

FOOD & PLASTIC WASTE REDUCTION

STANDARDS FOR TOURISM BUSINESSES



CONTENTS

PART I: INTRODUCTION	3
<i>1.1 GOAL OF THIS STANDARD</i>	<i>4</i>
<i>1.2 CIRCULAR ECONOMY AND WASTE REDUCTION</i>	<i>5</i>
<i>1.3 FRAMEWORK FOR THE FOOD & PLASTIC WASTE REDUCTION STANDARDS</i>	<i>7</i>
<i>1.4 FOOD & PLASTIC WASTE REDUCTION IN THE SUPPLY CHAIN</i>	<i>8</i>
PART II: FOOD WASTE REDUCTION STANDARD	13
<i>2.1 THE FOOD WASTE PROBLEM</i>	<i>14</i>
<i>2.2 FOOD WASTE PROBLEM IN THAILAND AND THAI TOURISM</i>	<i>15</i>
<i>2.3 FOOD WASTE REDUCTION STANDARD AND CRITERIA</i>	<i>17</i>
PART III: PLASTIC WASTE REDUCTION STANDARD	43
<i>3.1 THE PLASTIC WASTE PROBLEM</i>	<i>44</i>
<i>3.2 PLASTIC WASTE PROBLEM IN THAILAND AND THAI TOURISM</i>	<i>46</i>
<i>3.3 PLASTIC WASTE REDUCTION STANDARD AND CRITERIA</i>	<i>48</i>
REFERENCES	72
APPENDICES	75

PART I:
INTRODUCTION



INTRODUCTION

1.1 GOAL OF THIS STANDARD

This document intends to act as a guide for all tourism businesses, professionals and communities that wish to **reduce food waste and plastic waste in their operations**. Here you will find basic facts on the food and plastic waste challenges, best practices and case studies across the tourism and hospitality sectors, as well as tools and resources to help you start or continue your journey towards food and plastic waste reduction.

The ultimate goal of this document, however, is to present to you our **standards for food and plastic waste reduction** and management. These standards are meant to be used by tourism businesses as a tool on the necessary “checklist” for reducing food and plastic waste.

In both standards, we advocate that the greatest emphasis should be given to **preventing** waste. Even though the means to do so are different in the plastics and food standards, the goal is the same: to divert waste from landfills as much as possible.



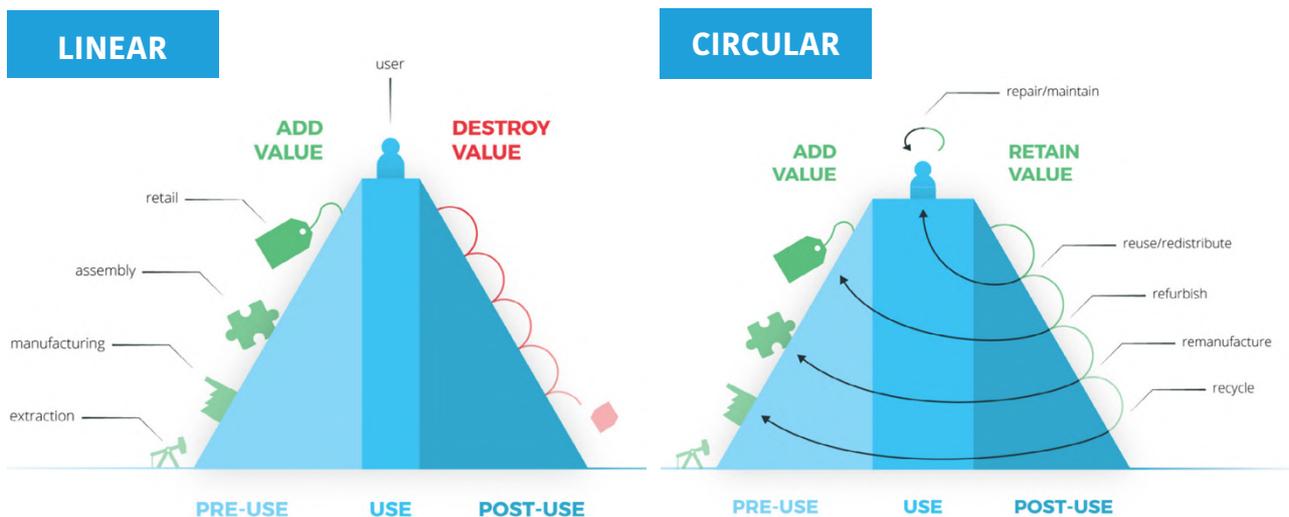
GUIDING FRAMEWORK: The standards follow the hierarchy of waste reduction strategies from most environmentally and economically favourable (PREVENTION) to least (DISPOSAL).

1.2 CIRCULAR ECONOMY AND WASTE REDUCTION

Our standards were also formulated following the principles of the circular economy. The circular economy is opposed to the traditional economic model: the *linear* economy, which entails a “take-make-dispose” approach to materials and resources (Ellen MacArthur Foundation, 2022).

Circularity, instead, advocates the continuous flow of materials through the value circle. This means that materials are **never disposed of**. Rather, they follow a similar framework to that from the previous page: first, their production should be prevented, then, if not possible, these materials must be reused, recycled and recovered – in this order.

Let’s look at the difference between the linear and the circular economy by using the Value Hill Framework:



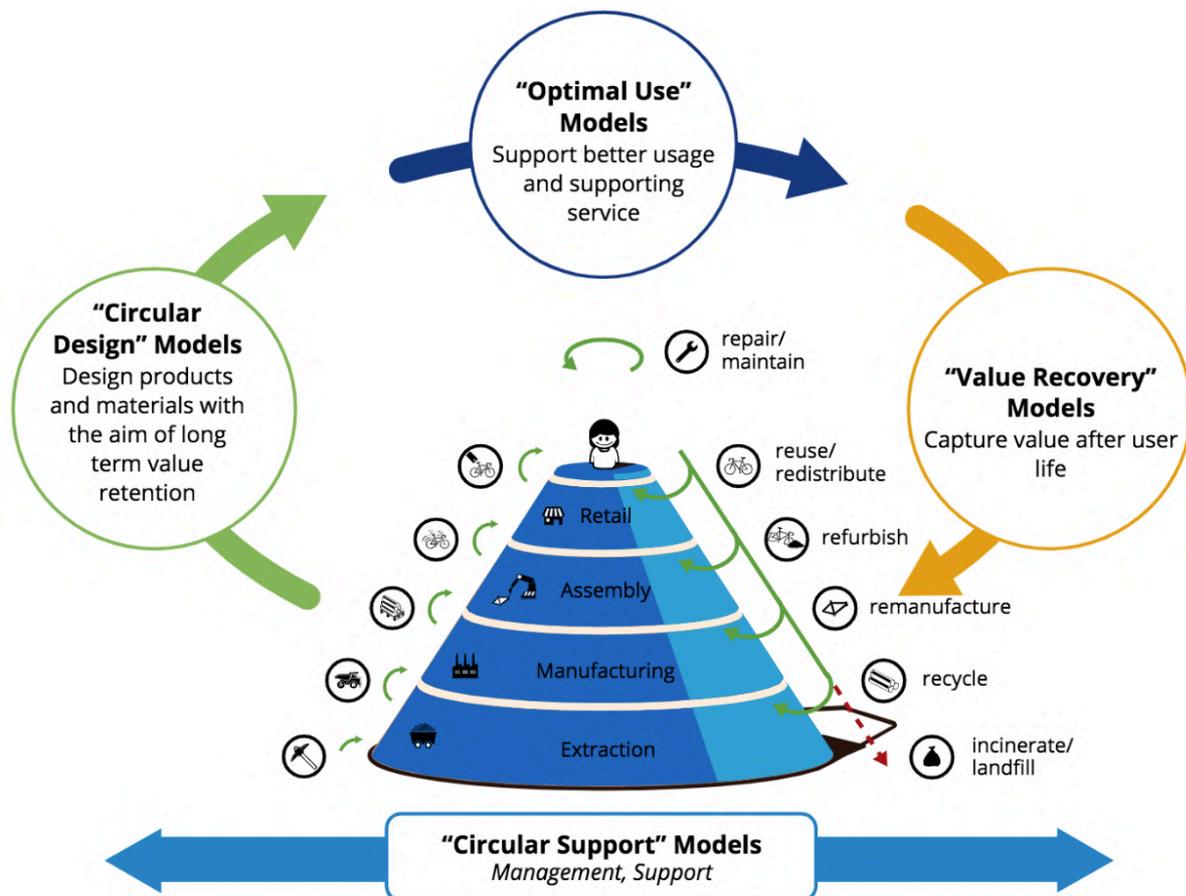
(Circle Economy & Sustainable Finance Lab, 2016)

The Value Hill Framework, as you can see, divides the use of materials into three main phases: pre-use, use and post-use. In both models, during the **pre-use phase**, materials gain value as they are turned into products and are put for ‘sale’ when they reach the user (**use phase**). The main difference lies in the after (the **post-use phase**).

In the linear economy, the material reaches its highest value at the top of the hill, and after a short lifespan, this value only goes downhill. Whereas in the circular economy, the value is **retained and maximised**, firstly by the optimal use of the material/product by the consumer and then by strategies that keep this material in the “**loop**” for as long as possible.

As you see in the second figure, the smaller the loop (the first arrow, that goes back to the user), the more **sustainable** the strategy is, because it requires fewer logistics and resources to retain or restore the value of the material. This is why reusing comes before recycling in the hierarchy of waste management strategies.

Now, although it seems like strategies for waste reduction focus only on the post-use, this is not true. Let’s take a look at this more comprehensive version of the Value Hill Framework:



(Achterberg et al., 2018)

Notice that circular strategies begin at the pre-use phase, by designing or, in the case of tourism businesses, **sourcing/purchasing products and materials** that are designed to have a longer lifespan or to decompose more easily and quickly (e.g., home compostable plastics). And, in the use phase, the focus should be, as we already mentioned, on **optimising the use** of this material or product.

With this framework in mind, we also divided our standards for Food Waste Reduction and Plastic Waste Reduction into three phases, but here, because tourism businesses do not – normally – produce or design physical products, we will use different names for the phases: **SOURCING** (pre-use), **USING** (use) and **DISPOSING** (post-use). The disposing phase does not mean landfill disposal, but all the strategies used after the use of a material/product to actually prevent it from going to landfills.

1.3 FRAMEWORK FOR THE FOOD & PLASTIC WASTE REDUCTION STANDARDS

The **first** step (the **BEFORE** phase) towards plastic and food waste reduction is to adopt sustainable sourcing and procurement practices.

1



The second step (the **DURING** phase) involves strategies to prevent and reduce waste during the use of the materials/ resources.

2



3

The third and last step (the **AFTER** phase) looks at the actions taken with the food & plastic waste that was generated *despite* all the efforts towards prevention, reduction and reuse of the second step.

In the first step, the materials and resources are still not in your business, thus you have the chance of making more **sustainable and responsible sourcing** choices, such as avoiding over-procurement of food (that can easily lead to spoilage), purchasing products made of materials other than plastics (bamboo, paper, wood, glass, etc.) or purchasing products designed for circularity (as we explained with the Value Hill Framework).

Secondly, once the materials and resources are already within your business operations, it is time to make the most of them, and **use them responsibly**. This means avoiding their spoilage and waste (in the case of food) and prolonging their lifespan (in the case of plastics). Obviously, for plastics, it is easier to avoid them in the first place – this is why responsible sourcing (the first stage) is so important.

Lastly, after taking actions towards reducing waste and reusing the materials and resources as much as possible, the business should ensure that these are **redistributed and disposed of also in a sustainable and responsible manner**, always using landfill disposal as a *last* resort.

But how can the waste reduction standards be implemented across the entire supply chain? Certainly not all tourism businesses are involved in the purchasing of food and/or plastics, thus also not directly involved in plastic/food waste management. Then, what role does each actor play in waste reduction efforts?

