

United Nations Environment Programme

> Action Plan for Low Carbon and Resource Efficient Accommodation in Mauritius



http://www.oneplanetnetwork.org/transforming-tourism

Supported by:



and Nuclear Safety

based on a decision of the German Bundestag

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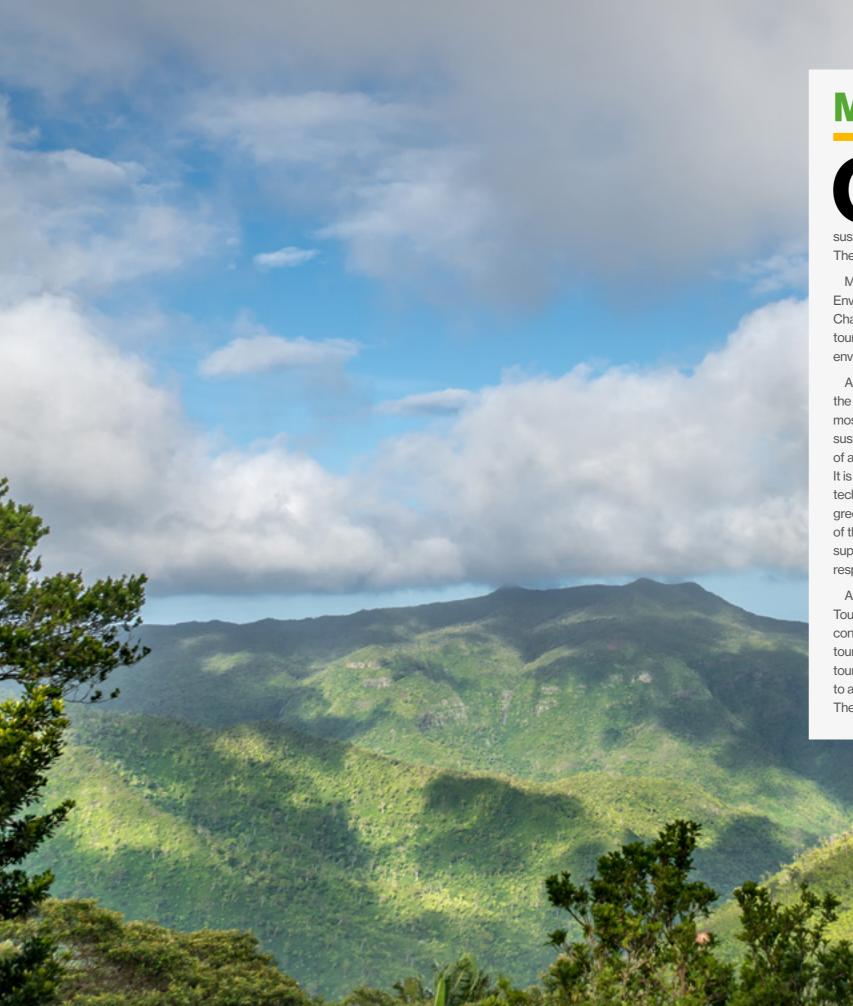
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Message from Minister of Tourism

limate change is a major concern for every individual alive today. This is why economic development and environment protection, which are inextricably linked, focus on sustainability as being central to all strategies and policies. The impacts of climate change should not be ignored.

My Ministry has, with the technical assistance of UN Environment, launched the "Transforming Tourism Value Chains" project in October 2017 in a bid to make the tourism sector more resource-efficient in a low carbon environment.

According to the World Risk Report 2018, published by the United Nations University, Mauritius is among the 10 most vulnerable countries prone to natural disasters. A sustainable, green and clean environment is today more of a necessity than an option for tourism stakeholders. It is urgent for all operators to adopt state of the art technologies and sustainable best practices to foster the greening of the sector and enhance the attractiveness of the destination. My Ministry will provide the required support and framework for tourism enterprises to embrace responsible and green practices.

An Action Plan has been drawn up by the "Transforming Tourism Value Chains" project partners after extensive consultations with industry partners and an analysis of the tourism value chain, and it calls upon hotel, guesthouse and tourist residence operators to review their business models to adopt low carbon and resource-efficient practices. The Plan aims at reducing greenhouse gas emissions and improving resource efficiency in the accommodation sector while introducing sustainable patterns for consumption, use and production. The ultimate goal of this Plan is to pave the way for Mauritius in becoming a world leader through its transition to a low carbon tourism economy that supports a unique experience for its visitors, whilst providing quality of life for its people in an inclusive, clean and safe environment.

The consultative meetings and surveys have revealed some major challenges, such as the high electricity consumption, food wastage, lack of waste infrastructure and pollution emanating from single use plastic products. My Ministry has organised several workshops to build capacity of stakeholders in respect of the best practices to be adopted to reduce waste and carbon emissions.

The determination of the Government of Mauritius is to make Mauritius a model of sustainable development. Our operators need to capitalise on the 6Rs principle, i.e. Rethink, Refuse, Reduce, Reuse, Recycle and Restore to better protect the environment and make a smart use of scarce and non-renewable resources.

I am confident that all tourism operators will commit to adopting this Action Plan and implement responsible and green practices to minimise carbon emissions and reduce tourism footprint. Our future depends on this commitment

Anil Kumarsingh Gayan, SC Minister of Tourism 5 August, 2019

Foreword

ince the creation in 1973 of the Association des Hôteliers et Restaurateurs de l'île Maurice (AHRIM), our members have been engaged in many initiatives to improve the sustainability of the sector. The actions, initiatives and engagement of our tourism industry towards national sustainable development objectives has certainly produced results. Today more than sixty hotels have reported voluntary commitments to improve their environmental performance, and twenty-eight hotels are certified by international sustainable tourism standards.

But challenges persist and grow. With an exponential growth from 1 million tourists in 2014 to 1.4 million today, a dynamic and proper scoping of national priorities and objectives is required. We are struggling with the physical constraints and limitations of our tropical hotel infrastructure, tackling the overwhelming need to cool down, and facing the effects of climate change such as coastal zone degradation, beach erosion and declining sea water quality.

