics harmful to the ocean, other forms of pollution are finding their way into the oceans through industrial dumping and surface run-off. These pollutants include; petrochemicals, lead, oil, mercury, phosphates and nitrates, all of which have extremely harmful effects on the ocean and its inhabitants.

<https://www.earthday.org/fact-sheet-plastics-in-the-ocean/>

## HOW DOES MARINE POLLUTION AFFECT PEOPLE?

Pieces of plastic ranging in size from 5mm to nano proportions or microplastics – are a key part of the world’s marine litter problem. Primary microplastics include plastics found in personal care and cosmetics products, and pre-production plastic resin pellets. Secondary microplastics are created when larger plastic items break down into smaller pieces. These pieces can enter marine food chains and potentially pose huge risks for the environment and human health. They are easily ingested by fish, mussels and other sea animals.

<https://www.unep.org/news-and-stories/story/plastic-and-microplastics-our-oceans-serious-environmental-threat>

Researchers predict that we consume a credit card’s worth of plastics every week!



Studies conducted in the Maldives have shown that microplastic pollution is high in some areas of the country.

<sup>6</sup><https://www.aljazeera.com>

# Resource sheet 4.3

## RESPONSIBLE WASTE MANAGEMENT HIERARCHY

Managing our rubbish is everyone's responsibility. Government, industry and the community all need to work together to reduce the amount of waste we produce. The Maldivian Government has established its priorities for waste management based on the waste hierarchy. The waste hierarchy sets out an environmental order of preference for waste management.

The most preferred option is to avoid waste being created, to reduce waste followed by reuse, recycling, recovery of energy and disposal at landfill being the least. Typically, treatment and containment don't apply to household rubbish and are usually used to safely manage hazardous materials. The waste hierarchy covers all types of waste, including household, business, construction and demolition waste.

### *The waste hierarchy*



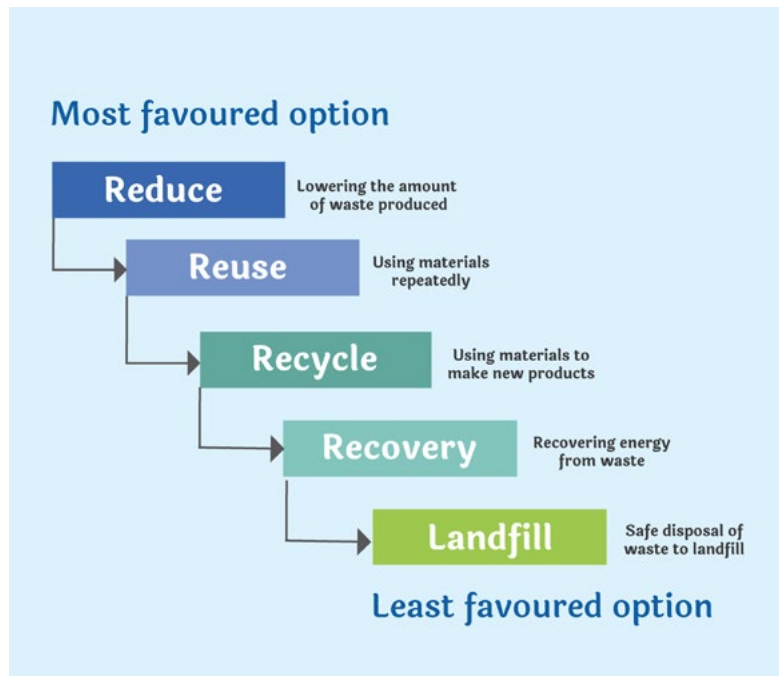


# MALDIVIAN GOVERNMENT WASTE MANAGEMENT POLICY

The Maldivian Government waste management regulations 2015 and Strategic Action Plan (2019 – 2023) sets out a plan to improve waste management, recycling and reduce waste going to landfill.

The local councils are required to develop and implement an Island Waste Management Plan, to engage the community in waste segregation and 3R (reduce, reuse, recycle) behaviours. Special emphasis should also be given to implement an action plan to ban single use plastics (SUP) in line with the SUP phase out plan by the Government.

Examples of different waste hierarchies



## WAYS TO REDUCE WASTE AT HOME

The amount of waste generated in the Maldives is increasing at an alarming rate as we continue to import products to sustain our growing population and booming economy. Every individual has a role to play in waste reduction. Here are few ways to reduce waste at home.



# How to reduce waste at home

- 

**Reduce food waste**
- 

**Make compost**
- 

**Avoid single use plastics**
- 

**Use reusable bags**
- 

**Avoid excessive buying**
- 

**Use reusable drink bottles**
- 

**Buy in bulk**
- 

**Use fresh food**

*#MyMaldiveshome*

# TIPS TO CREATE LESS WASTE

Swap plastic bottles for reusable ones



Carry a reusable water bottle



Carry reusable utensils



Eat more whole food  
(less packed foods)



## CREATE LESS WASTE

Here are a few ways to reduce waste

Make own beauty/self-care products



Buy/ use second hand clothes



cook at home



Grow vegetables and fruits



#MyMaldiveshome

# Resource sheet 4.4

## CIRCULAR ECONOMY

Goods of today become resources of tomorrow!

### NATURE'S CIRCULAR LIFE SUPPORT SYSTEM

Life on earth has evolved supported by a circular flow of materials and energy. In the natural circular system, elements are continuously cycled in various forms between different parts of the environment, such as: air, water, soil, plants and animals. Examples include the carbon, nitrogen and phosphorus cycles (nutrient cycles) and the water cycle.

On land, plants absorb water and nutrients from the soil through their roots, they take in carbon dioxide from the air through their leaves and in the presence of sunlight transform these in their cells, storing carbon and releasing oxygen through their leaves as they grow.

Plants form the basis of the food chain. They are eaten by animals which in turn are eaten by other animals. When plants and animals die, they are decomposed by microorganisms, this process releases the materials and energy back to the environment, enabling the cycling process to continue, supporting new life on earth.

Figure 8: Water Cycle



Source: MEE (2014) Poster – Water Cycle



Figure 9: Linear economy



Used goods end up in landfill or an incinerator or are dumped in the environment, polluting land, waterways and oceans, negatively impacting health of humans and wildlife.

In Maldives our economy is linear. We rely heavily on imported goods made from raw materials, natural resources and fossil fuel energy. Much of our waste is taken to Thilafushi where it is burnt, burnt locally on islands or even worse dumped at sea. <sup>1</sup>

**“Waste is a human invention, in nature, nothing is wasted, all waste from one organism becomes food for another, everything is recycled.”**

## RENEWABLE AND NON-RENEWABLE RESOURCES

Natural resources on earth can be classified as either renewable or non-renewable. A renewable resource can replenish itself at the rate it is used, while a non-renewable or finite resource has a limited supply that cannot be readily replaced by natural means at a pace quick enough to keep up with consumption.

Renewable resources include timber, wind, and solar while non-renewable resources include carbon-based fossil fuels - oil, coal, natural gas and minerals and metal ores such as gold and iron ore.

In a linear economy the valuable natural resources or raw materials that we rely on for manufactured goods are not limitless, many are non-renewable, once we use them all, they are gone forever.

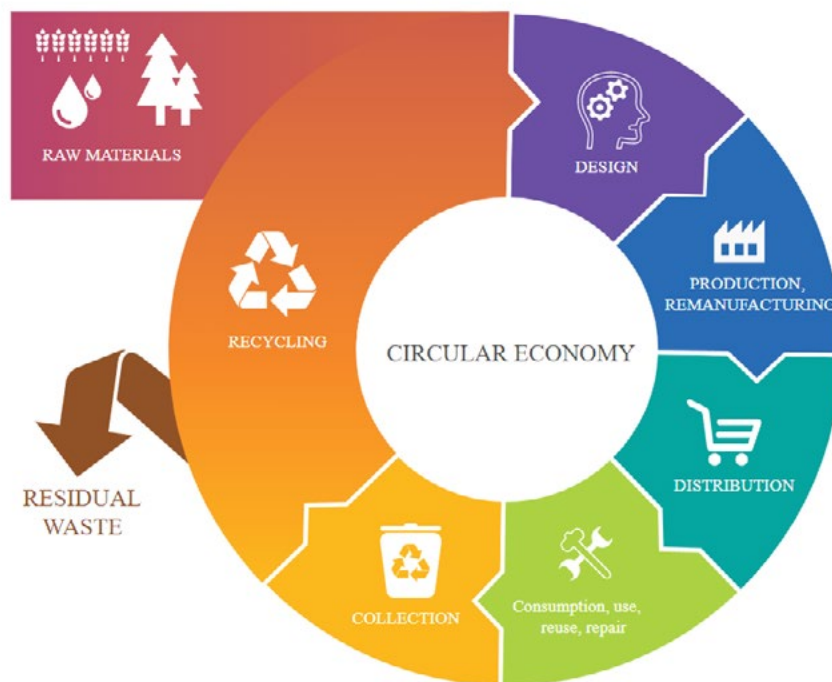
They are also becoming increasingly expensive and difficult to exploit, along with a constantly growing population and increasing consumer demand, it is becoming clear that this economic system cannot work long-term. This is where the model of a circular economy provides a solution to this problem.

<sup>1</sup> Ref: In year 2017 total waste production in Maldives was estimated to be 365000 tonnes, out of which only a small percentage was sent abroad for recycling.