1.4 FOOD & PLASTIC WASTE REDUCTION IN THE SUPPLY CHAIN

As we mentioned at the beginning of this document, the standards presented here (as well as case studies and resources) are intended for all tourism businesses, professionals and communities interested in learning how to reduce food waste and plastic waste. However, we know that, according to its type, a business can have a more direct or indirect responsibility towards waste management.

For this reason, it is important to quickly explain the concept of **scope**. In sustainability, the idea of scope, mainly used in carbon emissions standards and measurement, can also be applied to our case: waste management.

Scope means the **range or extent of responsibility or involvement** in something. Scope 1 indicates *direct* responsibility or involvement. Scope 2 is *indirect* (but direct responsibility of a direct supplier). Scope 3 is also indirect, but it is the direct responsibility of an *indirect* supplier, and so on. A little confusing? Let's use an example for more clarity:

You work in a TOUR OPERATOR and your (direct) suppliers include hotels, restaurants, tourist attractions, tour guides, airlines, ground and water transportation companies, just to name a few.

Your **tour operator is Scope 1**. You have direct control over your policies, strategies, procurement choices, etc. So, regarding plastic waste, it is within your scope, for example, to install water refill stations in your offices and raise awareness of your staff to use refillable water bottles instead of purchasing single-use plastic ones.



SCOPE 1

Scope 2 would be your **direct suppliers** that we listed above. In the case of *hotels* that you work with, it is within their scope to, for instance, not offer single-use plastic toiletries but instead install shampoo, body wash and soap dispensers in the rooms.



SCOPE 2

Scope 3 would be the **direct suppliers of your direct suppliers** (thus indirect to you). It could be, for example, a *supermarket*. This supermarket would be Scope 2 to the hotel but Scope 3 to you because you do not purchase directly from them, but your direct supplier (the hotel) does.



SCOPE 3

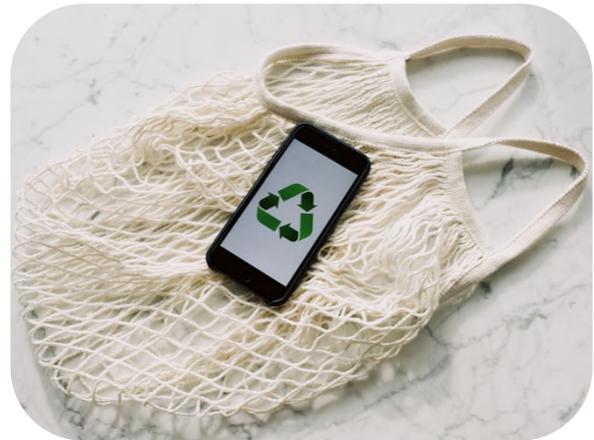
In our example, **Scope 4** would be a wholesale food distributor that supplies food to the supermarket and **Scope 5** would be the manufacturers and/or farmers. In this document, however, we will only focus on Scopes 1 to 3.

As you can imagine, the more scopes there are in your supply chain, the more difficult it is to measure and manage everyone’s efforts and outcomes. For this reason, we suggest that the Food and Plastic Waste Reduction standards, presented in this document, should be used in **steps**, implementing the strategies and actions first in Scope 1 (your business) to only then move on to Scopes 2 and 3 (your suppliers).

The following graphic, based on and adapted from the [Sustainable Hospitality Alliance](#) (2022), suggests a **pathway** to the implementation of food and plastic waste reduction measures and standards:



As you can see from the graphic, efforts towards food and plastic waste reduction should start in your business, property or community and move up the arrow as you raise awareness, engage and require compliance from suppliers, up to the point that the **entire supply chain is actively committed** to reducing food and plastic waste in their operations.



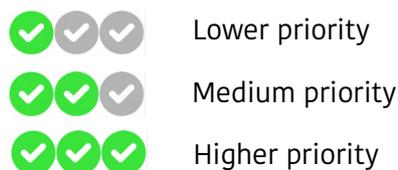
Now, let's see how to navigate through this material.

In order to facilitate the use of this document by different types of tourism businesses as well as tourism professionals and communities, and to help clarify the role that each one plays in waste reduction across the supply chain, all the case studies and tools presented here will be **categorised** by different icons according to the group to which it is most relevant.

The groups and icons are associated as below:



As for the standards, each criterion will also be categorised in one or more icons, to indicate to which groups it is relevant. Also, the criteria are further classified by their level of priority, from lower to higher:



See an example of a criterion and its classification on the next page:

    	10. Single primary purchaser	<input type="checkbox"/> Does your business assign the role of stock ordering to a single primary purchaser to prevent over-ordering by different employees (if possible, given the size of the operation)?
---	-------------------------------------	---

In this example, the criterion is marked with the icons  , which means that it is **applicable** to hotels, spas and restaurants, but **optional or non-applicable** for tour operators and guides, transportation companies, marine excursions and communities. Also, the criterion is marked with   , which means that it has a lower priority.

We hope that this guidance helps you and your business or community to understand your roles and responsibilities towards food and plastic waste reduction in the supply chain as well as the necessary pathway to be followed by all actors and stakeholders.

Now it is time to get started! We will begin with the Food Waste Reduction Standard, first presenting an overview of this challenge, both globally and in the context of Thailand, then moving on to the standard and criteria for food waste reduction, which will be supported by case studies, examples, tools and resources. Next, we will follow the same sequence, but with the Plastic Waste Reduction Standard.



PART II:
FOOD WASTE REDUCTION
STANDARD



FOOD WASTE REDUCTION STANDARD

2.1 THE FOOD WASTE PROBLEM

Before we present the best practices, tools and standard for food waste reduction, it is important to understand the magnitude of this global challenge.

The Food and Agriculture Organisation (FAO) estimates that **one third of all food** produced around the world – more precisely 1.3 billion tons – is either lost or **goes to waste** (FAO, 2019). This means that the resources – land, water, energy –, labour and capital used along the food production process are all lost as well – and in vain. Moreover, the food waste in landfills generates greenhouse gas emissions, thus contributing to global warming and **climate change**.

Food is lost or wasted throughout the **entire supply chain**, from agricultural production to consumption in households, restaurants, or other food service businesses. The causes of such waste vary according to many factors, but they are mostly related to a country's level of industrialisation.

In industrialised countries, food loss and waste are mainly due to overproduction and a lack of coordination between stakeholders in the supply chain, as well as poor consumer behaviour. On the other hand, in developing countries, food is usually lost during the early stages of the food supply chain, namely production and processing, because of premature harvesting, poor infrastructure for storage and transportation, among other reasons (FAO, 2011).

Regardless of the causes or areas where food losses and waste take place, as the FAO (2011) perfectly puts it,

“In a world with limited natural resources, and where cost-effective solutions are to be found to produce enough safe and nutritious food for all, reducing food losses should not be a forgotten priority.”

2.2 FOOD WASTE IN THAILAND AND THAI TOURISM

Tourism, before the COVID-19 pandemic, was one of the world’s largest and most profitable economic sectors, and, according to the WWF, the change towards food waste should come from those who have the **potential to make the biggest impact**. In this sense, hotels and restaurants can lead the way and "help reshape the food service industry as leaders in food waste reduction" (WWF, 2017).

Reducing food waste in the tourism and hospitality sector will also reduce costs along the supply chain and, more importantly, help address the UN **Sustainable Development Goals** (SDGs), specifically Goals 2 (Zero Hunger), 12 (Responsible Consumption and Production), 13 (Climate Action) and 17 (Partnerships for the Goals) (PATA, 2019).





In Thailand, the challenge of food waste is highly connected to **tourism and hospitality**. It is estimated that in Bangkok alone, almost 5,000 tonnes of food waste are collected every day (UNEP, 2021), and the average of food waste in Thai cities is between 33% and 54% (GIZ Thailand, 2020). Although hotels and restaurants are not the only ones to blame, they do play a large role in food waste generation.

It is estimated that an average 5-star hotel buffet throws away up to 50 kg of edible food during each service period (PATA, 2018). Moreover, although in Europe the hospitality sector produces less (12%) food waste than households (53%), in Asia, the opposite happens (Juvan et al., 2021). Fortunately, however, most hospitality businesses (83.8%) in the Asia Pacific have reported being actively **committed** to reducing food waste, a higher percentage than in other regions (Greenview, 2018).

Next, we will present the standard and criteria. The standard was created after thorough research on the topic of food waste reduction in tourism & hospitality, but also in households and communities. The toolkits and reports used in the development of the standard include, for example, the [PATA Buffet Toolkit](#), the [Hotel | Kitchen Guide](#) by WWF, the [Sustainable Food Manual](#) by Futouris, as well as many other important resources that will be mentioned and referenced in this document.

2.3 FOOD WASTE REDUCTION STANDARD AND CRITERIA

In this section, we will present the standard and criteria for Food Waste Reduction. These will be supported by **examples, case studies, tools** and **resources** to facilitate the understanding of the standard's framework, criteria, subcriteria and indicators. In the Appendices, you will find the full Food and Plastic Waste Reduction standards, but we encourage you to continue reading this section for the presentation of the standard with comprehensive **guidance**.

The standard is composed, as we just mentioned, of main **criteria**, which are divided into **subcriteria** and **indicators**, in the format of questions that can be used as a checklist by the business.

Also, the criteria can be **applicable** or **optional/non-applicable** depending on the type of business/group. Remember our icon scheme from page 13? The icons that follow each criterion dictate to which group this criterion is applicable.



Having remembered these instructions, we will start guiding you through the Food Waste Reduction Standards. The standard and criteria for Food Waste Reduction are more directly applicable to restaurants and to hotels/CBTs that provide food services but can also be used by any tourism business as guidance towards reducing food waste – even if only by staff, and not customers.

The criteria were created following the **framework** presented in the Introduction, which is the division into the three main steps of the food consumption cycle: when it is **sourced**, when it is actually **used** and, finally, when it is **disposed of**.

The greatest **efforts** on Food Waste Reduction thus should lie on:

- first, the avoidance of over-procurement and of spoilage during transportation and delivery;
- second, the responsible use of food during storage, preparation and service; and
- third, the responsible redistribution and disposal of food surpluses and waste that were generated despite efforts in the first two stages.

The main **criteria** for each of these three phases are the following:

SOURCING	USING	DISPOSING
Organisational Commitment	Measuring and Monitoring	Redistribution of Food Surpluses
Sustainable and Optimised Sourcing	Responsible and Optimised Storage	Disposal of Inedible Food Waste
	Responsible Preparation and Service	Disposal of Unavoidable Food
	Guest Communication	
	Reusing	

Next, we will start with the first phase, SOURCING.



2.3.1 FOOD WASTE REDUCTION CRITERIA – SOURCING

As we have already seen, strategies towards waste reduction should start **before** the product or material is in your business, property or community, by making sustainable and responsible procurement/sourcing choices. However, before that, the first element every organisation, business or community needs to start the fight against waste is **buy-in** from senior management (or community leader, in the case of a CBT).

Having buy-in from the beginning allows the development of a **sustainability policy** that includes all phases of waste reduction, from SOURCING to USING and, finally, DISPOSING. It also allows the planning and implementation of this policy. See the [PATA Buffet Toolkit](#) pages 8 and 9 for more information on how to develop a sustainability policy.)

Therefore, in this first section of the standards for Food Waste Reduction, the criteria focus on adopting measures mainly related to:

- **Organisational commitment.** This criterion looks into the level of commitment of the entire business (including senior management and staff) towards sustainability and food waste reduction. It also includes having a sustainability policy, engaging suppliers and stakeholders, and training staff on food waste reduction strategies.
- **Avoidance of over-procurement.** Measures include, for example, monitoring food usage and visitor forecasts to inform procurement decisions; sourcing fewer quantities but more frequently; sourcing only when needed and avoiding stocking; and assigning the responsibility of food sourcing to only one individual.
- **Avoidance of food spoilage during transportation and delivery.** Measures include giving preference to local suppliers to reduce travel distance and ensuring that suppliers transport and deliver products with the appropriate packaging and temperature to avoid food spoilage.