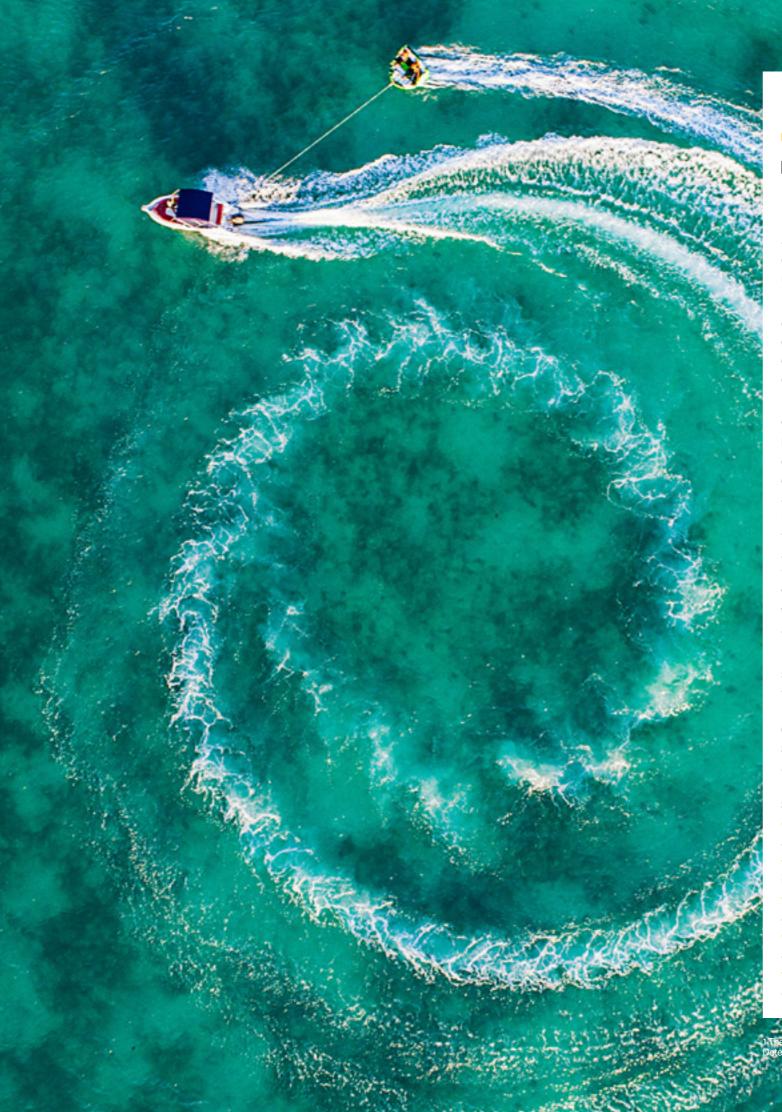
It makes sense to further mainstream sustainability not only into the usual operations of our tourism and hospitality sector but also, and simultaneously, across all economic players and the population of Mauritius. The strong relationship between the Mauritian tourism development and the achievement of the SDGs is evident. The Transforming Tourism Value Chains project has helped to further describe, analyse and assess current practices to identify priority issues with a view to determine potential solutions towards a more resource efficient and lower carbon emitting industry. Those priority issues and their dimensions need to be adequately captured in the formulation of national policy frameworks.

This proposed action plan has set objectives that are realistic and achievable which aim to reduce greenhouse gas emissions and improve resource efficiency within the Mauritius accommodation sector and its value chain. Hotels in Mauritius have the capacity to engage themselves further, lead their suppliers, inspire guests and bring benefits to the local communities. AHRIM confirms its commitment to support Mauritian hoteliers in achieving low carbon and resource efficient development. We can all make a difference.

Jocelyn Kwok

Chief Executive Officer Association des Hôteliers et Restaurateurs de l'île Maurice





Executive Summary

his action plan sets out a roadmap to a sustainable and resilient tourism accommodation sector in Mauritius. It will enable accommodation providers, their suppliers, government bodies and other stakeholders involved in tourism to safeguard the country's unique and beautiful environment and the natural resources on which tourism relies.

Tourism is of vital importance to the Mauritius economy, contributing substantially to the country's GDP and employment. However, it also contributes significantly to the country's national GHG emissions, waste generation and consumption of water and energy.

This action plan is based on an analysis of the tourism value chain, meaning not only activities that happen within hotels, but also including all activities that supply them, for example food production for hotel restaurants. A notable exclusion from the analysis is international travel. The analysis revealed that sustainability hotspots for tourism in Mauritius included food and electricity-use. Food accounts for about 27% of the GHG emissions associated with hotels and restaurants, and electricity and gas services make up 18%. In light of these findings, and following consultation with tourism stakeholders, two priority areas were defined where interventions can have the greatest impact: energy and waste.

The action plan sets out targets for the accommodation sector and its suppliers by 2030 (from a 2020 baseline¹) as follows:

Overall target:

30% reduction in GHG emissions associated with the accommodation sector and its suppliers

Sub targets:

→ 25% reduction in energy consumption of the accommodation sector

→ 20% of energy consumed by the accommodation sector is from renewable sources

→ 30% reduction in the amount of waste generated by the accommodation sector

→ 100% reduction in single-use plastic procured by the accommodation sector

→ 50% reduction in food waste generated by the accommodation sector

termined Contribution of the Republic of Mauritius.

To achieve these targets, the action plan sets out a programme of activities on energy and waste.

1. Sustainable Energy.

This programme aims to reduce the consumption of energy within the accommodation sector and businesses within its value chain. Recommendations for government and public bodies focus on ensuring an enabling environment through measures such as adequate policy formulation, provision of incentives and improving renewable energy infrastructure. Recommendations for private sector businesses focus on improving energy efficiency and reducing fossil fuel consumption.

2. Reducing Waste.

This programme aims to reduce the amount of waste generated by the accommodation sector and its value chain. Recommendations for government and public bodies focus on improving waste management infrastructure and boosting the recycling sector in order to be able to cope with waste from the growing tourism sector. Recommendations for private sector businesses focus on rethinking needs and practices, making pledges and implementing sustainable procurement to reduce waste generation at purchase level, in particular within the main waste hotspots of plastic and food. These businesses are also encouraged to collaborate with academia, research institutes and public sector partners to develop technologies and circular procurement to tackle challenges posed by increasing waste generation, scarcity of resources and land constraints for waste management.

Both programmes include actions aiming to: increase awareness of energy and waste issues and solutions; provide training, tools and resources; support collaborative action across and between sectors; create an enabling policy environment; establish adequate monitoring and reporting systems; and share good practice and lessons learned.

An implementation plan is being developed in consultation with stakeholders to accompany this action plan. The implementation plan will build upon and create synergies with initiatives already underway in the areas of energy and waste reduction. Crucial to the success of implementation will be the collaboration between stakeholders, both within the private sector and between the public and private sectors.

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Helpful definitions of terms used in the roadmap

A value chain is the entire sequence of activities or parties that provide products or services used in tourism

An environmental hotspot is an activity or process which accounts for a significant proportion of the negative environmental impact in the value chain

The GHG Protocol Corporate Standard classifies a company's GHG emissions into three 'scopes':

- Scope I emissions are direct emissions from owned or controlled sources by a hotel such us vehicles.
- Scope II emissions are indirect emissions from the generation of purchased energy consumed by a hotel such as electricity used for air conditioning

• Scope III emissions are all indirect emissions that occur in the value chain (not included in scope II) including upstream emissions, such as those generated during the production of products and services that hotels purchase (e.g. imported food) and downstream emissions such as those generated from hotel waste.

Introduction

ourism arrivals to Mauritius are increasing steadily, by around 5% each year. The sector forms a strong pillar of the Mauritian economy, contributing significantly to GDP (7.4%), employment, investment and export¹. In 2017, the main driver of growth was the services sector, which includes accommodation services². Tourism, however, also contributes significantly to national greenhouse gas (GHG) emissions and waste generation, as well as to high levels of consumption of resources such as water and energy.

We must now take action towards an energyresilient and resource-efficient model in order to make tourism, one of the most important economic sectors in Mauritius, more sustainable.

The vision of this action plan is to support Mauritius in becoming a world leader through its transition to a low carbon tourism economy that supports a unique experience for its visitors, whilst providing quality of life for its people in an inclusive, clean and safe environment³. The objective of this publication is to equip key tourism stakeholders with a strategic plan to promote sustainable consumption and production in order to improve resource efficiency and reduce GHG emissions throughout the value chains of the accommodation sector. The action plan builds on existing national tourism and environmental policies, strategies and legislation to provide a clear pathway for collaborative action by all stakeholders.

The action plan was developed following a detailed process of data gathering, consultation and analysis

at national and business levels. By mapping the accommodation value chain, it was possible to identify the environmental hotspots, where interventions can have the greatest impact. Against these hotspots, a longlist of proposed actions was produced, containing evidencebased solutions that have successfully been implemented in other countries around the world. Further consultation helped to define two priority areas to focus efforts, energy and waste, that were selected mainly due to the following considerations:

 Together they address key impacts and priority hotspots as identified by stakeholders and analysis of data by international experts;

 Stakeholders consider actions to be beneficial and feasible within time and resource constraints:

 Actions will contribute to the achievement of national policy targets, Nationally Determined Contribution (NDC - relating to international climate change targets), and the Sustainable Development Goals (SDGs).