## CIRCULAR ECONOMY

A circular economy is an alternative to the traditional linear throw-away economy, where waste is designed out of the product lifecycle so that resources are recirculated (as secondary raw material) in the manufacturing circuit as a continually flowing loop for as long as possible, reducing our reliance on raw materials for manufacturing and enabling nature to regenerate.

**Figure 10: Circular economy**



Source European Union: <https://www.europarl.europa.eu/news/en/headlines/economy/20151201STO05603/circular-economy-definition-importance-and-benefits>

Goods are designed so they are easy to share, lease, reuse, refurbish and recycle. Rather than discarding goods we do not need anymore, we reuse them to make new ones, simultaneously making considerable economic and environmental savings. To make the system work, it is essential that all economic actors, including consumers, are engaged at all stages of a product life: from the design (eco-design) to waste management through trade, consumption, repair and reuse.

### *Benefits of a circular economy*

- Waste prevention
- Environmental protection
- Creation of new kinds of jobs and skills
- Durable and innovative products

The circular model relies on system-wide innovation and builds economic, natural and social capital. The circular economy model is driven by renewable resources, rather than finite ones. This means that a circular economy depends on renewable energy, such as wind, solar and bioenergy, rather than coal and other finite fossil fuels.

There are two primary business models under the circular economy: those that foster reuse and extend the life of a product through repair, remanufacture, upgrades and retrofits; and those that turn old goods at the end of their service life into as-new resources by recycling the materials they contain.

*Source: Ellen MacArthur Foundation (date unknown) Systems Map, Ellen MacArthur Foundation website*

### **Principles of a circular economy**

Decouple economic activity from the consumption of finite resources, design out waste and pollution, keep products and materials in use and regenerate natural systems.

### **Circular economy action plans**

Governments are revising policies and legislation on waste and creating circular economy action plans. The European Commission Circular Economy Action Plan establishes initiatives along the entire life cycle of products targeting how they are designed, promotes circular economy processes, encourages sustainable consumption and aims to ensure that waste is prevented and resources used are kept in the EU economy for as long as possible. Sectors that use most resources and where the potential for circularity is high are focussed on such as: electronics and ICT, batteries and vehicles, packaging, plastics, textiles, construction and buildings, food, water and nutrients.

### **Resources**

*Ellen MacArthur Foundation (2021) 'What is a circular economy?,' Ellen MacArthur Foundation website.*

*<https://ellenmacarthurfoundation.org/topics/circular-economy-introduction/overview>*

*<https://ellenmacarthurfoundation.org/videos/explaining-the-circular-economy-rethink-progress>*

## ZERO WASTE

Zero is based on the philosophy that encourages the redesign of resources life cycles so that all products are reused.

It is focused on **WASTE PREVENTION!** The goal – create **NO TRASH** to send to landfills, incinerators or the ocean.



*“In.gredients” Is The First Zero Waste Grocery Store in America; October 30, 2017*

*<https://www.wastewiseproductsinc.com/blog/zero-waste/in-gredients-is-the-first-zero-waste-grocery-store-in-america>*

### **More information**

*Website*

*Published by Live and Learn International*

*[www.livelearn.org](http://www.livelearn.org)*

*Consumption and production systems*

*<https://www.storyofstuff.org/>*



# Resource sheet 4.5

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## TO BE WASTE FREE THERE'S A FEE

Unique geography poses key development challenges for the Maldives. Dispersion of the population across the Archipelago raises the cost of delivering services, as economies of scale are difficult to achieve in service provision. This also presents a challenge to providing waste management services. The recently released National Solid Waste Management Policy includes the 'polluter pays' principle. The drive towards a principle of 'Polluter Pays' is a strategy to fund waste management services in the Maldives.

The principle of Polluter Pays requires the person or organization generating waste to bear the full cost of its segregation, collection, transport and final disposal. The rationale behind this principle is that by paying for its disposal, the polluter has the incentive to minimize the cost and amount of waste generated. It is also important to identify who is the polluter, which includes individuals, industries, resorts, importers and suppliers. In the Maldives the application of the principle involves establishing a fee collection system that represents the true costs of waste management.

Waste management is not just the responsibility of the government, it is everyone's responsibility. Effective waste management requires everyone - government, business, households, schools and individuals - to play their part in managing waste responsibly- this includes paying for waste management services for the collection, treatment and disposal of waste. **To be waste free there's a fee!**

The need to consider the cost of Waste Management services has been included in the Island Waste Management Planning guidelines developed by the Ministry of Environment, Climate Change and Technology. The guidelines outline where the costs for providing waste management services come from:

- Costs of collection systems on the islands (i.e taking the waste to the island waste management center);
- Costs to operate the Island Waste Management Centre (including staff costs/ running costs e.g. diesel and power to operate equipment etc);
- Costs of transporting wastes off the islands to the regional waste management facility;
- Costs of repairing and maintaining vehicles and equipment;
- Costs of sweeping and keeping the Island clean;

Whilst the introduction of a 'Polluter Pays' scheme will help to cover the costs of waste management services in the Maldives, the primary purpose of introducing such a scheme is to promote waste reduction, reuse and recycling practices on our islands. By levying a fee for the amount of waste produced, there is an incentive to reduce the amount of waste required to be disposed of. Therefore, community members will

have an incentive to reduce and reuse waste and separate out recyclable wastes, such as plastics and metals. The amount of waste requiring disposal will be less and this will reduce the overall costs of waste management services to the whole community. In this way islands will be working together - sharing the costs and benefits of better waste management.







# MODULE 5

## SWM PLANNING

First, the module introduces participants to the concept of Environmental governance, emphasizing that it is crucial to recognize that the failure of governance lead to environmental degradation, and that it does not occur only due to a lack of technical solutions. Governance will be discussed in relation to the accountabilities under decentralization, and other related concepts, such as equality of access to solid waste management services. The key elements of good governance emphasized would be accessibility and participatory decision-making.

The rationale for good governance in IWM will be explained in the context of the Island Councils' mandates, and in relation to the major threats poor waste management pose to public health and environment. Island Leaders will be cautioned not to make unilateral decisions and actions (or with no sound analysis or firm basis) with respect to SWM as there are many stakeholders in SWM management that will be affected. For many, SWM is viewed as a public good or service, thus, its efficient delivery is a manifestation of good governance.

The key task of this module will be to provide guidance to formulate the SWM Plan addressing the key elements and components to ensure sustainability of the program.

### COVERAGE

This module consists of 2 key activities as follow:

**Activity 5.1. Visioning and Target Setting.** This activity focuses on assisting the island leaders to determine vision and mission that would lay the foundation for setting objectives and targets for the 5 year period. The targets will consider both the mandatory provisions in accordance with the National policies and Island Councils' ability to comply with them.

**Activity 5.2. SWM Planning.** The key output of this module is to initiate work on drafting a 5-year IWM plan. The Island Leaders Team may need about 2-3 months to consolidate all the plan inputs and to complete the draft plan. The community facilitators will be working with guidance from the focal point from PACCB team to assist the Island Leaders in completing the plan.



## Activity 5.1

# VISIONING AND TARGET SETTING

**Purpose:** Determining vision and mission for SWM in the island

**Time:** 15 minutes

**Materials needed:** paper and markers

## What to do:

1. Make groups of 4 or 5. Hand out papers for the participants to write their "Vision"
2. Discuss about the Vision that they would like to have in terms of improving the SWM situation in the Island
3. Discuss the proposed statements and finalize on one that could be used in the WMP

## Reflection and Drawing Conclusions:

- How could the Vision be promoted in the island?



## Activity 5.2

### SWM Planning

**Purpose:** Initiate WMP formulation

**Time:** 2 hours

**Materials needed:** PPT 6 – Dhigurah SWM process improvement story, Handouts SWM plan template, paper and pen.

#### What to do:

1. Present the case study – SWM in Dhigurah
  - a. Steps that led to the SWM plan formulation and community engagement
  - b. SWM process in the island including segregation at source, collection, process and management at the facility, resources used (including human resources)
  - c. Food waste composting
  - d. Removal of non-biodegradable waste from the island
  - e. Work with Parley for plastic waste removal
  - f. Waste management from marine vessels
  - g. SWM policy, fees for waste management, agreement with households and businesses, enforcement of rules
2. Provide an overview of the WM plan template. Highlight that SWM will include 4 sections; i.e.,
  - I. the SWM profile of the island (Current situation) (to be developed later)
  - II. Vision, objectives and Goals
  - III. Details of Goals and activities;

- The new SWM process (group work)
  - Information Education and Communication plan (group work)
  - SWM policy (SWM policy used in Dhigurah will be shared with participants for ideas)
  - Organization Chart, Human resources, roles & responsibilities and training (group work)
  - Finance plan – Income and expenditure (group work)
3. Provide participants with the handout WMP blank templates and sample information sheets that they could use as guides. Participants will work in 3 or 4 groups to formulate section III of the SWM plan. Rest of the sections will be completed after the workshop.
    - a. Group 1 – Formulate the new SWM Process and finance projection – Handout 1 and 5
    - b. Group 2 – Formulate the Information Education and Communication Plan – Handout 3
    - c. Group 3 - Formulate the organization chart, roles & responsibilities and training required. They will also have a look at the SWM policy document from Dhigurah and identify the rules/ regulations that is applicable in their island, Handouts 2 and 4;
  4. Participants will present the proposed processes, activities / actions outlined by the participants.
  5. Point out to the participants the importance of having a SWM committee and seek their views about who should be included in the SWM committee. Emphasise the importance of having a multi-sectoral body of about 6 to 8 people. The SWM plan should include the committee members details, their roles/ functions and term.
  6. Participants will be asked to write down a “pledge” that they would assume in order to be a responsible citizen and to contribute to SWM.
  7. Read out the pledges by the participants.
  8. The monitoring and evaluation form will be handed over to the participants and an overview would be provided about it. M&E will be a means to assess service delivery and benefits related to improved SWM. (Handout 6)

## *Reflection and Drawing Conclusions*

- What incentives could be provided for good performance in SWM?