Let’s begin then! Below is the **Organisational Commitment** criterion, which is divided into 5 subcriteria and 8 indicators. Please refer to pages 5 and 10 of the [PATA Buffet Toolkit](#) as well as pages 12 to 19 of the [Hotel | Kitchen Guide](#) for more guidance on how to get organisational buy-in and engage staff towards food waste reduction.

Organisational Commitment	
The business is committed to applying strategies towards food waste prevention and reduction and engages all staff in these efforts.	
Subcriteria	Indicators
 <p>1. Organisational buy-in</p> <p></p>	<p><input type="checkbox"/> Can managers and staff with roles related to food waste management explain the environmental and economic benefits of food waste reduction?</p> <p><input type="checkbox"/> Is your business committed to applying food waste reduction strategies?</p>
 <p>2. Policy development and communication</p> <p></p>	<p><input type="checkbox"/> Does your business possess a sustainability policy that includes its commitment to sustainable food and waste management in the mission statement, as well as throughout the organisational strategies?</p> <p><input type="checkbox"/> Is this policy communicated on the business's online platforms and throughout the facility?</p>
    <p>3. Sustainable product development</p> <p></p>	<p><input type="checkbox"/> Does your business, if applicable, design products and experiences for tourists (e.g., tours, excursions, activities) with clear examples of preventing and reducing waste?¹</p>
    <p>4. Staff involvement and training</p>	<p><input type="checkbox"/> Does your business raise awareness of all the staff (and not only those who work directly with food preparation and serving) on the importance of food waste management?</p>

¹ See some tips [here](#).

	<p>✓ ✓ ✓</p>	<p><input type="checkbox"/> Does your business provide staff training on best practices to prevent food waste, including presentations, Q&As, off-site visits to composting sites and/or volunteering activities such as surplus food donation to communities?</p>
<p>∞</p>	<p>5. Stakeholder engagement</p> <p>✓ ✓ ✓</p>	<p><input type="checkbox"/> Does your business engage with other businesses and stakeholders (e.g., by forming working groups) to discuss and share food waste reduction initiatives?</p>

Case Study

When looking at ways to design tours that minimise food waste, [DASTA](#) (the Designated Areas for Sustainable Tourism Administration), in Thailand, provides two good examples of waste-free Community-Based Tours.



The Petchaburi Old Town Community-Based Tourism Club, in Petchaburi Province, designs their lunch sets in tester sizes, served in traditional ceramic ware, to minimise both plate scrapings and plastic waste.

In the Takientia community, food products are all locally sourced, thus the snacks and dishes offered to tourists during CBT tours not only support the local livelihoods but also eliminate food and plastic waste, as they are served in natural (thus biodegradable) materials, such as banana leaves, which are then composted and used in the local farms. This shows the level of sustainability and circularity of these CBTs.



Case Study



As for staff engagement, the [Terranea Resort](#), in Los Angeles, has established a “task force” for building staff awareness and creating a culture that promotes waste reduction. This initiative includes, among many strategies, the “Clean Plate Challenge Photo Contest”, in which employees take a picture of their clean lunch plates to win a reusable water bottle.

[BUFFET Toolkit](#) (2019). PATA’s BUFFET (Building an Understanding for Food Excess in Tourism) Toolkit is a practical guide for hospitality businesses that wish to start implementing food waste reduction strategies – from sustainable procurement to adequate redistribution and disposal alternatives.



[Hotel | Kitchen](#) (2017). World Wildlife Fund (WWF) and the American Hotel and Lodging Association (AHLA), with support from The Rockefeller Foundation, came together to work with the hospitality industry on understanding and reducing food waste. Through research and a series of demonstration projects with properties across the country, innovative strategies were identified to engage staff, partners and guests in cutting waste from hotel kitchens.

Moving on to the last criterion of the SOURCING phase, **Sustainable and Optimised Sourcing** looks into the measures and strategies needed to prevent food spoilage during transportation and delivery of products, and to avoid of over-procurement.

Sustainable and Optimised Sourcing

The business is committed to applying strategies towards sustainable and optimised sourcing and procurement to minimise food spoilage.

Subcriteria		Indicators
<p>6. Committed suppliers</p> <p> </p>	<input type="checkbox"/> Does your business work with suppliers that are also committed to minimising food waste?	

	<p>7. Local sourcing²</p> <p>✓ ✓ ✓</p>	<p><input type="checkbox"/> Does your business prioritise local sourcing to reduce travel distance and the likelihood of food spoilage?</p> <p><input type="checkbox"/> Does your business prioritise local sourcing to facilitate buying less but more often according to the demand?</p> <p><input type="checkbox"/> Does your business have a garden or farm to cultivate herbs, spices, vegetables, etc.?</p>
	<p>8. Seasonal sourcing³</p> <p>✓ ◯ ◯</p>	<p><input type="checkbox"/> Does your business purchase products that are in season for more effective production logistics (with less travel distance and spoilage)?</p>
	<p>9. Optimised sourcing⁴</p> <p>✓ ✓ ✓</p>	<p><input type="checkbox"/> Does your business monitor food usage, forecast consumer demand and take into consideration seasonality to adjust the frequency of purchases accordingly?</p> <p><input type="checkbox"/> Does your business avoid over-purchasing by ordering food just before it is to be used/when it is needed?</p>
	<p>10. Single primary purchaser</p> <p>✓ ◯ ◯</p>	<p><input type="checkbox"/> Does your business assign the role of stock ordering to a single primary purchaser to prevent over-ordering by different employees (if possible, given the size of the operation)?</p>
	<p>11. Supplier relationship</p> <p>✓ ◯ ◯</p>	<p><input type="checkbox"/> Does your business establish long-term relationships with suppliers to ensure quality consistency of goods and avoid risks (spoilage)?</p> <p><input type="checkbox"/> Does your business communicate with suppliers to ensure that the quality/ characteristic of products fits your needs (e.g., the correct sized vegetables, etc.)?</p>

² See page 20 of the [PATA Buffet Toolkit](#).

³ See page 20 of the PATA Buffet Toolkit and pages 12 and 13 of Futouris' [Sustainable Food Manual](#).

⁴ See pages 17 and 18 of the [PATA Buffet Toolkit](#).

	<p>12. Streamlined deliveries⁵</p> <p></p>	<ul style="list-style-type: none"> <input type="checkbox"/> Does your business streamline procedures for receiving deliveries (especially chilled) and transferring goods to appropriate storage to minimise food spoilage and associated costs? <input type="checkbox"/> Does your business ensure that the products received have enough shelf life? <input type="checkbox"/> Does your business ensure that the delivered products are free from contaminants? <input type="checkbox"/> Does your business ensure that the products have been transported at the right temperature and with the right packaging to protect them from damage?
---	---	---

Case Study

The [Sampran Model](#) is an inclusive business model in Thailand based on an organic social movement and fair trade. And the Organic Tourism is a project sponsored by the Thai Health Promotion Foundation to



extend the Sampran Model movement amongst businesses in the travel industry. Hotels and restaurants can connect directly with organic farmers to buy supplies at fair prices while they engage their consumers in various activities such as organic farming workshops, chef's tables and local farm visits.



The guide [Responsible Food Purchasing: Four Steps Towards Sustainability for the Hospitality Sector](#) (2015) by UNEP provides practical steps, tips, resources and case studies on responsible food purchasing practices for hospitality businesses.

⁵ See page 19 of the [PATA Buffet Toolkit](#).

2.3.2 FOOD WASTE REDUCTION CRITERIA – USING

Now we will present the criteria for the second step towards Food Waste Reduction, which is when the food products are already in your business. This step is the most crucial one because the measures taken here are the ones that will make the **most difference** in the amount of food waste your business generates.



The criteria of the USING phase of the Food Waste Reduction Standard are:

- **Measuring and monitoring.** As the saying goes, "you can't manage what you don't measure". Therefore, it is crucial for the business to measure in which steps food waste is most generated (if during storage, preparation, or plate scrapings), set goals and frequently monitor the results in order to adapt measures accordingly.
- **Responsible and optimised storage.** The first phase of food usage is its storage. To minimise spoilage during this phase, the business must ensure appropriate storage facilities for food products as well as extend their shelf life by, for instance, always prioritising those that are closer to expiring.
- **Responsible preparation and service.** This is the step that requires the most effort from the staff, as they must use food products wisely and creatively to avoid spoilage and overproduction.
- **Guest communication.** This criterion focuses on avoiding plate scrapings from customers/guests, such as by, for example, raising their awareness on the issue of food waste.
- **Reusing.** Lastly, the business or CBT should, as much as possible, reuse food leftovers (such as by making soups with leftover vegetables).



The first criterion of the USING phase, **Measuring and Monitoring**, is important for the business to understand which areas to focus on. For example: if, after conducting a food waste mapping, you discover that most food waste is generated during preparation, your business will need to implement more strategies related to this phase, such as raising awareness of the staff and training them on how to avoid spoilage, over-trimming and overproduction.

It is only by measuring food waste (and determining where exactly it comes from) that you can make informed decisions on the best strategies, tailored to your business and its current situation. (Please see pages 12 and 13 of the [PATA Buffet Toolkit](#) for more guidance on measuring and monitoring.)

Measuring and Monitoring	
The business measures food waste, sets goals for food waste reduction, monitors results and adapts strategies accordingly.	
Subcriteria	Indicators
 <p>13. Food waste mapping</p> <p></p>	<p><input type="checkbox"/> Does your business map out and measure the amount of food waste generated in each step of food usage (spoilage of raw materials, preparation, overproduction food, plate scrapings, etc.) to understand where waste comes from and what prevention strategies are needed?</p> <p><input type="checkbox"/> Does your business use a tracking sheet or app for food waste mapping and measuring?</p>
 <p>14. Waste and food waste separation⁶</p> <p></p>	<p><input type="checkbox"/> Does your business have separate bins for organic and inorganic waste throughout the facility?</p> <p><input type="checkbox"/> In the kitchen, is the organic (food) waste further classified? For example, into reusable (such as meat leftovers to make broths and stocks), for redistribution (such as healthy and</p>

⁶ It is important to separate the general waste as well as the food waste to obtain more accurate results and, thus, make better decisions. Learn more about the importance of waste separation and measurement on pages 20 to 25 of the [Hotel | Kitchen Guide](#).

Tools



[Winnow](#) is a technology that provides solutions for kitchens to measure, monitor and reduce their food waste. From AI-enabled tools to basic digital measurement via tablet, Winnow offers a range of packages that can suit different kitchens and sectors. The Winnow System automatically measures what is put in the bin, giving chefs the insight to make improvements and reduce costs. Read [here](#) how Sofitel Bangkok Sukhumvit saved \$60,000 by reducing food waste with Winnow.

[Food Intel Tech](#) is another tool for measuring food waste that provides an in-depth analysis and a performance report for commercial kitchens to improve their bottom line while reducing food waste.



[Waste Mapping Guidance for Hotels in Cyprus: Saving Money and Improving the Environment](#) (2013). Designed for use in Cyprus, this report by the Travel Foundation is a useful guide on the key steps in implementing a waste mapping process in hotels and restaurants.

! [Prevention and Reduction of Food and Drink Waste in Businesses and Households](#) (2014). This publication by UNEP is a comprehensive guide on how to map and measure food waste and how to prevent and reduce food waste in the business supply chain.

[Food Waste Segregation and Treatment](#) (2020). This guidebook, by the National Environment Agency of Singapore, aims to guide premises owners and operators who generate food waste to implement proper food waste segregation and adopt food waste recycling/treatment methods.

The second criterion of the USING phase is **Responsible and Optimised Storage**. We all know, from our own households, that it is common to waste food even before we prepare it. Fruits and vegetables spoil quickly, dairy products have a very short shelf life and spoil easily if not stored at the right temperature, and some products simply end up “forgotten” on our shelves until they expire. This, of course, also happens in professional kitchens.

For this reason, it is important for businesses to have a system in place to **avoid spoilage of products while they are being stored**, as well as adequate storage facilities. Moreover, the staff should be trained to always give preference to those products that will expire first. (See pages 21 and 22 of the [PATA Buffet Toolkit](#) for more guidance on responsible and optimised storage.)