The implementation of this action plan will require collective work and partnerships to guarantee its success and sustainability. Local ownership of the action plan and effective partnerships between stakeholders from the public, private and third sectors will be crucial to ensure successful implementation of the actions proposed and the achievement of the set targets. This action plan will be supplemented with an implementation plan developed in close collaboration with these stakeholders.

1 WTTC Travel & Tourism Economic Impact 2018 Mauritius, 2018 https://www.wttc.org/-/media/files/reports/economic-impact-research/countries-2018/mauritius2018.pdf keholder's inputs gathered in a visioning exercise during an Action Plan workshop, June 2018

Main components and structure of the action plan

This action plan aims to meet the needs of tourism businesses and their value chains, supporting trade bodies and government ministries, departments and agencies. It includes information on the current situation of the tourism sector of Mauritius in relation to sustainability and highlights key environmental hotspots relating to the sector's direct operations and those of its value chain. This action plan identifies two programmes that provide the national, crosssectoral and individual tourism business-level actions required to address these hotspots before or by 2030 at the latest.

The action plan will be followed with an implementation plan developed in close collaboration with the local stakeholders.

This action plan supports the achievement of the UN Sustainable Development Goals (SDGs) and the goals identified in the Mauritius's Nationally Determined Contribution (NDC) submitted to the UNFCCC Secretariat.

Who is the action plan for?

→ Government ministries, agencies and departments

- → Accommodation staff (management, procurement, operations)
- → Tour operators
- → Accommodation sector suppliers
- → Trade bodies and associations
- Certification bodies
- → Non-governmental organisations
- → Local communities
- → Universities and training institutions



The contribution of the action plan programmes to Sustainable Development Goals



Tourism overview, context and sustainability snapshot

Mauritius is known as a paradise destination and its tourism sector has boomed during the past decade. This boom has helped the country to become one of the most successful and competitive economies in Africa but, as in most destinations, tourism growth has also brought negative impacts to the very environment and natural resources on which it relies.

Efforts must be focused on minimising those negative impacts and driving the tourism sector in Mauritius towards becoming more sustainable. Tourism needs to be understood not only as tool for economic development, but also for environmental conservation and resource efficiency, ensuring the long-term sustainability of the tourism industry is maintained. The first step to achieving this objective is understanding the magnitude of such impacts.

%

Country and tourism facts

AREA:

POPULATION: 1.3m 5



NUMBER OF ROOMS:

13,500

ARRIVALS (2028 FORECAST): 1.9m

Tamarin

1,864 km²

Port Louis

A Infrastructure

86% of energy comes from imported fossil fuels. Only 14% come from local renewable sources.

90 Lack of waste management and recycling infrastructure, which means most waste ends up in landfill, contributing to GHG emissions and pollution

-

Decreasing water supply due to old pipes and infrastructure causing water losses. Lack of wastewater infrastructure.

Souillac

CONTRIBUTION TO GDP:

7.4% (direct)

NUMBER OF HOTELS:

DIRECT JOBS: 7.2%

囲

112

77%

OCCUPANCY RATES:

CONTRIBUTION TO GDP: 23.8% (indirect)

INDIRECT JOBS: 35.9%

Poudre d'Or

Impacts of tourism

GHG EMISSIONS: 16%

(0.9 mt CO2e) of national GHG emissions are associated with hotels and



10X

A tourist uses 10x as much water as the average citizen



19%

of commercial electricity demand comes from hotels and restaurants



WASTE: **170t**

Survey with hotels shows annual waste could be up to 170 tonnes per hotel.



MAURITIUS EMITS:

19%

4.8mt CO2e²



1 These include emissions embedded in food and materials that hotels purchase 2 2013 DATA, NC3

SECTION 4 Policy context in country

Mauritius is amongst the countries most affected by climate change and natural hazards. According to the 2014 UNFCCC World Risk Report, Mauritius ranks 14th in a list of countries most at risk of climate change disasters, and 7th in a list of countries most exposed to natural hazards. Climate change adaptation and mitigation are among the top priorities in the

Government's programme¹, which includes diverse legislative and policy measures to reduce GHG emissions and improve resource efficiency.

Mauritius has made ambitious commitments in relation to climate change mitigation. The Government plans to

achieve these through a combination of energy and waste policy development; promotion of sustainable consumption and production; greener infrastructure and technology; the expansion of renewable energy sources; increased energy efficiency; sustainable and integrated waste management; climate smart agriculture; and organic-farming.

International climate change commitments	Tourism	Climate change and environment	Waste	Food		Energy	Water
Government of the Republic of Mauritius	Ministry of Tourism and its two main bodies: The Mauritius Tourism Authority and the Tourism Promotion Authority	Climate Change Division (under the aegis of the Ministry of Social Security, National Solidarity, Environment and Sustainable Development – MSSNSESD)	Solid Waste Management Division – SWMD (Part of the Ministry of Social Security, National Solidarity, Environment and Sustainable Development - MSSNSESD)	Ministry of Agro-Industry and Food Security	Food and Agricultural Research and Extension Institute, FAREI (Under the aegis of the Ministry of Agriculture),	Ministry of Energy and Public Utilities (MEPU) and its three main bodies: Utility Regulatory Authority; Energy Efficiency Management Office (EEMO); Mauritius Renewable Energy Agency (MARENA).	Ministry of Energy and Public Utilities (MEPU) and its main body, the Water Resources Unit.
MANDATE	Determines, prepares and executes the national tourism policy and promotes the tourism industry.	Responsible for the development, coordination and implementation of climate change adaptation and mitigation policies, programmes and initiatives.	Responsible for the protection of the environment and public health through the proper management of solid and hazardous waste.	The Ministry is responsible for the development of agriculture and the promotion of the agro- industry, focusing on food safety, supply, quality, innovation and new technology.	FAREI has the responsibility to conduct research into non-sugar crops, livestock, forestry and to provide an extension service to farmers (i.e. training on MauriGAP).	Responsible for the design and implementation of energy policy.	Responsible for formulating policy and strategy, managing water supply and distribution and implementing infrastructure projects.
Nationally Determined Contribution (NDC) Commitment submitted to the UNFCCC Secretariat under the 2015 Paris Agreement of a 30% reduction in GHG emissions by 2030 relative to the business-as-usual scenario of 7 million metric tonnes CO2 equivalent, subject to international, technical and financial support. Recognition of the complex inter-relations between climate change and the tourism industry and acknowledgement of the need for action.	<text><section-header><text><text></text></text></section-header></text>	 Environment Protection Act 2002 Aims to protect and manage the environmental assets of Mauritius while ensuring quality of life and sustainable development for present and future generations. National Climate Change Adaptation Policy Framework Aims to integrate and mainstream climate change into the core development policies, strategies and plans of Mauritius. Climate Change Act (2019) This act will aim to implement policies, strategies and plans to further mitigate the effects of climate change and promote adaptation measures. 	Legally, waste management is covered by the Environment Protection Act (EPA) 2002 and the Local Government Act (LGA) 2011, There are various regulations made under the two Acts: • Environment Protection (Standards for hazardous wastes) Regulations 2001 • Local Government Act (Dumping and Waste Carriers) Regulations 2003 • Local Government Act (Registration of Scavenging Contractors) Regulations 2004 • Environment Protection (Collection, Storage, Treatment, Use and Disposal of Waste Oil) Regulations 2006 • Local Government Act (Registration of Recycler and Exporter) Regulations 2013 • Environment Protection (Banning of Plastic Bags) Regulations and Amendment 2015 Strategy and Action Plan for a new Solid Waste Management and Resource Recovery System in development. ²		ges/swmd/SWMD-Strategy-and-Action-Plan.a	MEPU's Long-Term Energy Strategy 2009-2025 Covers a number of sectors, including tourism. This strategy targets 35% self-sufficiency by 2025 in terms of electricity supply through the deployment of renewable sources of energy and is supported by: The Energy Efficiency Act The Renewable Energy Agency Act 2015 MARENA Strategic Plan 2018- 2023	National Water Policy (2014)Sets targets of 100% access to safe and reliable water supply by 2020 and the extension of the public sewerage infrastructure to achieve 75% coverage by 2040.Mational Integrated Water Resources Management (IWRM) PlanSets objectives and priority actions for five years from 2016, including promotion of water efficiency at all levels.sets objectives and priority actions for five years from 2016, including promotion of water efficiency at all levels.20Change.pdf

This action plan has been designed in collaboration with the relevant policy bodies and aims to establish synergies between such policies in relation to the tourism sector and to provide a framework to put them into action.