# NOTES TO THE FACILITATORS

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## Module 5 – Planning for SWM

### OBJECTIVE OF INTEGRATED SOLID WASTE MANAGEMENT

- Protection of health and the environment

### WHY ENVIRONMENTAL GOVERNANCE IN SWM

- Solid waste impacts public health and environmental safety
- The impacts of unmanaged solid waste have intergenerational (i.e., future generations will benefit or suffer from current decisions) and inter-spatial effects (e.g., fisheries, water)
- There are many stakeholders thus decisions and actions cannot be unilateral
- SWM is perceived as a public good or service; its efficient delivery is a manifestation of good governance
- Sound governance of SWM leads to “buy-ins” of stakeholders who have vested interest to sustain services
- SWM has immediate impacts on the environment (i.e., smell, aesthetics, diseases)

### WHO ARE INVOLVED IN GOVERNANCE OF SWM?

- Decision makers and implementers
- Those impacted by decisions and actions
- Those providing information, analysis and recommendations to decision-makers and implementers (Island Councils, technical assistance, service providers, WDC, etc)
- The media, civil society organizations and schools



# THE NEW WASTE MANAGEMENT PROCESS

## Infrastructure

Islands without appropriate infrastructure of SWM, the project would be providing new IWM centers. Discuss with the Island council and identify whether they would be receiving new in Physical features of the IWMC facility that will be provided by the project.

Islands with an appropriate SWM Center, arrangements need to made to store segregated waste materials in line with the guidelines by the Ministry of Environment, Climate Change and Technology (outlined in Module 4).

## Waste management Process

### 1. Source Segregation

Each household, institution and business should segregate waste in line with the guidelines by the Government

### 2. Collection and transport

Discuss and determine the waste management process that would be followed to collect and transport, manage and treat waste in the island.

## Segregate waste at source

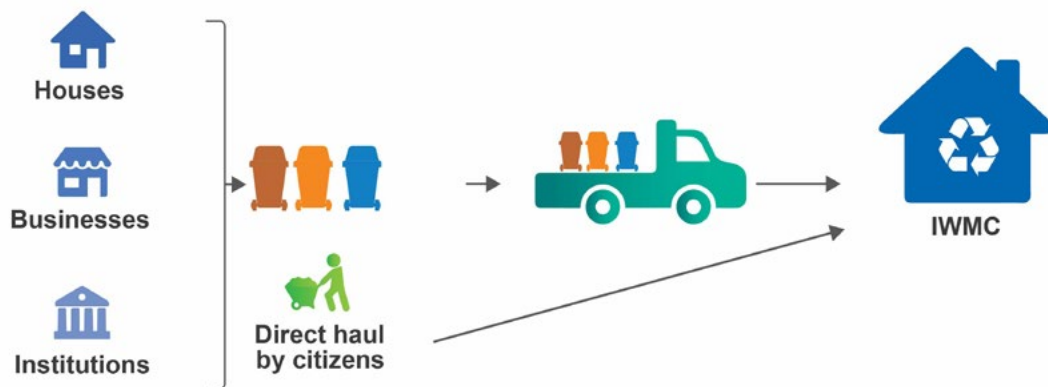


Figure 11

### 3. Screening & sorting at the IWMC

Manual screening and sorting in line with the waste segregation guidelines by the Government. Make arrangements to segregate and store waste in the different streams specified

Initially plastics, metals and glass will be sorted and stored in the IWMC. Eventually Paper & Cardboard may be sorted, in line with instructions by the RWMF.

Containers for segregated waste in the IWMC – Waste streams

Exchange containers will be provided for 3 streams (1. organics, 2. (plastics, metals, glass), 3.others

#### 4. Segregation and storage of waste in the IWMC

Segregated waste materials need to be stored in the IWMC till the materials is transferred to RWMF, in the schedule determined by the project/ RWMF.

#### 5. Storage of bulky waste

Make arrangements and allocated space to store bulky waste

#### 6. Equipment

Discuss with the Island Council and identify the details of the of equipment that they already have in the island and the new equipment that they would receive from the project. Have a look at the list and identify how waste would be processed/ and or treated using the equipment.

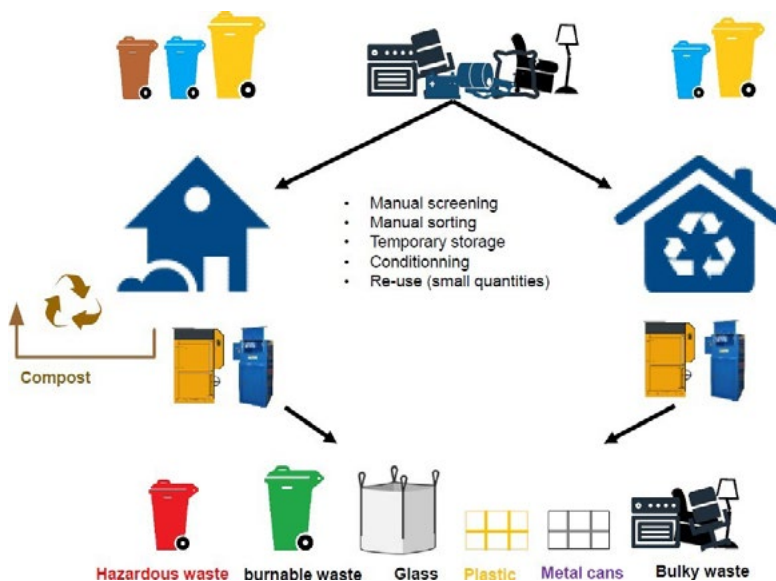
#### 7. Waste processing

- Organic waste: (composting, or other treatment methods that is appropriate, safe and sustainable)
- Plastics and metals: baled
- Glass: crushing

#### 8. Waste Processing and management at IWMC

- Waste processing in the IWMC (eg., Organics => compost, Recyclables => metals & plastics : baled, glass : crushed

Figure 12

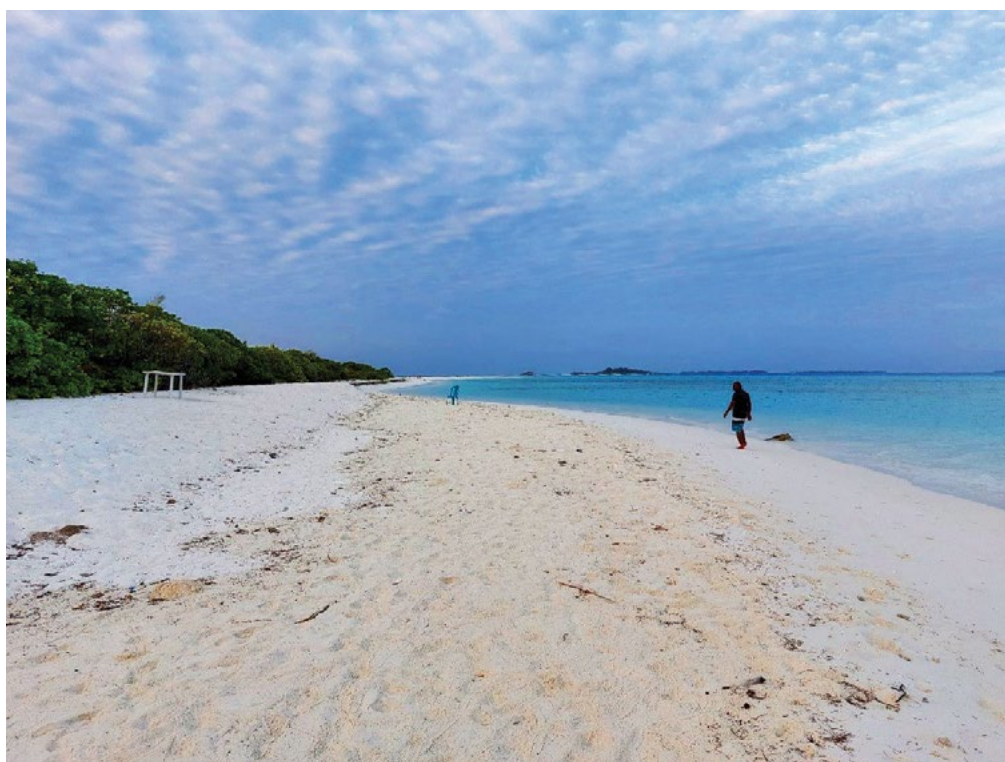


Residual waste (mixed waste) => put into 240 l bins (green) for further processing at Thilafushi)

## COMMUNITY-LED SOLID WASTE MANAGEMENT – SUCCESS STORY OF ADH. DHIGURAH

Dhigurah is dubbed as the “whale shark” island amongst locals and tourists, as it is common to be able to watch the magnificent whale sharks from the proximity of the island. The guest house industry has expanded over the recent years as the island boasts beautiful white sandy beaches and a respectful and friendly community.