Responsible and Optimised Storage

The business trains staff on best practices for food storage to minimise spoilage and extend products' shelf life.

Subcriteria		Indicators
 <p>17. Adequate storage⁸</p> <p></p>	<p><input type="checkbox"/> Does your staff handle storage carefully to avoid damage and spoilage by understanding how each food item should be stored?</p> <p><input type="checkbox"/> Does your business assign one member of staff for checking fridge/freezer temperatures as well as room conditions (enough ventilation, adequate temperature, lack of sun exposure, etc.) to minimise food spoilage?</p>	
 <p>18. Use-by labelling</p> <p></p>	<p><input type="checkbox"/> Does your business ensure that all food items are labelled correctly with purchase date and use-by date?</p> <p><input type="checkbox"/> Does your business train staff on the differences in labelling (“best by,” “sell by,” “use by,” “freeze by,” “expires on”, etc.)?</p>	

⁸ See the [A-Z Food Storage](#) by Love Food Hate Waste with storage best practices for the most common food items.

	<p>19. Shelf-life extension</p> <p>✓ ✓ ✓</p>	<p><input type="checkbox"/> Does your business train staff on how to use items with the soonest expiration date first – FIFO (first in first out) and FEFO (first expired first out) principles?</p> <p><input type="checkbox"/> Does your staff continually rotate stock by putting the newest product at the back of the shelf so that the oldest gets used first?</p>
	<p>20. Optimised storage</p> <p>✓ ⚪ ⚪</p>	<p><input type="checkbox"/> Does your business use, whenever possible, optimised storage options, such as marinating meats and vegetables, sous vide⁹, ozone food preservation¹⁰, etc.?¹¹</p>

The following online articles provide valuable tips and information on how to store food responsibly to avoid spoilage and waste:

- [Storing Food for Safety and Quality](#)
- [Food Preservation Methods and Guidance](#)
- [How to Store Food in Restaurants](#)
- [How Long Does Food Last in the Freezer? A Storage Guide](#)
- [Using a FIFO Food Storage System](#)
- [6 Storage Temperatures and Procedures](#)

Also, [Work Smart – Wise Up on Waste](#), by Unilever, is a concise and practical guide on how to reduce food waste in all stages: from sourcing to storage, preparation and disposal. See tips on how to store food responsibly on pages 10 to 12.

The third criterion of the USING phase is **Responsible Preparation and Service**. In this phase, efforts should concentrate on using the food products and ingredients, as we have already mentioned, **wisely** and **creatively**. This means, for example, carefully planning the menu and recipes according to the ingredients that will expire first and avoiding overproduction by monitoring guest/customer forecasts.

⁹ Learn what sous vide is [here](#).

¹⁰ Learn more [here](#).

¹¹ Vacuum packaging is another common alternative for preserving food products, but it is important to take into consideration the plastic footprint of this option.

The strategies to reduce food waste during preparation are many, as you will see below, and, for more guidance, please see pages 25 to 29 of the [PATA Buffet Toolkit](#) as well as pages 31 to 33 of the [Hotel | Kitchen Guide](#).

Responsible Preparation and Service

The business adopts and reinforces strategies to prevent and minimise food waste during preparation and service.

Subcriteria		Indicators
 <p>21. Menu planning¹²</p> <p>✓ ✓ ✓</p>	<input type="checkbox"/> Does your business frequently assess the popularity of dishes to adjust the menu and cut down dishes (and ingredients) that are not being ordered or that are being left on the plates? <input type="checkbox"/> Does your business control the number and diversity of dishes to avoid over-procurement of ingredients?	
 <p>22. Recipe planning</p> <p>✓ ✓ ✓</p>	<input type="checkbox"/> Does your business use a software or app for recipe management that scales recipes according to guest forecasts to reduce unnecessary waste of ingredients?	
 <p>23. Ingredient planning</p> <p>✓ ✓ ✓</p>	<input type="checkbox"/> Does your business add daily dishes to the menu (such as a "today's special") based on ingredients with close expiration dates?	
 <p>24. Over-trimming avoidance</p> <p>✓ ✓ ✓</p>	<input type="checkbox"/> Does your business train staff to not over-trim fruits and vegetables during preparation and to, when possible, leave the skins on (e.g., potatoes)? <input type="checkbox"/> Does your business regularly conduct yield tests? ¹³	

¹² See how to plan waste reducing menus on page 47 of the [Hotel | Kitchen Guide](#).

¹³ [Yield tests](#) are important, besides for financial and sourcing reasons, for understanding the yield of ingredients to **reduce their waste during handling/trimming** as much as possible.

	<p>25. Over-production avoidance</p> <p>✓ ✓ ✓</p>	<p><input type="checkbox"/> Does your business avoid overproduction by monitoring guest forecasts, in both a la carte and buffet services, to prepare the amount of food accordingly?</p>
	<p>26. Buffet management¹⁴</p> <p>✓ ✓ ✓</p>	<p><input type="checkbox"/> Does your staff use temperature-controlled vessels to preserve food quality in the buffet?</p> <p><input type="checkbox"/> Does your staff monitor the amount of food displayed and only replenish when demand dictates?</p> <p><input type="checkbox"/> Does your staff use smaller food containers and choose to replenish the buffet in less quantity but with more frequency?</p> <p><input type="checkbox"/> Does your staff refrain from replenishing the buffet in the last quarter of service?</p>
	<p>27. Portion control</p> <p>✓ ✓ ✓</p>	<p><input type="checkbox"/> Does your business minimise the quantity of bread, starters and condiments portions given to customers?</p> <p><input type="checkbox"/> Does your staff ask guests if they want refills of starters, condiments, etc. instead of serving them automatically?</p> <p><input type="checkbox"/> Does the menu include options of different portion sizes to fit various needs, e.g., S/M/L, or kid portions?</p>



[Sustainable Food Manual](#). This guide by Futouris is designed to help hotels and cruise ships move towards a more sustainable food policy. The guide encompasses the different stages of the food process chain: food purchasing; preparation and design of a sustainable menu, presentation and communication; waste management; and how to implement sustainable food strategies.

¹⁴ Learn more about the problem of food waste in buffets [here](#) and see the tips provided on pages 61 to 64 of the [Hotel | Kitchen Guide](#).

	<p>28. Service and presentation¹⁵</p> <p>✓ ✓ ✓</p>	<p><input type="checkbox"/> Does your staff present food creatively, such as by using the inedible parts of fruit/vegetable prep as garnishes to decorate the plate and reduce the quantity of food served?</p>
---	--	---

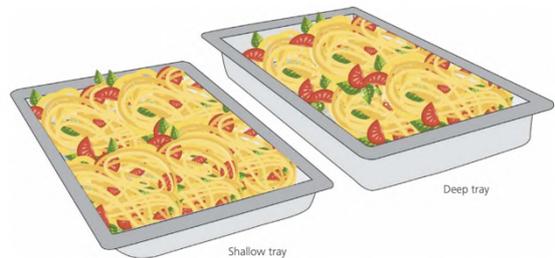
Case Study



A Portuguese initiative called [Menu Dose Certa](#) (Right Portion Menu) consists of teaching restaurants how to create menus that generate less food waste, by monitoring and analysing customers’ plate scrapings, adapting menus and recipes over a certain period of time, and recording which changes led to the biggest waste reduction from customers and guests. Understanding which items they were mostly leaving behind and reducing portion sizes had a significant impact on food waste reduction in all participating restaurants and canteens.

As you will see in the next set of criteria, getting feedback from customers on the dishes and menu is also important for making such an assessment.

The [Food Waste Minimisation Guidebook for Food Retail Establishments](#), by NEA and AVA, presents valuable tips and recommendations to reduce food waste, such as best practices on food display.



The fourth criterion of the USING phase, **Guest Communication**, focuses on how to avoid guests or customers leaving a lot of food on their plates. The name of the criterion is *communication* because all the strategies of this phase focus on communicating to guests:

- why it is important to reduce food waste and why your business is engaged in food waste reduction;

¹⁵ Smaller portions help reduce waste. See more tips on pages 22 and 23 of Futouris’ [Sustainable Food Manual](#) and page 29 of the [PATA Buffet Toolkit](#).

- details from the dishes (either on the menu or buffet) so that they make more conscious decisions – this is important also to ensure the safety of customers who might be allergic to some ingredients.

Remember: the more information guests and customers have, the less likely they will waste food. (See guidance on pages 29-30 of the [PATA Buffet Toolkit](#).)

Guest Communication

The business adopts and reinforces strategies to prevent and minimise food waste by communicating effectively with guests and customers.

Subcriteria		Indicators
	29. Raising awareness 	<input type="checkbox"/> Does your business raise guests' awareness of the sustainability policy and food waste reduction efforts? <input type="checkbox"/> Does your business display signages on the buffet, menus and tables to encourage guests to minimise waste?
	30. Responsible choices 	<input type="checkbox"/> When handling orders, does the staff ensure that guests are aware of portion sizes, food ingredients to which they might be allergic, preferred cooking methods and choice of sides, to avoid that dishes are sent back to the kitchen and to minimise plate scrapings? <input type="checkbox"/> In buffets and menus, are all dishes labelled with their name, category (vegan, vegetarian, gluten-free, halal, etc.) and ingredients they contain to avoid too much experimentation? <input type="checkbox"/> In buffets and menus, is there an indication of which dishes are the most environmentally friendly (with less carbon footprint, such as plant-based?)
	31. Getting feedback 	<input type="checkbox"/> Does your business provide feedback forms to guests to gain an understanding of which dishes and/or ingredients could be taken out of the menu?

Case Study



[Cool Food](#) is an online platform that helps businesses and organisations reduce the climate impact of the food they serve. The Cool Food Badge is used to indicate which dishes on a menu are **climate-friendly**, i.e., that have a low carbon footprint. Why not have a similar badge on your menu/buffet for plant-based dishes? You can also sign the [Cool Food Pledge](#) and use their [Cool Food calculator](#) to set targets and track climate impacts.



Tool

The [Sustainable Food Communication Manual](#), by Futouris, provides a range of tools to communicate efforts towards food waste reduction to guests and customers. Ideas for posters, banners, stickers, info sheets, table displays and many other downloadable and printable materials are available in this manual.



Lastly, the last criterion of the USING phase is **Reusing**. Despite all efforts in the previous stages, it is normal to have leftovers from food preparation and from the buffet. Therefore, the staff should be trained on how to reuse these leftovers, either to make new dishes or non-food products. Reusing leftovers requires creativity, but there are many blogs, videos and resources online to help give insights and ideas.

Examples

- [6 Smart Ways to Reuse Food Scraps and Leftovers](#)
- [11 Tips to Reuse Food Remains in the Household](#)
- [Reusing Food Waste, Scraps and Leftovers](#)
- [How to Turn Food Scraps into Cleaning Materials](#)

Reusing

The business adopts and reinforces the reusing of food prep waste and leftovers/ surpluses to minimise food waste.

Subcriteria		Indicators
 <p>32. Staff training</p> <p>✓ ✓ ✓</p>	<input type="checkbox"/> Does your business train staff on recovery strategies and encourage them to reuse food prep waste and leftovers whenever possible?	
 <p>33. Reuse of food prep waste and leftovers¹⁶</p> <p>✓ ✓ ✓</p>	<input type="checkbox"/> Whenever possible, does your staff utilise food prep waste and leftovers to make other dishes (such as using bones and vegetable trimmings to make stock)? <input type="checkbox"/> Whenever possible, does your staff utilise food prep waste for preparing other products for the facility (such as orange/lemon/lime peels for making detergents)?	

Case Study

A European initiative called [Robin Food](#) transforms surplus vegetables into soups and distributes these to vulnerable families through food banks and social grocers. Robin Food is just one of many projects, businesses and organisations that uses food surpluses to create new products either to be sold, donated, redistributed or used in-house. So why not also use your creativity and make new products with your business’s surplus food?