Environmental hotspots in the tourism value chain

Mapping out the tourism value chain provides the 'big picture' related to the activities, stakeholders and impacts associated with the tourism sector.

This graphic shows a summary of the priority environmental issues or "hotspots" identified throughout the value chain of hotels and restaurants in Mauritius.

It indicates where action should be focused to have the largest effect on reducing GHG emissions and improving resource efficiency.

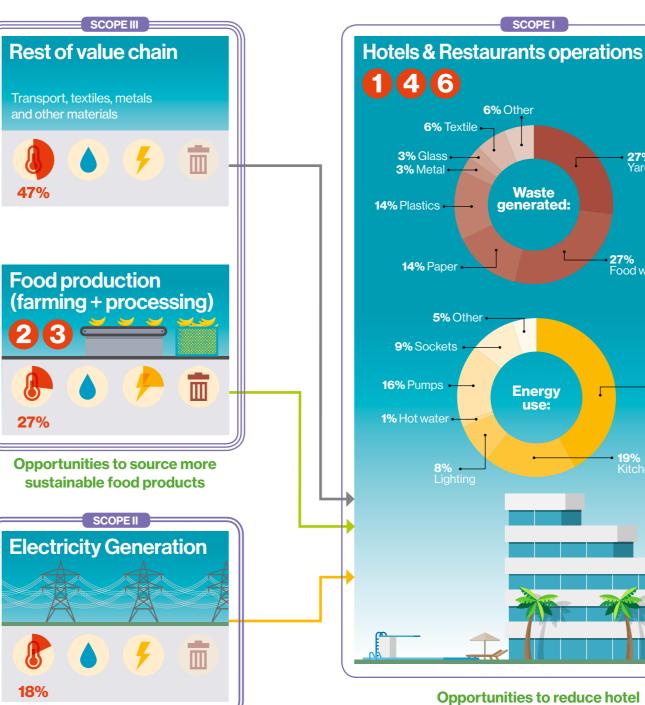
The three main areas with the highest GHG emissions are:

→ Food production. Including farming and processing, food accounts for around 27% of the GHG emissions associated with hotels and restaurants.

→ Electricity generation. Electricity that is purchased and used by hotels and restaurants represents 18% of GHG emissions.

→ Waste landfilled. Waste generated through hotel and restaurant activities that ends up in landfill is associated with 8% of their GHG emissions.

Data source: Eora Version 199.82, 2013 (http://www.worldmrio.com/)



Opportunities to source more renewable energy

Opportunities to reduce hotel energy use and waste

PRIORITY HOTSPOTS IDENTIFIED IN MAURITIUS¹ Each one of the

numbered boxes to the right represents a significant environmental impact hotspot identified by project partners and tourism stakeholders in Mauritius.

F1

1. Hotel and restaurant activities using energy. Electricity accounts for 18% of GHG emissions. Lighting, heating, ventilation and air conditioning (HVAC) make up most of hotel's energy demand with AC being 42-45% ²of electricity consumption.

2

2. Processing and packing of meat and dairy products. Slaughterhouse processing and energy used in chilled storage and refrigeration contribute to post-farm-gate emissions.

Π

3. Primary production of produce.

GHG emissions from use of fertilizers and organic waste. Fuel use for in-field operations. Energy use in the processing. chill and freezing. Water used to grow food crops. Unharvested crops and post-harvest crop waste is estimated to be up to 20%.



4. Food waste in hotel, and restaurants.

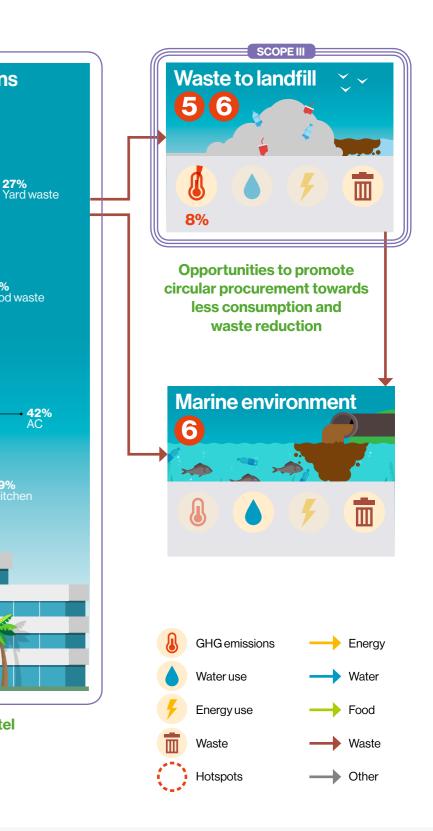
An average of 7 to 12% of meat is wasted in kitchens, with some hotel surveys indicating overall food waste levels of up to 40%. Unused food is likely to account for a large proportion of organic waste and presents a high potential for biogas generation via anaerobic digestion.

m 5

5. Lack of capacity in waste infrastructure.

27% Food waste

In 2016 only around 6.7% of waste was recycled. According to surveys with 6 hotels, annual waste generated by hotels varies from 11-28 tonnes for medium hotels to 97-170 tonnes for large hotels. Most waste from hotels is sent to landfill.



面 6

6. Waste and pollution from single use items.

Waste from single use plastic products creating litter and marine pollution, damaging natural environments and marine life, LDPE, HDPE & PET are generated in largest amounts. Only 40% of PET bottles collected are processed and exported³.

1 http://www.oneplanetnetwork.org/ sites/default/files/iki_country_report_ mauritius_final.pdf 2 Graph energy use source: http:// www.pnee.mu/; 3 Graph waste generated: Information from Mauritius Solid Waste Management Division.

SECTION 6 Targets

To help track progress towards the overall objective of a 30% reduction in GHG emissions associated with the accommodation sector and its suppliers, top-level targets are proposed for 2030. They have been set using national studies and international case studies and they are aligned with national targets and international commitments by Mauritius. These targets were validated by local stakeholders.

The action plan sets out the following sub-targets for the accommodation sector by 2030 (from a 2020 baseline¹):

25% reduction in energy consumption of the accommodation sector

20% of energy consumed by the accommodation sector is from renewable sources

30% reduction in the amount of waste generated by the accommodation sector

100% reduction in single-use plastic procured by the accommodation sector

50% reduction in food waste generated by the accommodation sector

The following table provides a five-year breakdown of the targets and illustrates their relation to environmental hotspots and the Sustainable Development Goals. The monitoring and evaluation of these targets is described in Section 10.

1 The reduction targets for GHG emissions, energy consumption and waste generation will be set relative to a Business-As-Usual (BAU) scenario. This is in line with the Nationally Determined Contribution of the Republic of Mauritius.