After completing a training program on food waste composting in Sri Lanka, Ahmed Faiz Rasheed, (the former Island Chief) returned back to his island with determination and hope to change the solid waste management situation in his island ADh. Dhigurah<sup>1</sup>. The training provided information and experience that convinced Faiz that food waste composting is the most viable solution to safe waste disposal in the island. His aim was to persuade the community and work together to find a collective solution for the problem! His aim was to establish proper waste management services to protect the health and wellbeing of the community, and to promote the island as one of the cleanest destinations in the country!



As a first step, he gathered a small, influential group of community leaders and presented his ideas. The team met on three occasions and developed a comprehensive plan with details waste collection, transport and management including costing for the operations and charges for the services. to present to the wider community.

<sup>1</sup> The training was conducted in Weligama, Sri Lanka with support from the World Bank and Ministry of Environment

A member from each household (150 households) were called for a larger gathering. Members from 100 households attended the meeting and the plan for Island Waste Management process was presented. Initially MVR150 were proposed as a charge for waste disposal from each household. However, the community members highlighted that they were willing to pay MVR200 per month for the services proposed by the group. Their reasoning was that on average, an individual spends over MVR300 for phone bills and more for coffee per month, so it is reasonable to pay MVR200 for waste disposal per month, when the proposal is for the council to collect waste from their doorstep! This would reduce the time and effort that they need to put into waste disposal each day.

The service fees for businesses and institutions were higher than what was charged from the households. Food waste would be collected daily and inorganic waste, every other day. For bulky waste disposal, the customer will have to call for special trips in accordance with the rules determined by the council. The council would hire waste collection and management staff and a driver for the pick-up truck. There will be a dedicate member from the council who would look after the waste management operations.

The Island waste management plan with rules and regulations were finalized with input from the general community members soon after the meetings. The plan was put into effect the following year, and the Island Council executed agreements with each household, institution and business who applied for the waste management services. The few members who remained behind, soon applied for the service since it was considerably expensive to dispose of the waste on their own.

Faiz took the lead in providing training to the staff on how to carry out composting. Since the start of the program in 2015, all food waste produced in the island is being composted in the Island Waste Management Centre. There is demand from farmers in the island for the compost that is prepared in the island. According to them, it provides nutrient rich soils for their agricultural plots. The compost produced in Dhigurah is gaining popularity from the neighbouring islands who order stocks from time to time. The plan of the Council is to create a unique brand, improve packaging and to market the compost as a valuable product!





The Island residents adhere to the rules set by the council for waste management. As a result, Dhigurah is seen as one of the cleanest islands in the Maldives! According to Faiz, the most prominent achievement is that the reduction of diseases and improvement of health of the residents due to the successful waste management program. He proudly says that they were able to almost totally eliminate houseflies once they started the program.

The most significant change that the visitors observe in Dhigurah is the clean and pristine beaches, especially the beautiful “Dhigurah Thundi” (the long stretch of beach). Locals and tourists frequently visit the magnificent and picturesque Dhigurah Thundi that is free from waste!



# Resource sheet 5.1

## SOLID WASTE MANAGEMENT PLAN

### SECTION 1 - SOLID WASTE PROFILE

1. *Name of Island:*
  
2. *Population: male / female*
  
3. *Households, institutions, and Economic Activities*

	DETAILS
Number of households	
Institutions	
Number of guest houses with bed capacity	
Number of shops	
Number of café/ restaurants	
Other economic activities	

4. *Map or photo of waste management center or site: (hectares or sq. kms)*
  
5. *Waste Generation*

	WASTE CATE- GORY	VOLUME COLLECTED PER DAY (IN KG)		
		HOUSEHOLDS	GOVERNMENT	PRIVATE
1	Food waste			
2	Green waste			
3	Plastics			
4	Metals			
5	Glass			
6	Textiles			
7	Paper & cardboard			
8	E waste			
9	Bulky waste			
10	Special waste			
11	Construction waste			

6. *Present waste disposal system*

	AREA IN SQ. METERS
Waste disposal site	
Waste Management Centre	

- Are there sweepers/ cleaners ? Yes/ no
- If yes, how many people?
- Is waste segregation practiced in the island? Yes / No
- If yes, what percent of the total waste collected is segregated?

7. *Personnel involved in SWM*

- How many personnel are involved in SWM services? People responsible for SWM, Functions / mandates

PERSONNEL	NUMBER	FUNCTIONS
Management		
Admin staff		
Collection and transport		
Final disposal		
Street sweeping		
Others		
<b>Total</b>		

8. *Revenue & Expenditure for SWM services*

- Total budget allotted for SWM last year.
- Amount spent on waste collection
- Total budget allotted for SWM this year.
- How much is the waste collection fee per month?
- Household =
- Institutions =
- Commercial establishments =
- How much revenue was raised from the waste collection fees?

9. *Equipment for waste collection and disposal*

TYPE	OWNED BY THE ISLAND COUNCIL		
	NO OF UNITS	CONDITION Good/ Fair/ Bad	AVERAGE CAPACITY/ IN TONS
Open dump truck			
Glass crusher			
Bailer			
Others			
Total			

- Are there spare parts available? How are they serviced?
- Are there Guidelines to operate the facility?
- Do you have any arrangements with waste recyclers? If yes, please indicate company names, what they collect for recycling, their contact details.

10. *Existence of Local Regulation of SWM.*

- Please attach regulation
- Are there problems encountered in the implementation? Provide details if the answer is yes.



## SECTION 2 - WASTE MANAGEMENT PLAN

1. *Introduction*

2. *Objectives*

3. *Plan formulation process*

(technical assistance, community consultation, etc)

4. *Location and physical features of the IWMC facility* or Site (include location map, diagram of the facility) if available.

5. *Vision* State the vision statement that was crafted for SWM.

6. *Objective(s)* higher order objectives of the SWM program – these are the long-term development goals to which SWM contributes. These would mainly be health/ productivity improvement and environmental protection.

7. *Goals* Specific objectives that the Island Council seeks to achieve within the 5 year plan period. The goals should address technical, institutional, and financial components. Make sure that the goals include targets in relation to the mandatory provisions such as, segregation at source, and waste reduction. (List process to implement, ensure technical, institutional and financial sustainability, specific activities to be undertaken and indicative schedules)

GOAL 1- Establish a sustainable solid waste management in the Island

GOAL 2 – Development and Implement SWM policy, rules and regulations

GOAL 3 – Develop and Implement IEC Plan for SWM

GOAL 4 – Establish governance framework for effective SWM

GOAL 5 – Finance Planning and Management

8. *Population projection (5 years)*

Details	2021	2022	2023	2024	2025
Local residents					
Male					
female					
Foreigners					
Male					
female					

9. *Solid Waste Generation (current situation/ Projections). Include economic Sectors - kinds of wastes and projected developments*

	WASTE CATEGORY	ESTIMATION (IN KG)				
		2021	2022	2023	2024	2025
1	Food waste					
2	Green waste					
3	Plastics					
4	Metals					
5	Glass					
6	Textiles					
7	Paper & cardboard					
8	E waste					
9	Bulky waste					
10	Special waste					
11	Construction waste					

## SECTION 3 – GOALS

### GOAL 1 – Establish a sustainable solid waste process in the Island

<b>IMPACT</b>	Deliver SWM service effectively and in a sustainable manner		
<b>TARGET</b>	Provide SWM service in a continuous manner, ensure sustainable delivery of the service		
<b>RESPONSIBLE ENTITY</b>	Island Council, IWM Committee, Municipal Services Unit	Target Stakeholders	Residents

#### 1. Waste Segregation

NEED & ACTIVITY	TARGET GROUP	TOOLS/ EQUIPMENT NEEDED	RESPONSIBLE ENTITY	M&E
Waste segregation at source				
Waste segregation at the IWM Center, or IWM site				

#### 2. Waste collection, transfer/ transport or waste disposal

Describe how waste would be collected, for example, collection from all customers from doorstep or placing dustbins in communal locations and collecting from those points, frequency of collection, considerations for waste disposal etc. Provide the information to the public, via public announcements etc.