2.3.3 FOOD WASTE REDUCTION CRITERIA – DISPOSING

The last phase of our Food Waste Reduction standard is DISPOSING. Here, disposing **does not mean throwing away**. Instead, it refers to all the measures that can be

¹⁶ Get some recipe ideas with leftover ingredients [here](#).

taken by a business to avoid food waste ending up in landfills. These measures are divided according to the type of food waste:

- **Edible food** – food surpluses that are fit for human consumption, such as leftovers from the buffet or food products that will not be used but are still within the expiration date.
- **Inedible food** – food that is not fit for human consumption, such as plate scrapings, fruit and vegetable peels and seeds, eggshells, etc.



Based on this division, there is one criterion for edible food and two for inedible food:

- **Redistribution of food surpluses.** The food surpluses that will not be used (or reused) by the business should be redistributed and donated. In 2020, between 720 and 811 million people faced hunger (FAO, 2021), and by donating **quality excess food**, the tourism industry can help address this global issue. (See pages 31 to 34 of the [PATA Buffet Toolkit](#) and pages 34 to 37 of the [Hotel | Kitchen Guide](#) to learn how to get involved in food donation and redistribution schemes.)
- **Disposal of inedible food waste.** The food that is no longer fit for human consumption does not necessarily need to go to landfills. The two simplest alternatives are composting and animal feeding, but businesses can also invest in food digestors, or they can collaborate with organisations that repurpose food waste.



- **Disposal of unavoidable food waste.** The last resort, as we have already mentioned, is landfill disposal. So, if despite all previous efforts, there is **unavoidable** food waste, the disposal needs to abide by the local food disposal regulations.

Let’s start with the first criterion of the DISPOSING phase, **Redistribution of Food Surpluses**. As discussed above, quality surplus food should go to those who need it, as almost 10% of the world population experiences hunger. Therefore, the business can and should find redistribution and donation partners in their municipality or community and organise regular collections and deliveries that fit everyone’s needs. **Partnerships** are important for consistency and reliability, from both sides.

Redistribution of food surpluses

The business redistributes all quality food surpluses to minimise food waste.

Subcriteria		Indicators
    	34. Donation	<input type="checkbox"/> Does your business redistribute food surpluses to staff and organisations in accordance with health and safety regulations? <input type="checkbox"/> Does your business engage local organisations and institutions that may have a need for quality surplus food (such as shelters)? <input type="checkbox"/> Does your business have a reliable partner for food donation that helps redistribute quality surplus food?
    	35. Other redistribution schemes	<input type="checkbox"/> Does your business participate in food redistribution schemes, such as food sharing apps (e.g., Too Good to Go)?

Case Study



[Scholars of Sustenance](#) (SOS) is a food rescue organisation currently active in Thailand and Indonesia that rescues surplus food in hotels, restaurants and supermarkets and redistributes this food to communities in need. They work with over 400 food donors from hospitality businesses, retailers and wholesalers, and they rescue and distribute 5 tons of food every day. What if you could be a donor too?

Another food redistribution initiative in Thailand is the app [Yindii](#), which connects eco-friendly consumers with restaurants, supermarkets, bakeries, etc. that have surplus quality food products at discounted prices. The company has reported working with over 150 businesses and having saved over 20,000 meals and 50,000 kg of CO₂.



The second criterion of the DISPOSING phase, **Disposal of Inedible Food Waste**, looks at what to do with food waste that is not fit for redistribution or donation, such as expired and spoiled products, plate scrapings and food preparation waste. If your business does not have a composting site or animal farm, then it will likely need [partnerships](#) for the collection of food waste to be composted or repurposed. Also, a more costly alternative would be to invest in an anaerobic digester, as already mentioned.

Disposal of inedible food waste

The business diverts from landfills, as much as possible, all inedible food waste (food that is not fit for human consumption).

Subcriteria		Indicators
     	<p>36. Animal feed¹⁷</p>	<input type="checkbox"/> Does your business collaborate with partners for donating inedible food to farms, zoos, animal feed suppliers, etc.?

¹⁷ Read about food waste for animal feeding on pages 63 to 65 of the toolkit [Reducing the Food Wastage Footprint](#). Also, the section Recycle/Recover that starts at page 67 brings many tips and examples of how to divert inedible food waste from landfill.

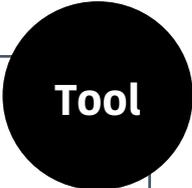
	<p>37. Composting¹⁸</p> <p>✓ ✓ ✓</p>	<p><input type="checkbox"/> Does your business have a compost on site and use compost as fertiliser on its grounds, gardens, etc.?</p> <p><input type="checkbox"/> Does your business take compost to a local farm?</p> <p><input type="checkbox"/> Does your business arrange daily/weekly pickups with the municipality for organic waste?</p>
	<p>38. Anaerobic digestion</p> <p>✓ ✓ ✓</p>	<p><input type="checkbox"/> Does your business, if financially viable, invest in an anaerobic food digester, which transforms food waste into environmentally safe water that can be released into the municipal sewage system (ORCA) or even energy?</p>
	<p>39. Partnerships for repurposing</p> <p>✓ ✓ ✓</p>	<p><input type="checkbox"/> Does your business establish partnerships or belong to a cluster of tourism stakeholders that collaborate with third-party companies and industries that digest or repurpose food by-products?</p>

Case Study

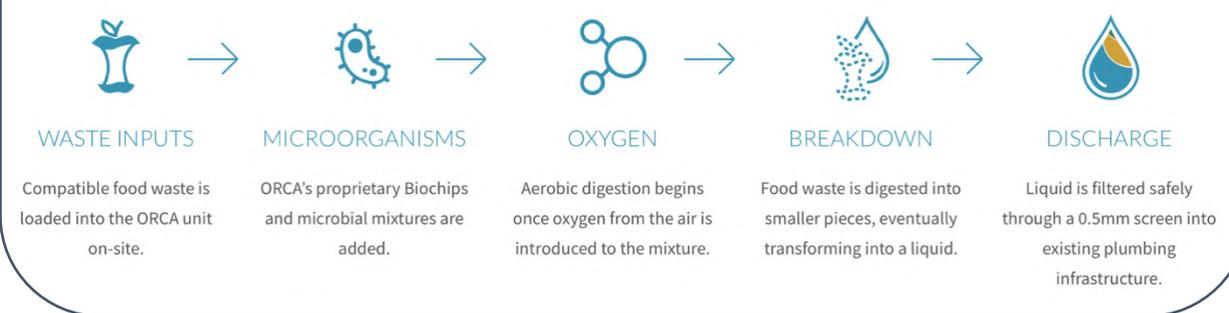


[Wastevegetable](#) is a Bangkok-based social enterprise managed by the [Bangkok Rooftop Farming](#). The organisation collects food waste from partner businesses and composts this waste, which is then used as fertiliser in rooftop vegetable and herb gardens in the city. These gardens, managed by employees and volunteers, are open to anyone who wishes to buy organic vegetables, plants, fertilisers or participate in trainings and workshops on food waste management and urban farming.

¹⁸ Did you know that [black soldier flies](#) are used in many countries for composting food waste? Their larvae are voracious consumers of organic material, and they can convert large quantities of food waste/by-products into [high quality protein](#), while insect manure can be used as compost.



ORCA is a technology that mimics a natural digestion process. It is an aerobic food digester that turns food waste into environmentally safe water that can be released into the municipal waste system.



Finally, the last criterion of the DISPOSING phase and of the Food Waste Reduction standard is **Disposal of Unavoidable Food Waste**. Even after applying several strategies in all previous phases, some food waste is unavoidable. Nevertheless, the business should get informed on local food disposal standards and regulations to know how to dispose of this unavoidable food waste as **responsibly and sustainably** as possible.

Disposal of unavoidable food waste

Despite all the efforts to prevent food waste or to redistribute and repurpose food waste, the business disposes of any unavoidable food waste according to local regulations and standards.

Subcriteria		Indicators
 40. Proper disposal of unavoidable food waste 	<input type="checkbox"/> Does your business abide by all local food disposal standards and regulations?	

We have concluded the Food Waste Reduction standard, having gone through all the 10 criteria, 40 subcriteria and 74 indicators. Although these may seem overwhelming, remember: sustainability is a marathon, not a sprint. Your business should look at long-term commitment and positive change, and **not** quick solutions.

We suggest beginning with the steps that are easier to implement first. For example, if your business already has a garden or farm, you can start by looking at how to compost food waste, what types of food can be composted, etc. Another good way to start is by:

- **Understanding your context.** Does your municipality possess an organic waste collection and treatment system in place? Are there food redistribution and donation organisations in your area that you could partner with?
- **Engaging your senior management and staff** and getting them on board on what you wish to accomplish – minimising food waste. By discussing together the challenges and opportunities of your specific context, you will more likely come up with efficient strategies and maintain these in the long term.

We hope that the standards, examples, case studies, tools and resources presented here were helpful for you to gain a deeper understanding of the food waste challenge and the best ways to tackle it. We encourage you to **get in touch** with the companies and organisations mentioned here to share insights and, possibly, discuss **tailored solutions**, and to get in touch with us at **ssr@pata.org** so we can also help you find the best alternatives for your business.



As we move on to the Plastic Waste Reduction Standard, we would like to stress that although, as you may have noticed, the majority of criteria presented in this section is applicable mostly to restaurants and hotels and CBTs that provide and/or serve food, **all businesses can help, directly or indirectly, in the fight against food waste**. You can find out how in the Solution Tree on page 83 of the Appendices.

**PART III:
PLASTIC WASTE
REDUCTION STANDARD**



PLASTIC WASTE REDUCTION STANDARD

3.1 THE PLASTIC WASTE PROBLEM

It is time to shift our focus to the other great global challenge in waste management: **plastics**. It goes without saying that the amount of plastics we produce, consume and dispose of is unsustainable and that plastic pollution is one of today's most pressing issues. **Plastic pollution**, as we all know it, degrades the environment, kills wildlife, contaminates our food chain and, thus, damages our health. And **single-use** and disposable plastics, particularly, represent the biggest problem.