2 This target focuses on the elements within scope 3 that are associated with the largest amounts of GHG emissions, which according to the Eora global supply chain database (https://www.worldmrio.com) are waste and purchased food. These are also the parts of the value chain that accommodation providers can easily influence within their own activities such as through implementing sustainable procurement and reducing the generation of waste

3 https://www.wwf.org.uk/updates/how-does-plastic-end-ocean 4 https://champions123.org/the-business-case-for-reducing-food-loss-and-waste-hotels/



GHG emissions

The headline target is to reduce the GHG emissions associated with the accommodation sector and its suppliers by 30 % by 2030 from a 2020 baseline¹, this is in line with the national GHG emissions target.

Analysis carried out in the preparation of this action plan suggests that this target can be mostly achieved through interventions that have positive financial returns for hotels and that are readily available, such as replacing air conditioning units with more efficient ones and reducing food waste.



Energy

Most of the energy consumed by hotels comes from fossil fuels. According to the Programme National d'Efficacité Energétique à l'île Maurice – National Energy Efficiency Programme of Mauritius (PNEE), this target can easily be achieved by improving hotel energy management through energy efficiency measures and the use of renewable sources.

Accommodation providers representing at least 30% of rooms are monitoring GHG emissions.

2020

Accommodation providers representing at least 30% of rooms are monitoring energy consumption.

15% reduction in the energy consumption of the accommodation sector

2025

20% reduction

(fuel, electricity, food, waste).

in GHG emissions in Scope I - III²

10% of energy consumed

by the accommodation is from renewable sources.

Solid waste

Improper waste management causes air, water and soil pollution, discharging carbon dioxide and methane into the atmosphere and chemicals and pesticides into the earth and groundwater. Reducing waste generation will mean that supplies and materials are being used more efficiently and the costs of disposal are reduced.

Plastic waste

Up to 80 percent of ocean plastic pollution worldwide comes from land sources³. This target aims to eliminate selected single-use plastics items (such as plastic straws, cups and cutlery) all together, focusing on procurement and therefore ultimately reducing plastic waste. Indispensable single-use items should be replaced with environmentally friendly alternatives.

Food waste



A recent study⁴ showed that 42 hotels measuring food waste were able to reduce it by an average 21% in one year, suggesting that a 50% reduction in ten years – in line with SDG target 12.3 - is feasible. Hotels made \$7 profit for every \$1 invested in reducing food waste. Reducing food waste at source, redistribution and diverting it for animal feed all count towards meeting the target.

Accommodation providers representing at least 30% of rooms are monitoring waste.

20% reduction

in the amount of waste generated by the accommodation sector.

Accommodation providers representing at least 30% of rooms nights are monitoring single-use plastic procurement.

Accommodation providers

representing at least 30% of

rooms are monitoring food waste.

in single-use plastic procured by the accommodation sector.

75% reduction

25% reduction

in amount of food waste generated by the accommodation sector.

2030	SDGs Hotspots
30% reduction in GHG emissions in Scope I – III ² (fuel, electricity, food, waste).	13 CLIMATE (1) (2) (3) (4) (5) (1) (2) (3) (4) (5) (1) (2) (3) (4) (5) (1) (2) (3) (4) (5) (1) (2) (5) (4) (5) (4) (5) (4) (5) (4) (5) (4) (5) (4) (5) (5) (4) (5)
25% reduction in the energy consumption of the accommodation sector.	TARGET 7-3 12 12 12 12 12 12 12 12 13 12 13 12 13 12 13 13 13 13 13 13 13 13 13 13
20% of energy consumed by the accommodation sector is from renewable sources.	TARGET 7-2 12 12 12 12 12 12 12 12 12 1
30% reduction in the amount of waste generated by the accommodation sector.	TARGET 12-5 34 34 5 5 6 6 6 6 6 6 6 6
100% reduction in single-use plastic procured by the accommodation sector.	TARGET 12-3 50% HALWE GLOBAL PER CARTIN FOOD WASTE
50% reduction in amount of food waste generated by the accommodation sector.	TARGET 14-1 34 5 6

Overview of actions

To support Mauritius in becoming a sustainable tourism destination, this action plan divides activities into two distinct programmes:

Sustainable Energy. This programme aims to reduce the consumption of energy within the accommodation sector and businesses within its value chain. Recommendations for government and public bodies focus on ensuring an enabling environment through the implementation of measures such as adequate policy formulation, provision of incentives and improving renewable energy infrastructure. Recommendations for private sector businesses focus on improving energy efficiency and increasing the proportion of consumption and production of renewable energy to reduce fossil fuel consumption.

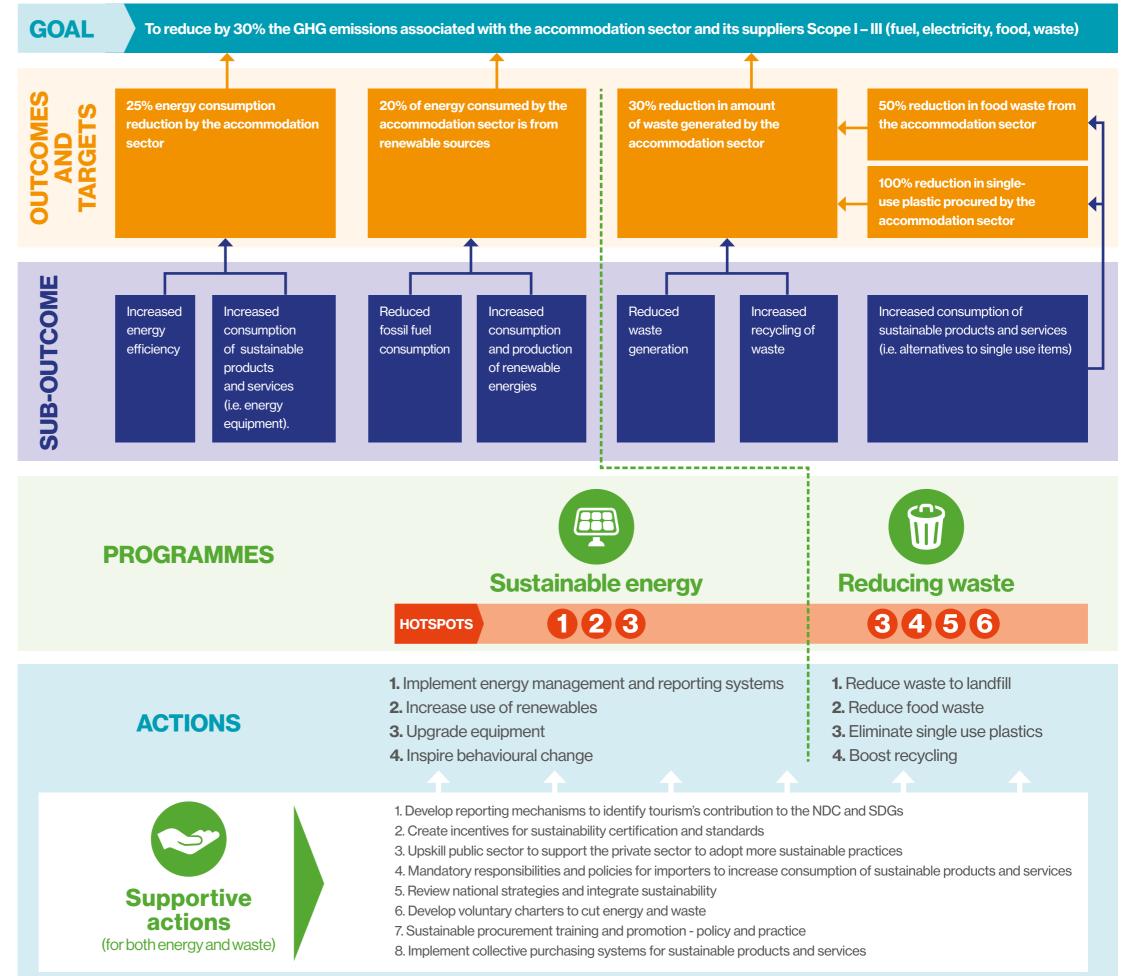
Reducing Waste. This programme aims to reduce the amount of waste generated by the accommodation sector and its value chain. Recommendations for government and public bodies focus on improving waste management infrastructure and boosting the recycling sector in order to be able to cope with waste from the growing tourism sector. Recommendations for private sector businesses focus on rethinking needs and practices, making pledges and implementing sustainable procurement to reduce waste generation at purchase level, in particular within the main waste hotspots of plastic and food. These businesses are also encouraged to collaborate with academies, research institutes and public sector partners to develop technologies and circular procurement to tackle challenges posed by increasing waste generation, scarcity of resources and land constraints for waste management.