#### Segregate waste at source

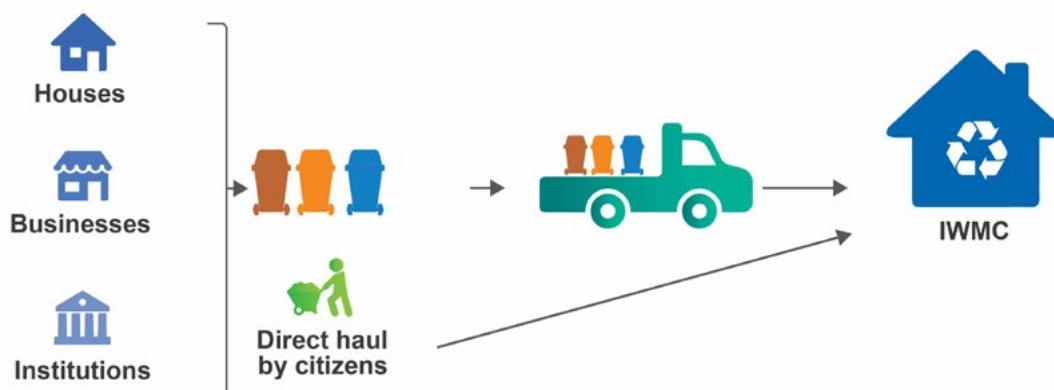


Figure 13

### 3. Waste Processing at the IWMC and transfer to the waste transfer vessel (Regional WM facility)

NEED & ACTIVITY	TOOLS/ EQUIP- MENT NEEDED	RESPONSIBLE ENTITY	M&E
Waste screening; 1. Recyclable waste (plastic, metal, glass), 2. Mixed waste (non-recyclable waste, burnable waste)			
Waste Processing Organic waste – compost Plastics – bailing Metal – bailing Glass - crushing			
Bulky waste storage			
Transport waste to the transfer vessel			

### GOAL 2 – Develop and implement SWM Policy, rules and regulations

<b>IMPACT</b>	Develop and implement SWM policy to protect health, well-being and the environment by reducing harmful health and environmental impacts of waste		
<b>TARGET</b>	Implement SWM Policy, rules and regulations to establish an effective SWM system in the Island.		
<b>RESPONSIBLE ENTITY</b>	Island Council, IWM Committee, Municipal Services Unit	Target Stakeholders	Residents

### COMPONENTS OF THE SWM POLICY

*Policy on Waste Management in (name of the island), established under the Waste Management Regulation (2013/R-58)*

1. Collection, processing and disposal of waste in the island.
2. Parties involved in collection and management of waste in the island:
3. Collection and segregation of waste
4. Segregation of waste
5. Fee/ charges for waste management
6. Registering and de-registering for waste management services
7. Bulky waste and special waste disposal
8. Fee for the transportation of bulky and special waste



**GOAL 3 - Information Education and Communications Plan**

<b>IMPACT</b>	Increased awareness of the community on effective solid waste management and establish an effective SWM system in the island		
<b>TARGET</b>	Raise awareness of the community on solid waste management to; Promote waste reduction, re-use and recycling behaviors  Promote safe disposal of waste  Prevent pollution an ecological degradation by safe disposal of waste		
<b>RESPONSIBLE ENTITY</b>	Island Council, IWM Committee, WDC	Target Stakeholders	Residents

1. Provide information and engage the community in sustainable SWM planning

<b>NEED &amp; ACTIVITY</b>	<b>TARGET AUDIENCE</b>	<b>KEY MESSAGES/ ACTIONS</b>	<b>MEDIUM/ TOOL/ METHOD/ TARGET</b>	<b>RESPONSIBLE AGENCY/ PERSON</b>	<b>TIMEFRAME</b>	<b>M&amp;E</b>

2. Provide information and engage the community in waste segregation

<b>NEED &amp; ACTIVITY</b>	<b>TARGET AUDIENCE</b>	<b>KEY MESSAGES/ ACTIONS</b>	<b>MEDIUM/ TOOL/ METHOD/ TARGET</b>	<b>RESPONSIBLE AGENCY/ PERSON</b>	<b>TIMEFRAME</b>	<b>M&amp;E</b>

3. Provide information and engage the general community in Single Use Plastic Reduction

<b>NEED &amp; ACTIVITY</b>	<b>TARGET AUDIENCE</b>	<b>KEY MESSAGES/ ACTIONS</b>	<b>MEDIUM/ TOOL/ METHOD/ TARGET</b>	<b>RESPONSIBLE AGENCY/ PERSON</b>	<b>TIMEFRAME</b>	<b>M&amp;E</b>

4. Provide information and engage the community in waste reduction, re use and recycling

<b>NEED &amp; ACTIVITY</b>	<b>TARGET AUDIENCE</b>	<b>KEY MESSAGES/ ACTIONS</b>	<b>MEDIUM/ TOOL/ METHOD/ TARGET</b>	<b>RESPONSIBLE AGENCY/ PERSON</b>	<b>TIMEFRAME</b>	<b>M&amp;E</b>

**GOAL 4 – Establish governance framework for effective SWM**

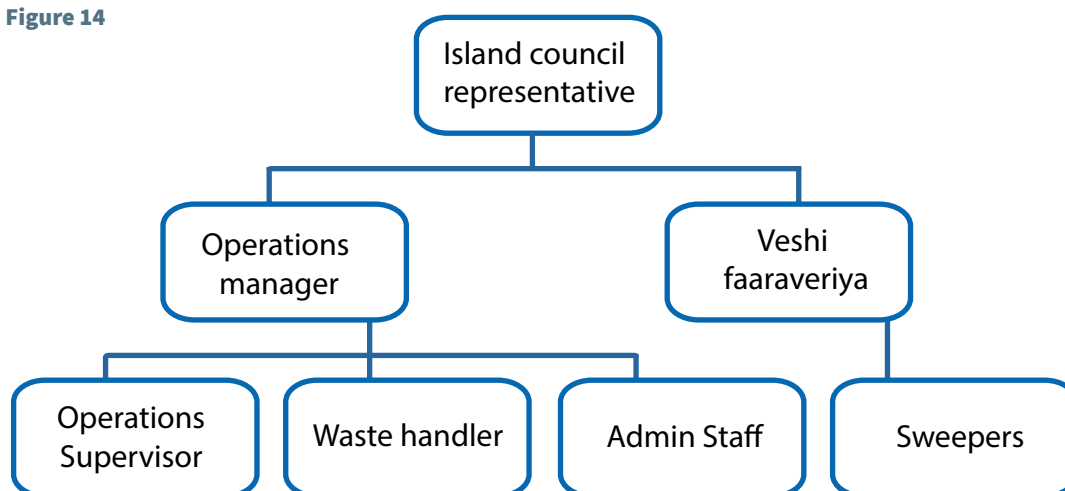
<b>IMPACT</b>	Form the SWM committee and governance framework for effective solid waste management		
<b>TARGET</b>	Establish SWM governance body and ensure effective service delivery		
<b>RESPONSIBLE ENTITY</b>	Island Council, IWMCCommittee, WDC	Target Stakeholders	Residents

**1. Form the SWM committee**

NEED	TARGET STAKEHOLDERS	RESPONSIBLE BODY	ACTIVITIES/MATERIALS	TIME-FRAME	M&E

**2. SWM Governance Structure**

Figure 14



**3. List the functions of each staff**

#	TITLE	NO OF STAFF	FUNCTION(S)
1	Waste Management coordinator – Island council rep.		
2	Operations manager		
3	Operations Supervisor		
4	Waste handler(s)		
5	Veshi faaraveriya		
6	Sweepers		
7	Administrative Staff		

3. *List the functions of each staff*

#	TARGET STAFF	TECHNICAL KNOWLEDGE & SKILLS	COMMENTS (MEDIUM/ TOOL/ METHOD/ TIME-FRAME)
1	Waste Management coordinator – Island council rep.		
2	Waste management process manager		
3	Supervisors – waste handlers		
4	Waste handler(s)		
5	Veshi faaraveriya		
6	Sweepers		

**GOAL 5 - Finance planning and management**

<b>IMPACT</b>	Develop an effective financing plan for sustainable solid waste management service delivery		
<b>TARGET</b>	Develop an effective finance plan for SWM service delivery, without service disruption.		
<b>RESPONSIBLE ENTITY</b>	Island Council, IWM Committee, WDC	Target Stakeholders	Island Leaders

*Finance Management Plan*

1. *Sources of Funding*

SOURCES OF FUNDING	YEAR				
	2022	2023	2024	2025	2026
Government Funding					
Finance generated by the Council					
Waste Management Services Fee - Households					
Waste Management Services Fee - Institutions					
Waste Management Services Fee - businesses					
Donations					
Other Sources					
Loans					
Total Funding Received					
Total loans/ deficit					
Total Funds Available					

## 2. *Expenditure*

EXPENDITURE	YEAR				
	2022	2023	2024	2025	2026
Salaries & allowances for SW handlers, operations, and management staff					
Salaries & allowances for sweepers/ cleaners					
Utility bills					
Administrative Costs					
Cost for operations/ maintenance of machinery/ equipment					
Other costs					
Total Expenditure					



# SOLID WASTE PROCESS IN THE ISLAND - SAMPLE

## GOAL 1 - Establish a sustainable solid waste process in the Island

<b>IMPACT</b>	Deliver SWM service effectively and in a sustainable manner		
<b>TARGET</b>	Provide SWM service in a continuous manner, ensure sustainable delivery of the service		
<b>RESPONSIBLE ENTITY</b>	Island Council, IWM Committee, Municipal Services Unit	Target Stakeholders	Residents

### 1. Waste Segregation

NEED & ACTIVITY	TARGET GROUP	TOOLS/ EQUIPMENT NEEDED	RESPONSIBLE ENTITY	M&E
Waste segregation at source	Households, businesses, institutions	Dustbins, Pickup	Waste generators	Record of how waste is segregated; photo
Waste segregation at the IWM Center, or IWM site	Municipal service unit	Xx dustbins, pickup truck	Municipal service unit	Record of how waste is segregated; photo

### 2. Waste collection, transfer/ transport or waste disposal

1. Waste would be collected by the Island Council from all customers, from doorstep. Organic waste would be collected once every day.
2. Inorganic waste would be collected three times per week.
3. Bulky waste should be disposed of via a call and pick up service.

(Information will be provided to the public via public announcements and social media messages.