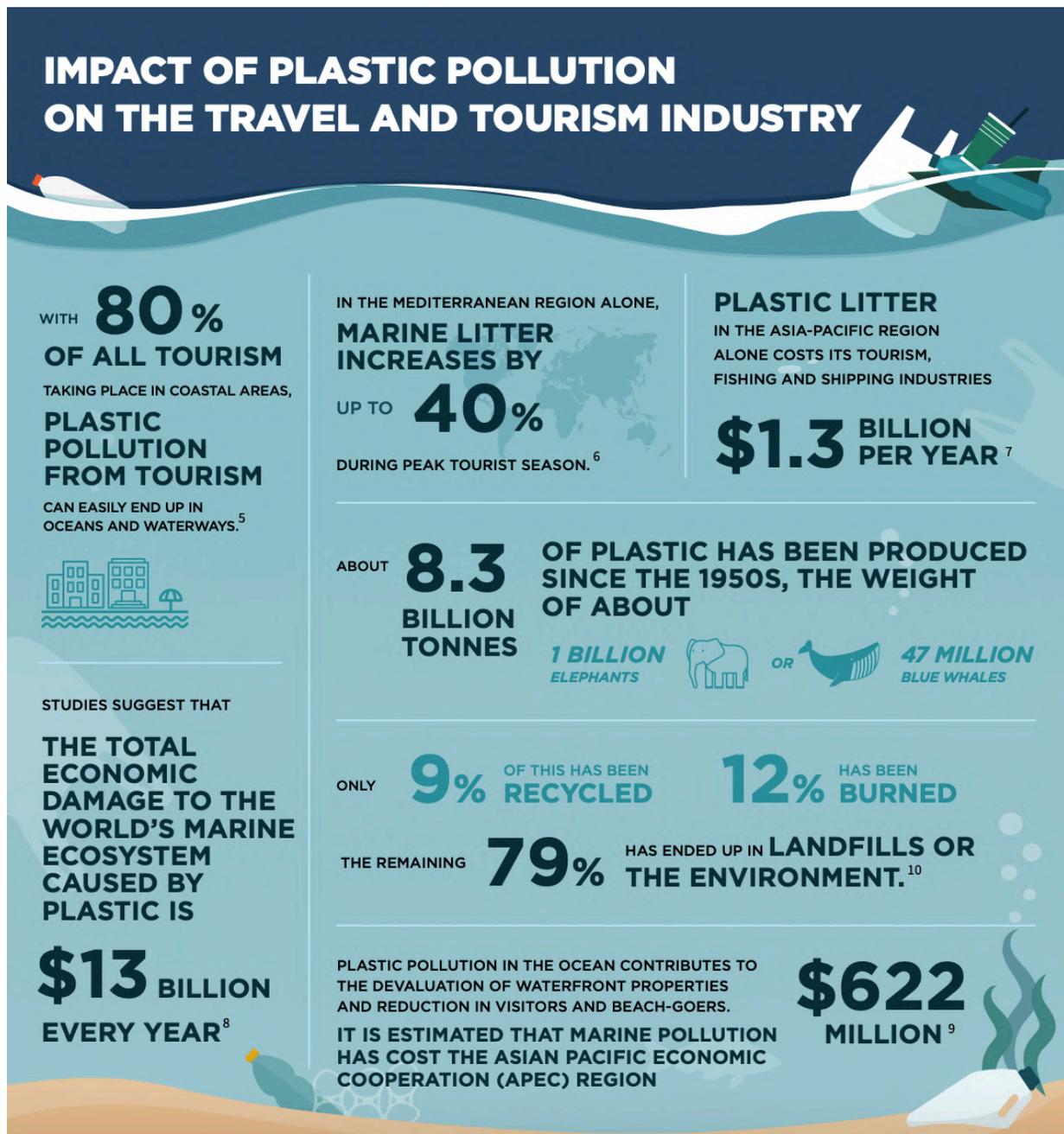
Every year, according to UNEP (2021), 5 trillion single-use plastic bags are used, and every minute, one million plastic drinking bottles are purchased around the globe. This leads to **300 million tonnes of plastic waste** each year. Among the most common plastics found in the environment are bottles, bottle caps, cigarette buds, food wrappers, grocery bags, drink lids, straws and stirrers (UNEP, 2021).

Now, although the solution to this challenge is neither easy nor quick, the first two biggest steps we should take are:

- first, reducing the production of plastics by finding suitable alternative materials AND producing plastics that are designed to be **circular**; and
- second, effectively managing our current plastic waste, by giving an adequate treatment (i.e., **recycling**) to the plastics that already exist.

This first topic goes back to the circular economy that we discussed in the Introduction of this document, remember? The fight against plastic waste must **necessarily** involve innovating the way we produce plastics, making sure that they are either **reusable**, **recyclable** or **compostable** (Ellen MacArthur Foundation, 2021).

Plastic pollution also poses a huge threat to **tourism destinations** across the globe. Take a look at the infographic below to understand why:



(PATA, 2020)

As you can see from the infographic, plastic pollution not only has severe consequences on the environment of destinations but also causes negative **economic** impacts, such as the costs for cleaning and collecting this waste and the decreased visual attractiveness of the place, especially beaches and riverfronts. But tourism itself is also to blame for this problem.

Tourism activities and tourism businesses contribute greatly to plastic pollution.

In the Mediterranean, for example, marine litter increases up to 40% during tourist peak season (One Planet, 2021), and this is why it is important for tourism businesses to, just as with food waste reduction, take the lead in the fight against plastic waste.

3.2 PLASTIC WASTE IN THAILAND AND THAI TOURISM

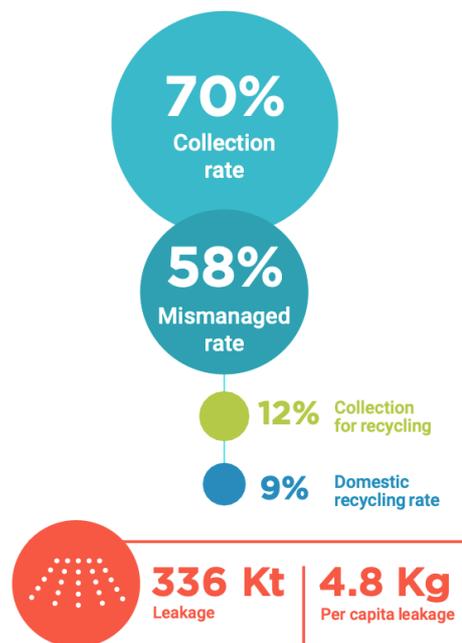
The Asia Pacific is responsible for producing most of the plastic waste that enters the world's oceans. The higher production and consumption of plastic products are explained by the increased economic power of the region, but this was not met with a compatible **waste management infrastructure** (Ocean Conservancy, 2017). As you have seen in the infographic, the vast majority of plastics (91%) is *not* recycled.

In Thailand, about **2 million tonnes of plastic waste** have been generated every year in the last decade, and it is estimated that up to a quarter of this amount comes from other nations, flowing into Thailand through the international plastic waste trade (Rujivanarom, 2021).



Moreover, according to a study conducted by IUCN (2020), **tourism** is the third sector with the highest plastic leakage rates in the country, behind only the packaging and textiles sectors. Most plastic waste in tourism consists of single-use plastic water bottles, and this is why tourism service providers must adopt solutions to fight this common type of waste (many strategies will be presented in the next section).

To tackle the issue of plastic pollution in Thailand, the Thai government has launched the [Roadmap on Plastic Waste Management 2018-2030](#), with measures to minimise and prevent the consumption of seven plastic items and types, through bans and campaigns such as ‘Every Day Say No To Plastic Bags’ ([Bangkok Post, 2020](#)).



(Global view of plastics in Thailand. IUCN, 2020)

Next, we will move on to the Plastic Waste Reduction standard, which, like the Food Waste standard, was also developed after thorough research through documents, reports, presentations and toolkits for plastic waste prevention and reduction.

The **materials** used in the development of the standard include, for example, the report [Rethinking Single-Use Plastic Products in Travel & Tourism](#) by UNEP and WTTC, the guide [How to Reduce Single-Use Plastic: Guidance for Tourism Businesses](#) by Futouris, the report [Addressing Pollution from Single-Use Plastics: A Life Cycle Approach – Key messages for tourism businesses](#), by the Global Tourism Plastics Initiative, as well as many other important resources that will be mentioned and referenced in this document.



3.3 PLASTIC WASTE REDUCTION STANDARD AND CRITERIA

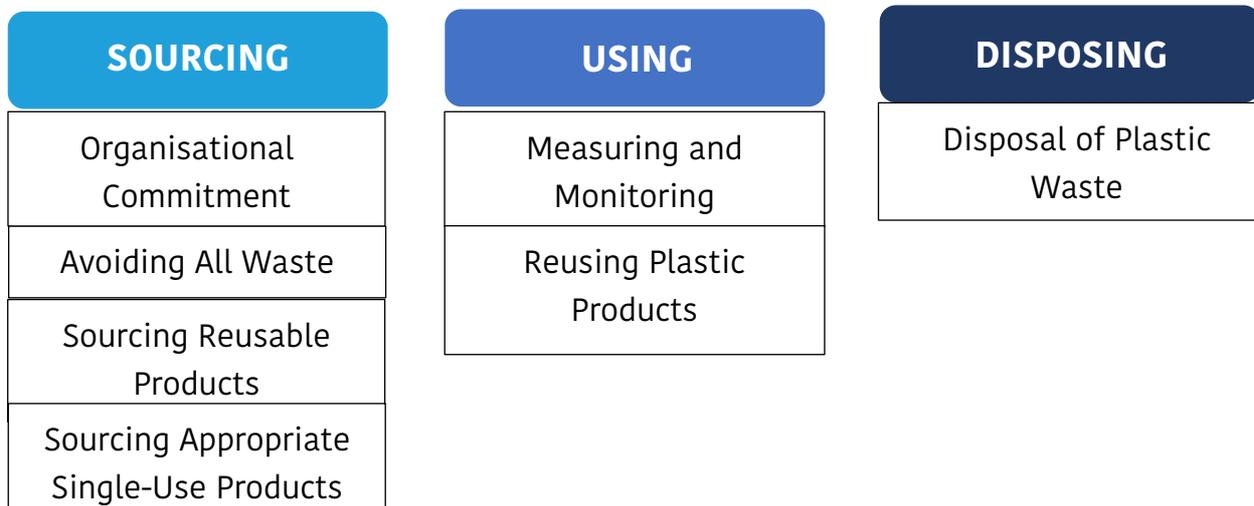
In this section, we will present the standard and criteria for Plastic Waste Reduction, which, likewise with the Food Waste Reduction standard, will also be supported by examples, case studies, tools and resources for better **guidance** and understanding.

The Plastic Waste Reduction standard can be used by any tourism business, as plastics are still a challenge to be overcome in most households, communities, businesses and industries. Nevertheless, there might be criteria and/or indicators that will not be applicable to your context, so remember to follow the icon scheme on page 10.

The criteria for Plastic Waste Reduction are also divided into the three main steps of the plastic consumption cycle: **sourcing**, **using** and **disposing of**. Here, the greatest efforts should lie on:

- first, the avoidance of purchasing non-recyclable, non-reusable and/or non-biodegradable products, and the search for plastic-free solutions;
- second, the implementation of actions to continuously reduce plastic waste (through measuring, monitoring and setting reduction goals) and to prolong the life of plastic products that could not be avoided; and
- third, the adequate disposal of plastic waste that was generated despite efforts in the first two stages.

The main criteria for each of these three stages are the following:





Differently from the Food Waste Reduction standard, in which the main efforts concentrate on the responsible storage, preparation and service (the USING phase), with **plastics** the focus should be on the *first* phase. This is because businesses should, first, AVOID the procurement of plastics, so that, in the next steps, there is as little plastic as possible in the business's operations. Therefore, the SOURCING phase is **crucial** for plastic waste reduction.

3.3.1 PLASTIC WASTE REDUCTION CRITERIA – SOURCING

Before looking into the strategies for sustainable sourcing to prevent plastic waste, however, as we have seen in the Food Waste Standard, the first step is always having buy-in from the senior management or community leader. **Organisational Commitment**, thus, is the first criterion of the standard, as it will allow the policy development, planning and implementation of all the subsequent steps.

This criterion also involves training staff, communicating plastic waste reduction efforts to customers and, very importantly, **engaging** suppliers. As you will see, it might be necessary for the business to raise awareness and provide information for suppliers on the importance of plastic reduction as well as work together with them to find ways of reducing waste from packing and packaging.

As for the other three criteria of the SOURCING phase, they consist of strategies for avoiding the procurement of any single-use or non-recyclable materials, and for finding the most appropriate single-use options for your context.

Let's start then with the first phase of the Plastic Waste Reduction standard.

Organisational Commitment	
The business is committed to applying strategies towards plastic avoidance and plastic waste reduction and engages all staff, suppliers and stakeholders in these efforts.	
Subcriteria	Indicators
 <p>1. Organisational buy-in</p> <p></p>	<p><input type="checkbox"/> Can managers and staff with roles related to plastic waste management explain the environmental and economic benefits of plastic waste reduction?</p> <p><input type="checkbox"/> Is your business (including senior management) engaged and committed to applying plastic waste prevention strategies?</p> <p><input type="checkbox"/> Is your business part of any global movement (e.g., Global Tourism Plastics Initiative)?</p>
 <p>2. Policy development and communication</p> <p></p>	<p><input type="checkbox"/> Does your business possess a sustainability policy that includes its commitment to plastic waste avoidance and reduction in the mission statement, as well as throughout the organisational strategies?</p> <p><input type="checkbox"/> Is this policy communicated on the business's online platforms and throughout the facility?</p>
    <p>3. Sustainable product development</p> <p></p>	<p><input type="checkbox"/> Does your business, if applicable, design products and experiences for tourists (e.g., tours, excursions, activities) that are plastic waste-free from the start?¹⁹</p>
 <p>4. Supplier engagement and awareness raising</p>	<p><input type="checkbox"/> Does your business choose to work, whenever possible, with suppliers that are also committed to reducing plastic waste in their operations and/or that are engaged in emissions reduction efforts/carbon offsetting schemes?</p>

¹⁹ [This toolkit](#) by Searious Business gives tips and recommendations for developing responsible and plastic-waste free tours.