Both programmes include actions aiming to:

- increase awareness of energy and waste issues and solutions
- provide training, tools and resources to build capacity
- support collaborative action across and between sectors
- create an enabling policy environment
- establish adequate monitoring and reporting systems
- share good practice and lessons learned

It is important to note that there are already several initiatives and programmes in Mauritius underway in the areas of energy efficiency and waste reduction. The forthcoming implementation plan that will complement this document will take these initiatives into account, building upon them and establishing relevant synergies. Finally, a framework will be provided to monitor and evaluate the progress of this action plan as well as the effectiveness of the actions set out in each programme.

All actions should be inclusive and provide equitable opportunities for the engagement and participation of all genders and ethnic groups.



Implement energy management and reporting systems

A set of actions to enable businesses to put in systems to increase energy efficiency and reduce costs, whilst encouraging the monitoring and reporting of consumption.

Government and agencies:

→ Develop an energy and GHG emissions reporting framework for the accommodation sector to encourage consumption monitoring and reduction.

→ Introduce mandatory energy auditing for large consumers including accommodation providers and their suppliers encouraging reporting from all consumers (emphasising cost saving incentives).

→ Incentivize uptake of energy certification by providing training on energy management and energy auditing for hotels and by facilitating partnerships with energy auditing specialists.

Accommodation sector:

→ Implement an energy management system to increase efficiency and reduce consumption (e.g. ISO 50001).

- → Provide training, tools and resources to staff relating to energy efficiency and monitoring and reporting of energy consumption and associated GHG emissions¹.
- → Set targets to reduce energy consumption and operating costs, reviewing progress periodically.

→ Report and publicise energy consumption and GHG emissions through corporate sustainability reports and proposed national reporting framework.

Stakeholders:

→ Ministry of Energy and Public Utilities

→ Ministry of Finance, Mauritius Chamber of Commerce and Industry

- → Ministry of Tourism
- → Ministry of Environment and Sustainable Development
- → Energy Efficiency Management Office
- → Climate Change Division
- Central Electricity Board
- → Hotel and business associations
- → Universities and training institutions
- → Accommodation providers

Sustainable energy

Increase use of renewable energy

Encouraging the private sector to invest in renewable energy reduces fossil fuel consumption and increases the share of renewable energy available on the national grid.

Government and agencies:

→ Enhance incentives for the accommodation sector to install renewable energy technologies such as solar heaters and photovoltaic solar panels through tax credits or other fiscal instruments.

 → Improve and increase solar energy infrastructure.
 → Develop a pilot project for biogas production using food waste, green waste and sewage in partnership with accommodation providers and other value chain

Accommodation sector:

businesses (i.e. farmers, food suppliers).

→ Assess the potential for introducing renewable energy systems such as solar heaters and photovoltaic solar panels and then integrate renewable energy systems where feasible.

 Assess the potential of using food waste, green waste and sewage to produce biogas for cooking and other activities and implement biogas systems where feasible.
 Train staff in the maintenance of renewable energy systems to maximise efficiency.¹

Stakeholders:

- → Ministry of Energy and Public Utilities
- → Mauritius Renewable Energy Agency
- → Solid Waste Management Division
- → Ministry of Finance
- Ministry of Tourism
- → Central Electricity Board
- → Hotels and business associations
- → Accommodation providers



Upgrade equipment

These actions aim to increase access to highly energy efficient devices and appliances to enable the private sector to retrofit their energy technologies and systems

Government and agencies:

→ Encourage the accommodation sector to procure energy efficient products and services by:

- implementing an awareness campaign to promote the uptake of energy efficient products;
- developing a list of sustainable procurement criteria, as well as recommended eco-labels;
- providing information on product availability, finance mechanisms, and consumer advice;
- providing incentives to buy energy efficient equipment (i.e. air conditioning and lighting) or tax credits to green energy certified accommodation providers.

Accommodation sector:

→ Review existing equipment such as air conditioning, kitchen equipment, laundry, lighting, etc. and assess opportunities to replace them with more efficient alternative.

→ Incorporate energy efficiency criteria, such as climate friendly refrigerants or minimum energy efficiency ratio (EER), and other sustainability criteria, such as locally available, take-back system or reduced packaging, into procurement specifications for equipment.

Stakeholders:

- → Ministry of Energy and Public Utilities
- Ministry of Tourism
- Ministry of Finance
- → Energy Efficiency Management Office
- → Business and hotel associations
- → Mauritius Chamber of Commerce and Industry
- → Accommodation providers

1 Ensure equitable opportunities and access to training and resources for all relevant staff, irrespective of gender or ethnicity. 2 http://www.pnee.mu/ 3 https://prodesign.mu/wordpress/wp-content/uploads/2016/07/Water-and-electricity-consumption.pdf

Inspire behavioural change

Engaging staff and guests to promote behaviours that improve energy performance

Government and agencies:

→ Implement an awareness raising campaign on good practices, targeting staff and guests to support and encourage behavioural change.

→ Provide businesses with feedback on their energy use, including how their energy consumption compares with similar accommodation. This can strongly influence behaviour change (e.g. commented energy bills).

Accommodation sector:

→ Promote positive behaviour change in staff and guests, building on awareness raising campaigns.

→ Real-time displays should be installed in staff areas, feeding online reports of energy use.

 → Improving staff and tourists' energy behaviours by testing different campaigns, trainings, and approaches.
 → Train accommodation providers' staff (as per Energy Management System section, above).¹

Stakeholders:

- → Ministry of Tourism
- → Tourism Authority
- → Energy Efficiency Management Office
- → Mauritius Council of Social Services
- → Hotels and business associations
- \rightarrow Accommodation providers

Audits from the

Programme d'Efficacité Energétique (PNEE) have shown that significant savings up to 35% of energy bill are possible with the introduction of an Energy Management System (EMS) in large hotels when energy efficiency and high-performance solutions are taken into account

Hotels using Room Energy Management Systems consume about 37.5% less electricity than those not using them



Reduce waste to landfill

Promoting segregation, monitoring and reduction of waste, as well as providing adequate recycling services, will support the accommodation sector to substantially reduce the amount of waste it sends to landfill.

Government and agencies:

→ Create a system for monitoring waste reduction across the accommodation sector by:

- Conducting a baseline/audit of the weight and types of waste generated;
- Implementing a pilot project on the feasibility of a mandatory reporting scheme (for instance, as a requirement for renewing hotel licences); - Creating and promoting a mandatory waste reporting scheme.

→ Support and encourage private sector action by developing and implementing an awareness raising campaign on waste, following the 'reduce, reuse, recycle' model with emphasis on elimination and reduction of waste aiming a transition from 3Rs to Zero Waste gradually.