#### Segregate waste at source

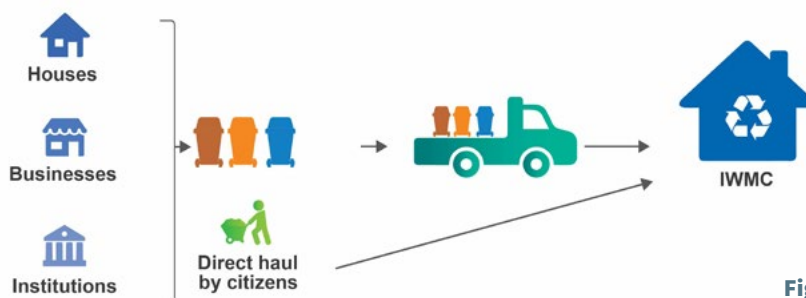


Figure 16

3. *Waste Processing at the IWMC and transfer to the waste transfer vessel (Regional WM facility)*

<b>NEED &amp; ACTIVITY</b>	<b>TOOLS/ EQUIPMENT NEEDED</b>	<b>RESPONSIBLE EN-TITY</b>	<b>M&amp;E</b>
Waste screening; Screen and sort waste in line with the segregation guidelines	Dustbins of 3 colors; organic, recyclables, burnable waste	Island Council, Municipal Service Unit	
Waste Processing Organic waste – compost Plastics – bailing Metal – bailing Glass - crushing	Compost equipment Bailer Glass Crusher	Island Council, Municipal Service Unit	Maintain record of the amount of processed waste
Bulky waste storage		Island Council, Municipal Service Unit	Maintain record of the amount
Transport waste to the transfer vessel	Bins and Pickup truck	Island Council, Municipal Service Unit	Maintain record of the amounts

# SOLID WASTE MANAGEMENT POLICY, RULES AND REGULATION - SAMPLE

## GOAL 2 – Develop and implement SWM Policy, rules and regulations

<b>IMPACT</b>	Develop and implement SWM policy to protect health, well-being and the environment by reducing harmful health and environmental impacts of waste		
<b>TARGET</b>	Implement SWM Policy, rules and regulations to establish an effective SWM system in the Island		
<b>RESPONSIBLE ENTITY</b>	Island Council, IWM Committee, Municipal Services Unit	Target Stakeholders	Residents

### Policy on Waste Management in (name of the island), established under the Waste Management Regulation (2013/R-58)

#### **1- Collection, processing and disposal of waste in the island.**

(a) (Name of the island). Disposal of the organic waste (food waste and yard waste) shall be treated once they are taken to the waste management center and made into compost. Inorganic waste (non-biodegradable wastes) shall be disposed, in accordance with the policy section ()

#### **2- Parties involved in collection and management of waste in the island:**

(a) The disposal of all the waste produced in (Name of Island), shall be managed by parties who have acquired the relevant authorization from the Island Council to act as such permit holders. If waste is dumped in any area other than the authorized area, an administrative penalty between 501/- and (five hundred and one rufiyaa) 100,000,000 (One hundred million rufiyaa) will be imposed.

#### **3- Collection and segregation of waste**

(a) The council shall visit once daily to collect organic waste (food waste) from houses, guest houses, tea shops, restaurants, and cafes. In addition, they shall collect and transport green waste (garden/ or yard wastes) and inorganic waste to the Waste Management Centre, twice every week from houses, guest houses, tea shops, restaurants, cafes, vacant houses, shops, and carpentry workshops.

(b) The waste management permit holders will work with the council, and shall collect waste from houses and other such places registered for the waste disposal & management services.

(c) No fee will be charged from lands administered by the council, parks, sports fields and cemeteries.

Once this policy is enacted, burning of waste inside house yards will be prohibited. Waste can only be burned in authorized places under the supervision of the council. If this is violated, for the first time an administrative penalty of 500/- (Five hundred rufiyaa) will be imposed. An extra administrative penalty of 500/- (five hundred rufiyaa) will be imposed, every time this offence is repeated.

(d) It is against the law for parties to conduct any waste management related acts, fraudulently acting as permit holders, via the authorized waste management permit holders. If such misconducts are carried, the party who has signed the contract with the council, will be fined with an administrative penalty of 500/- (five hundred rufiyaa). And an extra administrative penalty of 500/- (five hundred rufiyaa) will be imposed, every time this offence is repeated. Such parties, can only further provide the waste management service, after they have paid the fines.

**4- Segregation of waste:** Waste taken to the Waste Management Centre for disposal, shall be segregated in the following manner.

(a) Food waste

(b) Green waste: (waste trees and shrubs)

(c) Metal: (iron, aluminum, copper etc.)

(d) Plastic: (plastic bottle, container, straws, pipes etc)

(e) Glass: (bottle, glass plates etc.)

(f) Other objects: (Diapers and sanitary napkins, bag, clothes, light bulbs, carry-bags, paper and objects made from different materials)

(g) Saw dust and wood chips

(h) Hazardous waste: (acid, battery, all sorts of oil apart from cooking oil, fertilizers and chemicals used in medications, detergents, chemicals produced in hospitals and all other harmful materials left after treating patients)

(i) Fish waste produced in large amounts from fish processing, shall be disposed of at the Waste Management Centre.

(j) Construction waste produced from demolition of buildings like concrete, tiles etc. shall be disposed at areas designated by the council, for disposal of such materials.

(k) Waste produced in water drainage pits and septic tanks, shall be disposed in dug pits on areas designated for such activities by the Island Council. Accordingly, wastes from junctions and septic tanks shall be buried on areas specified for such activities, in accordance with the advice given by the council once they are informed. Conversely, if waste collected from junctions and septic tanks, are discarded on the beach, sea or any other place, such acts will be fined with an administrative penalty of 5000/- (five thousand rufiyaa).

**5- Collection of fees for waste management service:** Fees shall be charged for the collection and transportation of waste from customers registered for the waste management service, in accordance with the guidelines mentioned below.

- (a) 200/- (Two hundred rufiyaa) per month from each household
- (b) 150/- (One hundred and fifty rufiyaa) per month from each vacant house
- (c) 150/- (One hundred and fifty rufiyaa) per month from each shop
- (d) 100/- (One hundred rufiyaa) per month from each shop operated in their own premises, registered for the waste management service
- (e) 100/- (One hundred rufiyaa) per month for the disposal of kitchen waste only. (If land is not registered for cleaning service, under the waste management service)
- (f) 50/- (Fifty rufiyaa) per month for the disposal of kitchen waste produced from each household, living on the same land
- (g) 500/- (Five hundred rufiyaa), per month from restaurants, tea shops and such places.
- (l) 400/- (Four hundred rufiyaa) per month from guesthouses with 3 rooms. And 30/- (Thirty rufiyaa) will be charged for each additional room
- (j) 150/- (One hundred and fifty rufiyaa) per month from Carpentry and Workshops.
- (k) Fee charged from state, government buildings and state owned enterprises will be based on the size of the land at the rate of 0.05 Laari per square feet per month
- (l) 150/- (One hundred and fifty rufiyaa) per month from the administrative offices of the club associations. After (date), customers who are willing to register for the waste management service can only sign up, once they pay the fee charged per pickup, for the transport of the garbage collected.
- (m) Before 10th of every month, waste disposal fee shall be paid to the council. After the 10th of each month, the waste disposal service fee can only be accepted with a fine of 1/- (One rufiyaa) for each day until 3 months. After 3 months, a fine of 2/- (Two rufiyaa) will be charged for the added months. If the waste fee is not paid for 1 month, such customers will not receive the waste disposal service. In addition, service for such customers will resume, once they settle the waste fee, fines and an extra 100/- (One hundred rufiyaa).

**6- For the effective collection of waste, customers are responsible to store the waste segregated in a specified area.** It is prohibited for customers to keep waste on the street for collection, as such acts are against the objectives of having an effective waste management procedure in the Island.

(a) Individuals who place waste on the streets will be fined with an administrative penalty of 20/- (Twenty rufiyaa), if it is for the first time. And an extra administrative penalty of 10/- (Ten rufiyaa) will be imposed every time the offence is repeated. For easy transportation of waste on to the seaborne vessel, all wastes shall be segregated and packed in separate bags or containers.

### **7- Registering and de-registering for the waste disposal service**

(a) Individuals can register for the service if they agree with the terms mentioned in this policy, and after they submit a completed Waste Management application form to the (Island Name) Council office.

(b) Individuals can de-register from the waste management service after they pay for any unpaid



charges and once, they submit a completed “Waste Management service de-registration Form” to the (Island Name) Council office.

### **8- Bulky waste and special waste**

(a) Special pickup service should be requested for the disposal of bulky waste like furniture, mattress, refrigerator, T.V and washing machines. Special pickup service should also be requested to dispose waste that is produced under special circumstances like waste produced by pruning and uprooting of trees and coconut palms, wood beams and different types of wood and construction waste produced from demolition of buildings like concrete debris etc. In addition, all sorts of waste that is not produced daily, shall be disposed under the special pickup service request policy.

(c) From all things mentioned above construction waste like concrete debris, shall be dumped in authorized areas, with the permit of the council.

(d) Waste produced under special circumstances shall be transported to the Waste Management Center in Pickups, as per the rates given by the council. Accordingly, these transports can be done in two ways. Waste can be transported in the council’s vehicle, where council employees will do the loading and unloading of the waste. Or the waste can be transported on the council’s vehicle, where the owner of the premise or the customer will handle the loading and unloading of the waste. Rates allotted for these two transports will differ. Accordingly:

### **9- Fee for the transportation of bulky and special waste**

(a) 100/- (One hundred rufiyaa) will be charged for the transportation of waste in the council’s pick-up, where loading and unloading of the waste will be done by the council employees.