		<ul style="list-style-type: none"> <input type="checkbox"/> Does your business raise suppliers' awareness on ways to reduce or eliminate unnecessary plastic packaging (especially double packaging)? <input type="checkbox"/> Does your business suggest best practices and plastic alternatives to suppliers? <input type="checkbox"/> Does your business create incentives for suppliers to reduce plastics (such as promoting and marketing them, establishing partnerships and/or long-term contracts, etc.)? <input type="checkbox"/> Does your business negotiate with suppliers ways of sending back product packages for refill (such as bottles of cleaning products, liquid soap, shampoo, etc.)? <input type="checkbox"/> Does your business negotiate with suppliers a deposit system/return system for delivery packaging (e.g., reusable crates, bottles, cool boxes)?
--	---	--

As you can see from the first part of the **Organisational Commitment** criterion, engaging and assisting suppliers to reduce plastics in their operations has a direct impact on the amount of plastic waste your business will generate. **Communicating** with your suppliers about ways of reducing plastic packaging, for example, will not only help tackle the plastic waste problem but will also cut costs.

Case Study



[Six Senses only works with partners and suppliers who share its commitment to Zero Waste and Plastic Free.](#) Six Senses Laamu, Maldives, for instance, has removed all Styrofoam boxes from its sourcing operations, by providing suppliers with [biodegradable](#) thermo boxes. You will see another case study on how to engage suppliers and reuse packaging and packing boxes/ cartons in the section of the USING phase, when we talk about reverse logistics (page 73).

	<p>5. Staff involvement and training</p> <p>✓ ✓ ✓</p>	<p><input type="checkbox"/> Does your business raise awareness of all the staff (including tour guides, tour leaders, drivers, salespeople etc. who have direct communication with customers) on the importance of plastic waste management?</p> <p><input type="checkbox"/> Does your business provide staff training on best practices to prevent plastic waste, including presentations, Q&As, off-site visits to recycling sites and/or volunteering activities such as beach/river clean-ups?</p>
	<p>6. Stakeholder engagement</p> <p>✓ ✓ ✓</p>	<p><input type="checkbox"/> Does your business engage with other businesses and stakeholders (e.g., by forming working groups) to discuss and share plastic reduction initiatives?</p>
	<p>7. Guest/customer communication²⁰</p> <p>✓ ✓ ✓</p>	<p><input type="checkbox"/> Does your business communicate its sustainability efforts towards plastic waste reduction to customers and guests through the website, social media as well as in the facility (through signages) to raise their awareness?</p> <p><input type="checkbox"/> Is the frontline staff able to communicate the business’s plastic reduction strategies to customers/guests and help them make more sustainable choices?</p>



Plastic Free Toolkit for Tour Operators (2020). This guide by PATA is designed to assist tour operators to reduce plastic waste in operations, but it can also be applied to other tourism businesses that wish to learn how to start implementing plastic reduction measures. See pages 13 and 14 for more guidance on the criterion of Organisational Commitment.

²⁰ See some tips on guest communication on page 17 of the [How to Reduce Single-Use Plastic](#) report as well as page 30 of the [PATA Plastic Free Toolkit for Tour Operators](#).

The second criterion of the SOURCING phase is **Avoiding All Waste**, which looks into finding strategies and solutions that avoid all single-use waste in the first place by, for example, opting for dispensers rather than single-use packaging.

An analysis conducted by [EXO Foundation](#) (2019), part of the [EXO Travel Group](#), revealed that, while on a tour, each traveller consumes an average of four **plastic water bottles** a day. Given that, at that time, they hosted approximately 150,000 tourists a year, which alone accounts for 600,000 single-use plastic bottles being disposed of every year.

EXO decided to tackle this issue by incentivising the use of reusable water bottles and refill stations by both staff and guests, which showed great results (see case study on the next page). For this reason, the same strategy is recommended to all businesses, households and consumers – and the first subcriteria below focuses exactly on this: the avoidance of single-use plastic water bottles.



Avoiding All Waste

The business is committed to finding solutions for common plastic waste challenges that not only avoid plastic waste but also any type of waste.

Subcriteria		Indicators
∞	8. Avoiding plastic water bottles	<input type="checkbox"/> Does your business reduce (or, ideally, eliminate) plastic water bottles by installing refill stations or water fountains throughout the facility? <input type="checkbox"/> Does your business provide reusable mugs and/or glasses for water drinking in these refill stations and water fountains?

		<ul style="list-style-type: none"> <input type="checkbox"/> Does your business provide (or sell) reusable water bottles to staff and guests? <input type="checkbox"/> Does your business encourage guests to use reusable water bottles and refill stations by raising awareness of the issue of plastic pollution and by ensuring them the water is safe for drinking? <input type="checkbox"/> Does your business offer and recommend water from a refill station (or tap water when safe for drinking) to guests when they order plastic water bottles? <input type="checkbox"/> Does your business ensure the sanitation and hygiene of the refill stations? <input type="checkbox"/> Does the staff (especially tour guides) set the example to customers by having and using their own refillable water bottles? <input type="checkbox"/> In the case of a hotel, does your business place reusable glass bottles filled with drinking water in each room (and encourage guests to ask staff to refill whenever needed)?
--	---	--

Case Study



The [Refill My Bottle App](#), developed by [EXO Foundation](#), allows users to identify places near them (cafes, restaurants, hotels, shops, museums, etc.) that have refillable water stations. **Refills** are currently available in 4,000 locations around the world! Why not install refill water stations in your business too? You can also sell **branded reusable bottles** to customers and guests to increase their motivation.

Another organisation that provides reusable water bottles and refill stations to customers is the tour operator [Discova](#). They reported having saved over 15 tonnes of plastic waste between 2017 and 2019 by applying strategies to replace single-use plastics, such as the already mentioned reusable bottles and investment in **biodegradable**, package-free wet tissues. These tissues have replaced a total of 225,446 plastic-wrapped wet napkins (almost one ton of saved plastic waste).

Tool



[Trash Hero](#) is an organisation founded in Thailand in 2013 that aims to bring communities together to clean and reduce waste in the environment; create a sustainable future through projects that help reduce plastic pollution; and encourage long-term behavioural change. One of its initiatives is the [Bottles & Bags](#) Programme in Thailand. Businesses can purchase Trash Hero’s **reusable bags and bottles** to be resold and become part of the Trash Hero movement and refill [online map](#). Why not have a look at this initiative as well as other potential collaborations with Trash Hero?

Single-use plastic water bottles, as you know by now, are significant contributors to the world’s plastic waste problem. **But they are not the only ones.** Single-use toiletries, sauce sachets, takeaway packaging and coffee cups, just to name a few, are also extremely **common plastic waste in tourism businesses** and thus should be addressed. One key solution in this sense is to choose dispensers, jars, bottles and other refillable containers over disposable individual items.

	<p>9. Avoiding single-use toiletries and sachets</p> <p></p>	<ul style="list-style-type: none"> <input type="checkbox"/> Does your business use dispensers for liquid soap, shampoo, etc. instead of single-use toiletries? <input type="checkbox"/> Does your business use dispensers for sauce (such as ketchup and mayonnaise) instead of plastic sachets? <input type="checkbox"/> Does your business provide sugar, salt and pepper in dispensers, shakers or paper sachets instead of plastic ones? <input type="checkbox"/> Does your business provide jams, honey and butter in dispensers, bowls, or jars instead of plastic pre-portioned packages? <input type="checkbox"/> Does your business provide loose tea bags (or even loose tea leaves) in jars instead of single tea bag wrappings?
--	---	--

 	<p>10. Avoiding plastic film wrap</p> <p>  </p>	<p><input type="checkbox"/> Does your business avoid and regularly monitor the usage of plastic film wrap and tin foil to cover food leftovers or ingredients and set reduction goals?</p>
	<p>11. Avoiding leaflets</p> <p>  </p>	<p><input type="checkbox"/> Does your business choose digital communication and apps instead of having leaflets or laminated brochures?</p>

[From Pollution to Solution: A Global Assessment of Marine Litter and Plastic Pollution](#) (2020). This comprehensive assessment, developed by UNEP, examines the magnitude and severity of marine litter and plastic pollution and reviews existing solutions and actions.

[The New Plastics Economy: Rethinking the Future of Plastics](#) (2016). This publication, by the Ellen MacArthur Foundation, is another great resource for those who wish to have a broader understanding of the plastic challenge and to learn how to rethink and transform global plastic packaging material flows.

[Stop the Flood of Plastic: Effective Measures to Avoid Single-Use Plastics and Packaging in Hotels](#). (2019). This report from WWF Germany provides the top 10 measures for reducing single-use plastics, as well as case studies and recommendations for tourism businesses (hotels and tour operators) and tourists.

[Toolkit for Plastic Waste-Free Hospitality](#) and **[Toolkit for Plastic Waste-Free Tours](#)** (2020). These toolkits by IUCN, Norad and Searious Business provide practical and straightforward tips for tourism businesses to start implementing plastic waste reduction strategies.

The COVID-19 pandemic, besides all its economic, social and health and safety implications, also led to severe setbacks in the world’s fight against plastic waste. Single-use plastics are perceived as more hygienic than reusable materials because they are disposed of immediately after being used a single time.

However, scientists argue that this is not necessarily true and that **reusable products**, after being washed and sanitised, are as safe and efficient as single-use ones (Greenpeace, 2020; Futouris, 2021).

Therefore, it is possible to **maintain hygiene standards and at the same time avoid single-use plastic products**, such as gloves, masks (which are made from plastic fibres), disposable wipes and hand sanitisers, by, for example:

- reducing touchpoints;
- choosing refillable sanitisers over single-use ones;
- incentivising frequent hand washing and use of sanitisers;
- incentivising reusable masks.

(See more guidance on page 18 of the guide [How to Reduce Single-Use Plastic](#) as well as on the [Recommendations for the Tourism Sector to Continue Taking Action on Plastic Pollution during COVID-19 Recovery](#).)

	<p>12. Reducing Covid-19 single-use PPE</p> <p></p>	<p><input type="checkbox"/> Does your business provide hand sanitiser dispensers throughout the facility?</p> <p><input type="checkbox"/> Does your business encourage the use of hand sanitisers instead of single-use plastic gloves (in a buffet for example) if these are not mandatory by local regulations?</p> <p><input type="checkbox"/> Does your business encourage guests and staff to use reusable masks (e.g., selling reusable “branded” masks)?</p>
---	---	---

! The ‘[Keep Our Sand and Sea Plastic Free](#)’ campaign, funded by TUI Care Foundation, provides several open-sourced [downloadable resources](#) on plastic waste reduction, such as 'Information to Help Hotels to Reduce Plastic during COVID-19', 'Plastic Free Hotel Training Toolkit', a PowerPoint presentation for hotel staff, info sheets for guests, among others.

Sourcing Reusable Products

The business is committed to prioritising the sourcing of reusable products over single-use ones as much as possible.

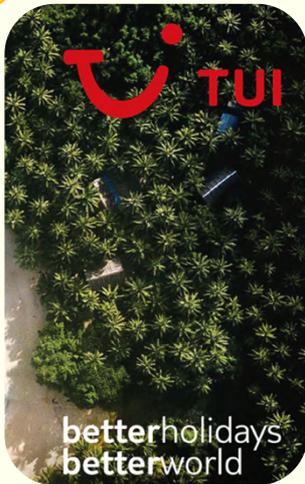
Subcriteria	Indicators
<p>∞</p> <p>15. Sourcing reusable products</p> <p>✓ ✓ ✓</p>	<ul style="list-style-type: none"> <input type="checkbox"/> Does your business source long-lasting reusable dishware, plates, bowls and containers instead of plastic ones? <input type="checkbox"/> Do you purchase reusable cloths made from natural fibres? <input type="checkbox"/> Does your business purchase reusable laundry bags made of cotton or linen? <input type="checkbox"/> Does your business prioritise sourcing other types of reusable products over single-use ones whenever applicable and available?