→ Support reduction in the amount of waste landfilled through the creation of incentives and penalties (e.g. landfill tax) and improved waste management infrastructure.

→ Develop partnerships between public, private and third sectors to facilitate recycling initiatives.

→ Review the national waste management strategy to improve regulation, infrastructure and services.

→ Facilitate the introduction of a segregated waste management service for the tourism sector through consultation, training and improved infrastructure to support the uptake of recycling.

Accomodation sector:

→ Train staff on waste management procedures including segregation, disposal, monitoring and reporting and estimation of GHG emissions from waste.1

→ Introduce procedures to reduce the amount of waste generated across the different waste streams through

elimination and substitution. This should be aligned to the capacity of infrastructure to process segregated waste. → Promote staff/guest use of waste separation and monitoring procedures through appropriate signposting and communications. Identify priorities and needs of minorities groups dealing in waste separation and segregation to address and prevent risks of waste exposure.

Stakeholders:

- → Ministry of Environment and Sustainable Development,
- → Ministry of Tourism, Ministry of Finance,
- → Solid Waste Management Division (SWMD)
- → Hotel and business associations
- → Universities and training institutions
- → Mauritius Council of Social Services (MACOSS)
- → Accommodation providers



accommodation sector including incentives to reduce

Reduce food waste

food waste.

→ Support the development of partnerships between accommodation providers, farmers and NGOs to reduce the amount of food waste generated and going to landfill.

Introducing and promoting soft measures for food waste

reduction significantly reduces costs and GHG emissions.

Accommodation sector:

→ Segregate and monitor food waste and establish targets for reduction and continual improvement.

→ Train staff on food waste reduction including measures such as minimising food waste while cooking, monitoring and reviewing plate portions, tracking the popularity of dishes, and encouraging staff to take unused food home.1

→ Establish local partnerships to support alternatives to sending food waste to landfill e.g. with farmers for anaerobic digestion, or local NGOs for food donations.

→ Train staff in food-safety and hygiene principles for donation of food to local communities and people in need and for food waste storage.

→ Increase agritourism linkages to optimise purchasing of fresh food from local farmers, buying more often and less each time, to reduce spoilage associated with transport and storage, increasing benefits for local farmers.

→ Introduce a composting system using hotel food and green waste and produce fresh food on site, where feasible.

Stakeholders:

- → Ministry of Agro Industry and Food Security
- → Ministry of Tourism
- → Food and Agricultural Extension Institute
- → Solid Waste Management Division
- Universities and training institutions
- → Hotels and business associations
- → Accommodation providers
- → SME Mauritius
- → Cooperatives, recyclers and NGOs

1 Ensure equitable opportunities and access to training and resources for all relevant staff, irrespective of gender or ethnicity.

Eliminate single use plastics

Introducing measures to eliminate the consumption of single use plastics will help to protect land and marine ecosystems and lagoons.

Government and agencies:

→ Implement an awareness raising campaign for the accommodation sector with an emphasis on eliminating single use items and promoting more environmentally friendly alternatives to plastic where elimination is not possible.

→ Incentivise the accommodation sector to eliminate or reduce procurement of single use plastics (e.g. by removing tax imports on alternative, eco-friendly products).

→ Conduct a feasibility study on introducing a national ban on single use plastics.

Accommodation sector:

→ Assess the procurement and consumption of single use plastics items and establish a policy with targets for the elimination or replacement with more environmentally friendly alternatives where elimination is not possible. → Train staff and communicate policy to staff and guests on the urgency of phasing out from single use plastics, inspiring action beyond the hotels activities in their houses and communities.1

→ Work with suppliers to find solutions to eliminate single use plastics (i.e. eliminate/reduce packaging of products) and agree supply of environment-friendly alternatives.

→ Promote and/or support activities within the communities such as beach or green areas clean-up.

Stakeholders:

- → Ministry of Environment and Sustainable Development
- \rightarrow Ministry of Finance
- → Ministry of Tourism
- → SME Mauritius
- → Solid Waste Management Division
- → Mauritius Council of Social Services
- \rightarrow Hotel and business associations
- → Accommodation providers
- → Mauritius Chamber of Commerce and Industry
- → Cooperatives, recyclers, NGOs



Boost recycling

Reusing or transforming waste into an input for production reduces the amount of waste going to landfill and contributes to creating circular economies.

Government and agencies:

→ Support investment and entrepreneurship across the waste collection and recycling sector through incentives (such as existing incentives on PET bottles or PET flakes exported or tax credits for investments in anaerobic composting plants for organic waste recycling).

→ Assess the business needs of waste collectors and recyclers and put in place mechanisms to support sustainable growth and coordinated work e.g. by encouraging the creation of an association for the recycling sector, providing training on sustainable business development, facilitating partnerships with the accommodation sector.

 \rightarrow Develop and enforce recycling regulations.

Accommodation sector:

→ Assess waste streams and identify opportunities for re-using and recycling to establish corresponding waste management procedures.

→ Develop sector-wide partnerships with waste collection and recycling businesses to reduce the amount of waste landfilled and ensure adequate disposal of waste.

Stakeholders:

- Ministry of Tourism
- → Ministry of Environment and Sustainable Development
- → Ministry of Finance
- → Ministry of Agro-Industry and Food Security
- → Solid Waste Management Division
- → Food and Agricultural Extension Institute (FAREI)
- → SME Mauritius
- → Cooperatives, recyclers, NGOs
- → Mauritius Chamber of Commerce and Industry
- → Hotel and business associations
- → Accommodation providers



Supportive actions (for energy and waste programmes)

The following set of actions are cross-cutting of both programmes and are needed to support the implementation of both.

Government and agencies:

→ Develop a reporting mechanism to disaggregate the contribution of the tourism sector to the achievement of the NDC and SDGs.

→ Create incentives and support the adoption of GSTC¹ accredited standards such as the MS165 for the accommodation sector (i.e. through training, support in certification, financing, etc.).

→ Provide training to public sector officials on policy formulation to support the private sector to adopt more sustainable practices (e.g. creation of incentives for renewable energy system, tax credits, etc).

→ Influence the development of mandatory responsibilities and policies for importers to increase the availability of sustainable products and services (i.e. mandatory obligation for importers of electrical equipment to ensure only certified products are imported and that end of life responsibility is assumed through initiatives such as take-back systems, reduction of packaging, no single use plastics, etc.).

→ Review the national tourism strategy to identify opportunities to integrate sustainability such as enabling tourism businesses to become more sustainable and raising awareness to support sustainable consumption and production.



1 GSTC = Global Sustainable Tourism Council https://www.gstcouncil.org/ 2 Data gathered by the Transforming Tourism Value Chain project. Estimations calculated by the Technical University of Denmark (DTU).



Accommodation sector:

→ Develop a voluntary charter or agreement for the accommodation sector with pledges to reduce energy consumption and waste generation and to adopt sustainable procurement policies in order to be eligible for incentives and/or support (e.g. support and advice to buy energy efficient equipment, renewable energy systems, training, etc.)

→ Undertake a market readiness analysis of high resource intensive products (i.e. air conditioning, fresh produce and alternatives to single use plastics) looking at both demand and supply in the local market, so as to establish relevant sustainable procurement criteria.

→ Deliver sector-wide training and policy development on: - sustainable procurement to encourage businesses to include sustainability criteria in their purchasing polices to reduce energy consumption, waste generation and GHG emissions, with an emphasis on buying locally to reduce environmental impacts and support local economies.

- low carbon menus for chefs to reduce GHG emissions (e.g. procure food locally, serve less meat, minimize food waste, be energy efficient in the kitchen, etc.)