(b) 70/- (Seventy rufiyaa) will be charged for the transportation of waste in the council’s pick-up, where customers will do the loading and unloading.

(c) 150/- (One hundred rufiyaa) will be charged for the transportation of waste in the council’s pickup from individuals who are not registered in the waste disposal service.

(d) If other modes of transportation is chosen for waste transference apart from the councils pick-up, from houses/places that are not registered under the waste disposal service they are meant to inform the relevant employee from the council. Accordingly, a fee will be charged from such waste bought to the garbage dump for waste disposal as mentioned below.

1. 30/- (Thirty rufiyaa) for a large pick-ups loaded with waste (if not packed in bags)
2. 20/- (Twenty rufiyaa) for an island pick-up loaded with waste (if not packed in bags)
3. 15/- (Fifteen rufiyaa) for a wheel burrow loaded with waste (if not packed in bags)
4. 10/- (Ten rufiyaa) for a wheel burrow loaded with waste
5. 08/- (Eight rufiyaa) for a big bags/ sacks loaded with waste
6. 05/- (Five rufiyaa) for a cement sack loaded with waste
7. 20/- (Twenty rufiyaa) each day for a dustbin

### *10- Individuals not participating in the waste management service*

(a) Waste produced by individuals who are not participants of the service are obliged to dispose their waste as per this policy. So the waste shall be segregated and transported to the Waste Management Centre.

(b) Residents' not registered for the waste management service, shall carry their waste to the (Island Name) Waste Management Centre, after they have informed the relevant employee from the council.

(c) For Individual waste disposal, a fee will be charged as mentioned below

1. 50/- (Fifty rufiyaa) for a large pick-up loaded with waste (if not packed in sacks)
2. 35/- (Thirty five rufiyaa) for an island pick-up loaded with waste (if not packed in sacks)
3. 20/- (Twenty rufiyaa) for a cart loaded with waste (if not packed in sacks)
4. 15/- (Fifteen rufiyaa) for a wheel burrow loaded with waste
5. 10/- (Ten rufiyaa) for a big sack loaded with waste
6. 07/- (Seven rufiyaa) for a cement sack loaded with waste
- 7.25/- (Twenty five rufiyaa) each day for a dustbin

8- Waste produced during boat building, beaching, dry-docking and maintenance and waste produced during loading and unloading of cargo to and from vessels respectively need to be properly collected, cleared and disposed at the waste management center or at an area designated by the council as per the policy. Parties will be held liable for the breach of such rules, and will have to pay an administrative penalty as per the policy. It has to be noted, that a fee will be charged for such wastes too.

9- If waste produced from safari boats needs to be disposed, such an arrangement can be made after calling the relevant employee from the council. The council shall provide the service once the allotted waste fee is paid and when the waste is unloaded at the harbor.

Accordingly, 250/- (Two hundred and fifty rufiyaa) will be charged each time a safari boat unloads the waste. And if the unloading waste fills more than one pick-up, extra 250/- (Two hundred and fifty rufiyaa) will be charged for each pick-up.

10- Farmers are obliged to dispose waste produced in their farms, and such other places after the waste is transported to the waste management center, or the designated area for disposal. Accordingly, such wastes will also be charged with a waste fee as per the policy.

11- The council has the authority of making amendments to this policy and to the waste fee charged. Accordingly, if any such amendments are made it should be publically announced.

12- If any fee is not paid as per the policy, does an act not in accordance with the policy, commits a prohibited act or if any administrative penalties are not paid, the council has the authority to resolve such matters by addressing them to the relevant judicial court.

(date)

## INFORMATION, EDUCATION AND COMMUNICATION PLAN - SAMPLE

### GOAL 3 – Information, Education and Communication Plan (IEC Plan) for SWM

<b>IMPACT</b>	Increased awareness of the community on effective solid waste management and establish an effective SWM system in the island		
<b>TARGET</b>	Raise awareness of the community on solid waste management to; Promote waste reduction, re-use and recycling behaviors Promote safe disposal of waste Prevent pollution an ecological degradation by safe disposal of waste		
<b>RESPONSIBLE ENTITY</b>	Island Council, IWM Committee, WDC	Target Stakeholders	Residents

### Information, Education and Communication Plan (year 2022)

#### 1. Provide information and engage the community in sustainable SWM in the Island

<b>NEED &amp; ACTIVITY</b>	<b>TARGET AUDIENCE</b>	<b>KEY MESSAGES/ ACTIONS</b>	<b>MEDIUM/ TOOL/ METHOD/ TARGET</b>	<b>RESPONSIBLE AGENCY/ PERSON</b>	<b>TIME-FRAME</b>	<b>M&amp;E</b>
Focus group discussions with the Leaders on establishing a sustainable solid waste management system in the Island and get their buy in.	Lead personnel from Island, Institutions, NGO's, businesses, influencers, etc.	Discuss with the group and finalize the plan of action.  Set a date to carryout community consultations, (ideally 1 from each household, and all businesses	Design of the IWMC, equipment list, MOU with the Ministry, proposed plan of action defined in the IWM Plan including proposed SWM process and charges for SWM.	Island Council & IWM Committee	Quarter 1, 2022	Focus Group meeting notes

Provide information about the improvements to SWM process in the Island and the new SWM process	General Community – household heads (1 from each house)  Institutions Businesses	New / improvements in the infrastructure and equipment and changes to waste disposal  Changes to the SWM organization & staffing  Cost of operations & maintenance  Fee collection for SWM Registration for SWM service	Meeting with lead decision makers Meeting with households Meeting with Institutions and business  Additionally, Provide information via Social media	Island Leaders & IWM Committee	Quarter 1, 2022	Provide Information to at least 70% of households, and all the institutions and businesses
Formulate Agreement with Customers (The Island WM Policy will be in the annex	All waste generators	Includes information about the waste collection & disposal,	Working group – IWM Committee	Island Council	Quarter 2, 2022	Agreement with customers (document)
Formalize Agreement with customers (at least 70% of the customers)	Households, Institutions, and businesses	Agreement to adhere with policies and regulations of the Island Council	Finalize agreement with the customers & register for service	Island Council	Quarter 3, 2022	Agreement finalized with 70% of customers

## 2. Provide information and engage the community in waste segregation

NEED & ACTIVITY	TARGET AUDIENCE	KEY MESSAGES/ ACTIONS	MEDIUM/ TOOL/ METHOD/ TARGET	RESPONSIBLE AGENCY/ PERSON	TIME-FRAME	M&E
Provide Information to the households about waste segregation at source (Cover 70% of the households)	Household head - women	The need for waste segregation, Categories for waste segregation and considerations	Social media messages – reach at least 70% of households using social media 1 hour meeting – engagement sessions to PTA, provide simulation exercise. (Reach at least 30% of the households through engagement session)	Island based trainer with Women’s Development Committee	Quarter 1 to 2, 2022	Provide information to 70% of the households by Quarter 2, 2022
Provide Information to institutions & businesses about segregation at source (Cover 100%)	Institutions and businesses in the Island	The need for waste segregation, categories for waste segregation and considerations	Social media messages; Forward information using viber group? Inform all the businesses	Island based trainers & Women’s Development Committee	Quarter 1, 2022	Provide Instruction to all the businesses
Assess whether the island residents adhere to the policy on waste segregation	10% waste generators	Categories for waste segregation and considerations	Spot checks and record data Photography evidence.	Women’s Development Committee	Quarter 3, 2022	Spot checks Photography evidence and record data from 10% waste generators



### 3. Provide information and engage the general community in Single Use Plastic Reduction

NEED & ACTIVITY	TARGET AUDIENCE	KEY MESSAGES/ ACTIONS	MEDIUM/ TOOL/ METHOD/ TARGET	RESPONSIBLE AGENCY/ PERSON	TIME-FRAME	M&E
Disseminate information about plastic pollution and impact of it on health and the environment	General Community	Plastic pollution and the impact of it on the environment and health	Engagement session for household heads Engagement session for school Use social media to inform the Institutions & Businesses	IWM committee & community facilitators	Quarter 2, 2022	Signing sheets/ photos of Engagement session Social media message records
Ban of SUP plastics 6 items that have been made mandatory to ban by the Government from June 2021.	Shops & businesses	Stop bringing SUP bags to the Island/ stop giving away SUP to customers.	Meeting with the businessowner's and agree on the ban of plastic bags in the island Public Announcement	Island Council	Quarter 2, 2022	Sign in sheets/ photo
Introduce alternatives to SUP by the businesses on the Island	Shops & businesses	Keep alternatives to SUP in the shops for customers to purchase	Information about the availability of alternatives to SUP via social media	IWM committee & community facilitators	Quarter 3, 2022	Spot check, photo
Reduction of Single use plastic bags by the household head/ decision makers in the house	Household head - women	Use eco-friendly alternatives, reusable bags and / or containers for shopping	Social media messages	Island based trainer with Women's Development Committee	Quarter 3, 2022	Spot check, photo