→ Develop case studies on sustainable practices and resource efficiency with hotels and disseminate them across the sector to inspire action.

→ Develop a business driven extended producer responsibilities mechanism to promote circular economies and sustainable consumption and production patterns.

→ Conduct a sector-level feasibility study on implementing a collective purchasing system for accommodation providers for sustainable products and services (particularly SMEs) to enable economies of scale to be achieved.

Stakeholders:

- → Ministry of Finance
- → Ministry of Environment and Sustainable Development
- → Ministry of Tourism
- → Public Procurement Office
- → Climate Change Division
- \rightarrow Universities and training institutions
- → Mauritius Bureau of Standards
- → Mauritius Chamber of Commerce and Industry.
- \rightarrow Universities and training institutions
- \rightarrow Hotel and business associations
- → SME Mauritius

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Estimations

using data gathered from hotels in Mauritius show that a 50% food waste reduction through prevention by 80% of hotels in Mauritius within a 10-year period would reduce a total of 31,758 tonnes CO2eq, corresponding to 3.5% of hotel and restaurants emissions. This would save around 4.6 million USD.

GHG avoided through disposal practices are estimated at 48,337 CO2eq in 10 years period using anaerobic digestion and 26,306 CO2eq through composting.² .



Government and agencies

Accommodation sector

Timeline for the implementation of the action plan and its programmes and activities

	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
	Implemer	nt energy manageme	nt and reporting syst	ems							
	Increase	use of renewables									
	Upgrade e	equipment									
Energy	Inspire be	havioural change									
	Reduce w	aste to landfill									
	Reduce fo	ood waste									
Waste		single use plastics									
		ycling and create circ									
			ns to identify tourism's		NDC and SDGs						
Supportive actions			bility certification and								
	Opskii pu		rt the private sector to								
		Reviewn	Mandator ational strategies and		l policies for importers	to increase consump	tion of sustainable pro	oducts and services			
	Developy		cut energy and waste								
			ning and promotion - p								
	Low carb	on menus training an	d implementation of i	it in the hotel's resta	urants						
					practices and resource	e efficiency					
		Impleme	nt collective purchasi	ing systems for sust	ainable products and	services					

Summary of recommendations

The achievement of the goals of this action plan will require cross-sector action at multiple levels. The public sector will provide the enabling environment for change. Businesses will need to commit to changing their practices.

1. Increasing awareness of energy and waste issues and solutions

Government and agencies

→ Develop awareness raising campaigns targeting accommodation providers and guests on: sustainable procurement; energy management and; waste reduction/elimination.

Accommodation sector

→ Communicate to staff and guests about reducing waste, saving water and reducing energy consumption.

2. Providing training, tools and resources

Government and agencies

→ Train public sector officials on policy formulation to support the private sector to adopt more sustainable practices.

→ Train accommodation sector on energy and waste management, auditing and reporting.

→ Undertake market analysis of high resource intensive products and services to establish sustainability criteria.

Accommodation sector

→ Sector-wide training for staff on sustainable procurement and energy and waste management and monitoring.

3. Supporting collaborative action across and between sectors

Government and agencies

→ Assess the business needs of waste collectors and recyclers and support sustainable growth and collaboration.

Accommodation sector

→ Develop sector-wide initiatives to increase the procurement and use of energy efficient products and services.

→ Develop a voluntary agreement for the accommodation sector with pledges to reduce energy consumption and waste generation.

→ Develop sector-wide partnerships with waste collection and recycling businesses to reduce the amount of waste landfilled and ensure adequate disposal of waste.

→ Increase agritourism linkages that optimise purchasing of fresh food from local farmers to reduce spoilage and increase benefits for local farmers.

4. Creating supportive policies and infrastructure

Government and agencies

→ Provide incentives to the accommodation sector through tax credits, investment or other fiscal instruments.

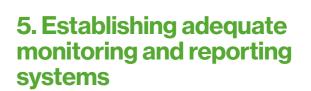
→ Review the national tourism, waste and energy strategies to identify new opportunities to enable tourism businesses to become more sustainable.

Accommodation sector

- → Implement an energy management system.
- → Introduce renewable energy systems.

→ Reduce the amount of waste landfilled, through elimination, and substitution policies.

→ Introduce waste separation and monitoring systems, composting systems and fresh food production.



Government and agencies

→ Develop a reporting mechanism to segregate the contribution of the tourism sector to the achievement of the NDC and SDGs.

→ Conduct a pilot project on the feasibility of a mandatory reporting scheme.

Accommodation sector

→ Report energy consumption and GHG emissions.

→ Segregate and monitor food waste and establish targets for reduction and continual improvement.

SECTION 10

2 - 10



	itoring and eva	luation		How can we measure the effectiveness of the action plan?					
of the roadmap Effective monitoring and evaluation of this plan is essential to verify that the actions are being implemented correctly and to evaluate if the actions are leading towards the desired outcomes. Regular monitoring provides stakeholders with key information to make timely modifications to ensure a			Mauritius to report on its global tation plan will provide a detailed mework and an outline of roles and	successfully adopted? By key stakeholders = hotel managers, policy	been made towards implementation?Quali cond intervise stake and 2Separate for each activitystake and 2rs awarePerception and a	itative assessment Impacts lucted through measure views of key the mon cholders in 2025 put in pla	ed based on itoring systems ace and on the		
	÷	1	1	1		1	······		
		2030 Main target (against 2020 baseline ¹)	Indicator (Units)	Who reports? Data source	Data collection standard	Validation data source	SDGs 13 CLIMATE		
CO ₂	Greenhouse Gases	30% reduction in Scope ² I – III (fuel, electricity, food, waste) GHG emissions from the accommodation sector	GHG emissions (tonnes CO2e)	Accommodation providers using data records and bills	IPCC Guidelines for National Greenhouse Gas Inventories ³	→ National GHG emission inventory			
		25% reduction in energy consumed by the accommodation sector	Total energy consumption kWh	Accommodation providers using data records and bills	Energy standards	 → National database → Energy audits → Energy Efficiency 	TARGET 7-3		
	Energy	20% of energy consumed by the accommodation sector is from renewable sources	Total energy consumption kWh	Accommodation providers using data records and bills	Energy standards	 → National database → Energy audits 	TAREE 7-2		
	Solid Waste	30% reduction in in amount of waste generated by the accommodation sector	Tonnes of solid waste (tonnes)	Accommodation providers using own measurement systems	Waste standards	 → Local government → Solid Waste Management Division 	TARGET 12-5		
	Plastic Waste	100% reduction in single- use plastic procured by the accommodation sector	Number of single-use plastic items procured	using own measurement → Solid Waste M		 → Local government → Solid Waste Management Division database 	TARGET 14-1		
	Food Waste	50% reduction in food waste generated by the accommodation sector	Tonnes of edible food waste (tonnes)	Accommodation providers using own measurement systems	Waste standards	 → Local government → Solid Waste Management Division database 	TARGET 12-3		

1 The reduction targets for GHG emissions, energy consumption and waste generation will be set relative to a Business-As-Usual (BAU) scenario. This is in line with the Nationally Determined Contribution of the Republic of Mauritius. 2 This target focuses on the elements within scope 3 that are associated with the largest amounts of GHG emissions, which according to the Eora global supply chain database (https://www.worldmrio.com) are waste and purchased food.

3 https://www.ipcc-nggip.iges.or.jp/public/2006gl/index.html



The vision of this action plan is to support Mauritius in becoming a world leader through its transition to a low carbon tourism economy that supports a unique experience for its visitors, whilst providing quality of life for its people in an inclusive, clean and safe environment



United Nations Environment Programme

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