Reduction of Single use plastic bags by the institutions & businesses (eg., guest houses)	Institutions and businesses	Ban of SUP bags in the premises	Meeting with institutions and business owner's and agree on the ban of plastic bags in their premises	Island Council	Quarter 2, 2022	Sign boards in the premises, photo
Provide Incentives to the Public	General Community – household heads	Motivate the change	Provide cloth bags to every household Make arrangements to provide water filters under a finance scheme / Installment payment basis (on Islands where piped water is available)	Island Council	Quarter 3, 2022	
Assess how much of the SUP products that have been banned are in shops & the amount that are entering the island.	Boats, ferries, businesses	Audit of the SUP (banned products) entering the Island	Spot check and photographic evidence Products in the market Use of alternatives Alternatives that are available	Island Council	Quarter 1, 2023	Spot Check and Quantify the amount of banned SUP products that are in the shops & the amounts that are entering the island

#### 4. Provide information and engage the community in waste reduction, re use and recycling

NEED & ACTIVITY	TARGET AUDIENCE	KEY MESSAGES/ ACTIONS	MEDIUM/ TOOL/ METHOD/ TARGET	RESPONSIBLE AGENCY/ PERSON	TIME-FRAME	M&E
Provide information about 3R and 3R benefits	General Community – household heads (1 from each house) School Environment Club	What is 3R and what are 3R benefits How to reduce waste as an individual, at home & at workplace How to re-use waste How to enhance waste recycling (in liaison with recyclers)	Use social media to share posters Engagement session1 for household heads/ PTA and school	IWM committee, WDC and community facilitators	Quarter 2, 2022	Provide Information to 70% of households, and all the institutions and businesses
Information and practical application - composting	General Community members School Environment Club	Composting theory & practical	Practical session on composting for household heads/ PTA and school	Community facilitators and WDC	Quarter 2, 2022	Sign in sheets and photos
Composting Practical application	General Community groups & household heads (at least 20% households by end of 2022)	Composting theory & practical	Engage targeted community groups & individuals in composting	Community facilitators and WDC	Quarter 3, 2022	Spot check & photos

# Resource sheet 5.2

## SECTION 6 - WASTE MANAGEMENT - MONITORING AND EVALUATION

Periodic assessment of efficiency and effectiveness of SWM operations/ services

### 1. Waste collection and / or Disposal

How waste is collected or disposed (tick as appropriate)

DETAILS	ANSWER	
<b>1</b>	Unorganised / voluntary disposal – resident’s hauling	
<b>2</b>	Organized and Centralized collection of waste from waste generators and taken to waste management center or site	<i>Tick to show the customers waste is collected from</i> <input type="checkbox"/> Households <input type="checkbox"/> Govt institutions <input type="checkbox"/> Shops <input type="checkbox"/> Café & restaurants <input type="checkbox"/> Utilities <input type="checkbox"/> Parks and communal areas <input type="checkbox"/> Workshops <input type="checkbox"/> Others
<b>3</b>	Was the waste segregated?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<b>4</b>	How was the waste segregated?	<input type="checkbox"/> Organic waste <input type="checkbox"/> Plastics <input type="checkbox"/> Metal and Glass <input type="checkbox"/> Others
<b>5</b>	Collected waste was transferred to WMC in segregated bins or containers?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<b>6</b>	Waste was disposed in line with EPA guidelines?	

## 2. Waste processing and management at the Island Waste Management Centre or Site

Volume of waste generated

#	WASTE CATEGORY	VOLUME COLLECTED PER DAY (IN KG)
1	Food waste	
2	Green waste	
3	Plastics	
4	Metals	
5	Glass	
6	Construction and demolition waste	
7	Paper & cardboard	
8	Wood	
9	Hazardous waste	
10	Special waste	
11	Bulky waste	
12	Others	

- Quantify waste collected on 4 separate days in a month (once a week) and write the average?

## 3. Operation of Island Waste Management Centre or Site

3.1 How many Staff work in Waste Management Center?

3.2 How much time is spent on waste management work per day?

3.3 Type of waste, how it was processed/ or used and volume

#	WASTE CATEGORY	HOW IT WAS PROCESSED	VOLUME PROCESSED PER WEEK (IN KG)
1	Food waste	<input type="checkbox"/> compost	
		<input type="checkbox"/> Burn	
		<input type="checkbox"/> dispose in the sea	
		<input type="checkbox"/> stored in IWMC for <input type="checkbox"/> transfer	
2	Green waste	<input type="checkbox"/> compost	
		<input type="checkbox"/> Burn	
		<input type="checkbox"/> other	



3	Plastics	<input type="checkbox"/> compacted	
		<input type="checkbox"/> Shredded	
		<input type="checkbox"/> stored in IWMC for <input type="checkbox"/> transfer	
		<input type="checkbox"/> other	
4	Metals	<input type="checkbox"/> compacted	
		<input type="checkbox"/> Shredded	
		<input type="checkbox"/> stored in IWMC for <input type="checkbox"/> transfer	
		<input type="checkbox"/> other	
5	Glass	<input type="checkbox"/> crushed	
		<input type="checkbox"/> stored in IWMC for <input type="checkbox"/> transfer	
		<input type="checkbox"/> other	
6	Construction and demolition waste	<input type="checkbox"/> crushed	
		<input type="checkbox"/> stored in IWMC for <input type="checkbox"/> transfer	
		<input type="checkbox"/> other	
7	Paper & cardboard	<input type="checkbox"/> shredded	
		<input type="checkbox"/> burned	
		<input type="checkbox"/> stored in IWMC for <input type="checkbox"/> transfer	
		<input type="checkbox"/> other	
8	Wood	<input type="checkbox"/> using the wood chipper	
		<input type="checkbox"/> burned	
		<input type="checkbox"/> stored in IWMC for transfer	
		<input type="checkbox"/> other	
9	Hazardous waste	<input type="checkbox"/> stored in IWMC for transfer	
		<input type="checkbox"/> other	
10	Special waste	<input type="checkbox"/> incinerated	
		<input type="checkbox"/> stored in IWMC for transfer	
		<input type="checkbox"/> other	
11	Bulky waste	<input type="checkbox"/> stored in IWMC for transfer	
		<input type="checkbox"/> other	
12	Others		

### 3.4 How was the processed waste was managed

DIFFERENT TYPES OF WASTE STORED IN SEGREGATION BAYS
<input type="checkbox"/> Organic waste
<input type="checkbox"/> plastics
<input type="checkbox"/> metal
<input type="checkbox"/> Glass
<input type="checkbox"/> Hazardous waste
<input type="checkbox"/> Special waste
<input type="checkbox"/> Others

### 3.5 Safety measures use by workers and available at site

<input type="checkbox"/> Use of gloves
<input type="checkbox"/> Use of mask
<input type="checkbox"/> Use of appropriate shoes/ boots
<input type="checkbox"/> Protective gear
<input type="checkbox"/> First aid kit
<input type="checkbox"/> fire equipment
<input type="checkbox"/> Others

## 4. Waste Transfer from Island to Zone 3 regional facility

### 4.1 Please list transfer vessel name and number

### 4.2 Types of waste and amount transferred

	WASTE CATEGORY	VOLUME TRANSFERRED PER WEEK (IN KG)
1	Food waste	
2	Green waste	
3	Plastics	
4	Metals	
5	Glass	
6	Construction and demolition waste	
7	Paper & cardboard	
8	Wood	
9	Hazardous waste	
10	Special waste	
11	Bulky waste	
12	Others	

*Photos to file*

1. Waste management center from the front gate?
2. Waste collection vessel entering the waste management center, or waste disposed at the waste management center
3. Waste stored in the waste management center
4. Composting
5. Waste processing, e.g., bailing, shredding etc.
6. Photo of transfer vessel

*Information compiled by:*

**Name:**

**Designation:**

**Office:**

**Contact number:**

**Email address:**

***The information provided in this report is accurate***

**Signature:**

## **References**

Clean Communities, Environmental Education and Community Mobilization Program (2006) Ministry of Environment, Energy and Water, Male', Maldives

Constitution of the Republic of Maldives (2008) President's Office, Male', Maldives

Feasibility Study for an Integrated Solid Waste Management System for Zone 3 and preparation of Engineering Design of the Regional Waste Management Facility at Thilafushi (2017) Water Solutions in association with KOCKS Ingenieure, prepared for the Ministry of Environment and Energy, Male', Maldives

Ministry of Environment and Energy (2017) State of the Environment Report, Ministry of Environment and Energy, Male', Maldives

Project Administration Manual (2018) Greater Male' Environmental Improvement and Waste Management Project, Ministry of Environment, Asian Development Bank

Project documents, Greater Male' Environmental Improvement and Waste Management Project, Ministry of Environment, Climate Change and Technology and Asian Development Bank

Rare and The Behavioural Insights Team. (2019). Behavior Change For Nature: A Behavioral Science Toolkit for Practitioners. Arlington, VA: Rare.

Single Use Plastic Phase Out Plan (2020 – 2023) Ministry of Environment, Male', Maldives

Socio-Economic impact assessment of the use of PET in the Maldives (2021) Maldives Ocean Plastics Alliance and NIG Capital, Male', Maldives

Strategic Action Plan (2019 – 2023) Government of Maldives

Waste Management Regulations – Number 2013-R/58, Ministry of Environment and Energy, Male', Maldives

## **Resources**

<https://mymaldiveshome.environment.gov.mv>

<https://ellenmacarthurfoundation.org>

<https://www.storyofstuff.org/>

<https://www.wastewiseproductsinc.com/>

<https://www.aljazeera.com>

<https://www.earthday.org/>

<https://phys.org/>

<https://livelearn.org>