! [Plastic Reduction Guidelines for Hotels](#) (2020). TUI has developed guidelines for hoteliers to help them create their own single-use plastic reduction programme and implement it throughout their operations. It provides information, practical advice and suggested alternatives to many single-use and unnecessary plastic items that are commonly found in hotels.

The [Six Senses](#) brand has always been committed to combating plastic waste and for many years it does not offer plastic straws and single-use plastic toiletries in its hotels. Nevertheless, the company decided to take a step further and established a new plastic waste strategy, with the ambitious goal of **eliminating all plastic** from its 18 resorts and 29 spas in 20 countries until 2022. Up to 2019, Six Senses reported having eliminated or avoided over 1.69 million water bottles, 1.12 million coffee capsules, 26,000 toothbrushes, 460,000 packaging items, 52,000 single-use bags and over 320,000 plastic straws (UNEP & WTTC, 2021). Click [here](#) to know how they reached these targets.

Case Study



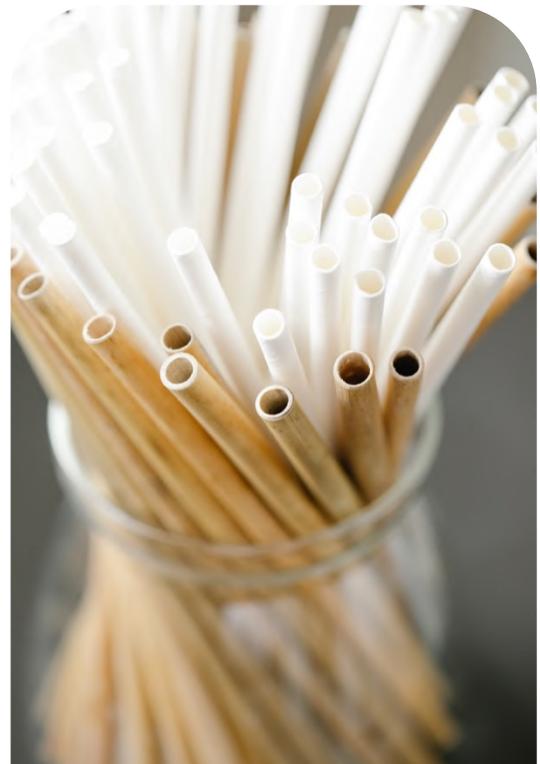


The [TUI Group](#) is another company that, despite already being committed to sustainability, decided to dive deeper into greening its operations and value chain. The group, which includes accommodation, transport and destination services, introduced in 2018 a plastic waste reduction workstream, with the target of reducing single-use plastic products (SUPPs) by 250 million across the group. By the end of 2019, TUI reported having eliminated 197 million SUPPs across the hotels, 31 million from cruises and 27 million from airlines. Learn how [here](#).



Despite efforts on sourcing reusable materials as much as possible, in our everyday activities as well as business operations, some single-use products, such as bins for organic waste or takeaway packaging, are inevitable. However, non-recyclable single-use plastics, as we all know, inevitably end up in landfills and take hundreds of years to decompose.

For this reason, the next and last criterion of the SOURCING phase, **Sourcing Appropriate Single-Use Products**, presents strategies on how to choose the most sustainable single-use options that can be disposed of responsibly in the business' municipality. Therefore, the first subcriterion is **Understanding the local context**, as this will allow the business to make more informed sourcing decisions. For example, it would be meaningless for a hotel to purchase industrially compostable bin bags if the municipality does not have the infrastructure to process this product. And if you would use this bin bag to collect, for instance, glass waste, this compostable material would even contaminate the recycling system.



Sourcing Appropriate Single-Use Products

The business is committed to finding the most sustainable single-use products that can be disposed of responsibly in its context.

	Subcriteria	Indicators
	16. Understanding local context 	<input type="checkbox"/> Does your business understand which materials are accepted by the local waste collection service for composting, recovery and recycling?
	17. Local sourcing²¹ 	<input type="checkbox"/> Does your business source products made with local materials to avoid purchasing plastic ones (such as banana leaves for food wrapping)? <input type="checkbox"/> Does your business source products that can be recovered and recycled locally (i.e., that the municipality has the infrastructure to collect and process)?
	18. Sourcing sustainable and appropriate single-use products 	<input type="checkbox"/> Does your business prioritise sourcing single-use products that are either recyclable, biodegradable ²² or that have a high percentage of recycled plastic content? <input type="checkbox"/> Does your business source sustainable and appropriate bin bags for organic waste (such as made of potato starch, which can break down in landfills)? <input type="checkbox"/> Does your business source sustainable and appropriate takeaway packaging? <input type="checkbox"/> Does your business source sustainable and appropriate straws and stirrers (such as made of paper, bamboo or similar)? ²³

²¹ Get some ideas [here](#) on what kind of products tourism businesses can source locally.

²² See the products from [Fang Thai Factory](#) and [Gracz](#) as examples in Thailand.

²³ Remember to check the product's **composition** (to see if it in fact does not contain plastics) and the **disposal** options (to see if this product can be disposed of responsibly in your municipality).

How to Reduce Single-Use Plastic: Guidance for Tourism Businesses (2021). This guide by Futouris supports tourism businesses in finding more sustainable alternatives to commonly used single-use plastic products. The recommended alternatives are rated according to their sustainability performance index, which takes into consideration the impact of the material on the environment, recyclability and existing disposal options, as you can see in the image below.

Single-use gloves from Latex or Nitrile **Impact 8,55** 

POTENTIAL ALTERNATIVE	IMPACT
Frequent hand washing	0
Reusable (washable) gloves	4,27

Plastic bin bags **Impact 5,07** 

POTENTIAL ALTERNATIVE	IMPACT
No bin bags at all	0
Bio-based bin bags	5,26

 **Single-use slippers** **Impact 8,13**
Plastic wrapping **Impact 6,79**

POTENTIAL ALTERNATIVE	IMPACT
Reusable slippers made from mixed fibres and available on request, unwrapped	4,06
Reusable slippers made from mixed fibres available on request, in cotton bag	Slipper 4,06, cotton bag 3,51
Single-use slippers from natural fibres (e.g. hemp) unwrapped	6,43
Single-use slippers from recycled plastic, unwrapped	7,38
Single-use slippers (mixed fibres) unwrapped	8,13
Single-use slippers (mixed fibres) wrapped with slim reusable band	Slippers 8,13, band 3,38

Plastic laundry bags (medium sized) **Impact 5,07**

POTENTIAL ALTERNATIVE	IMPACT
Reusable laundry bags (medium size) made of cotton or linen	2,63
Single-use laundry bags (medium size) made from paper	4,37

Single-use plastic amenities **Impact 8,54**
Plastic wrapping **Impact 7,05** 

POTENTIAL ALTERNATIVE	IMPACT
No amenities at all	0
Replace amenities with services (e.g. sewing repair, show-shining on request)	0
Amenities made from mixed plastics and wrapped in paper	Paper wrapping 5,83 + Amenity 8,54
Amenities made from and wrapped in bio-based plastic material	7,01

(Futouris, 2021)

 **CLEANING MATERIALS**

Cleaning products in plastic bottles **Impact 5,29**
Single-use wipes (mixed fibres) **Impact 8,13**

POTENTIAL ALTERNATIVE	IMPACT
Cleaning products provided in large containers that are returned to supplier for refill	1,76
Cleaning products provided in large containers that are separated for recycling	3,38
Reusable wipes made from natural fibres	3,51
Cleaning products provided in plastic bag refills that are separated for recycling	3,53
Reusable wipes made from microfibres	4,06





Addressing Pollution from Single-Use Plastics: A life Cycle Approach – Key messages for tourism businesses (2021). This document, developed by the Global

Tourism Plastics Initiative, aims to educate tourism stakeholders and provide evidence-based guidance for decision-making to address pollution from single-use plastic products. It provides key messages and recommendations specifically for bottles, cups, bags, takeaway food packaging and tableware.

You may have felt slightly overwhelmed by the SOURCING criteria presented in the previous pages, but, as we already mentioned, it is important to take one step at a time. **Changing consumption and procurement patterns will not happen overnight**, so the more you research and familiarise yourself with plastic waste reduction strategies, the more **solutions** you will find. There are countless resources and best practices out there to learn from and get inspired by.

Also, keep in mind that eliminating products saves money, and replacing products that you cannot operate without might be much easier and cheaper than you think.

A study conducted with hotels in Europe shows the potential savings that these businesses have from using sustainable alternatives. Take a look:

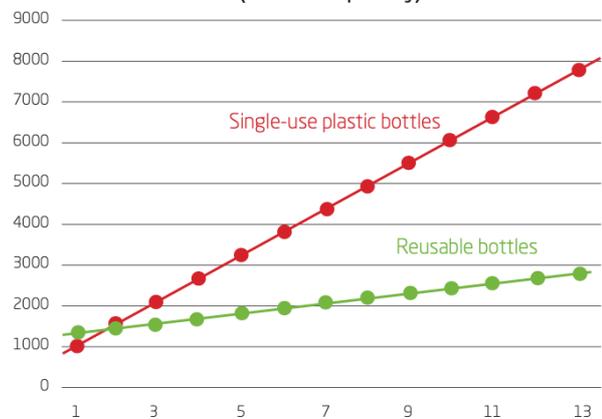
€ = Cost reduction 🗑️ = Waste material reduction ☁️ = CO₂-reduction

Soap dispensing system vs miniatures

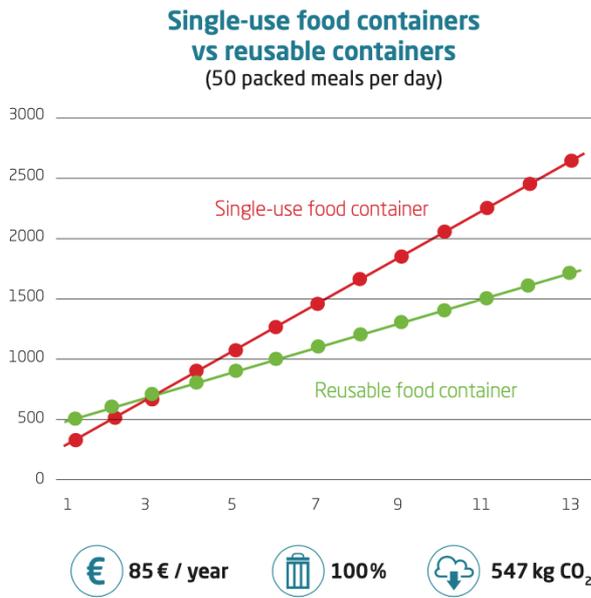


€ 233 € / half year 🗑️ 66% ☁️ 2.2 kg CO₂

Single-use water bottles vs reusable bottles
(50 bottles per day)



€ 4,475 € / year 🗑️ 100% ☁️ 1,497 kg CO₂



(Searious Business, in Fotouris, 2021)

As you can see from the graphs, even though the initial cost of sustainable alternatives may be slightly higher than of plastic products, in the long run, they are much more **cost-effective**, as all these alternatives generate less procurement costs, less waste of materials *and* less CO₂ emissions.

Now, let’s continue looking at strategies for plastic waste reduction as we move on to the next phase of our standard, USING.

3.3.2 PLASTIC WASTE REDUCTION CRITERIA – USING

As we have discussed, when a business actively avoids the procurement of plastics in the SOURCING phase, this creates the advantage of **simplifying** the following phases, as there is as little plastic as possible in the business’s operations.



If you purchase single-use plastic cutlery for your sit-in customers, for example, these plastics, as the name suggests, will only be used a single time and then be disposed of. There is not much the business can do in this case. These plastic cutleries cannot be reused, repurposed or recycled, and they will end up in landfills. This is why we emphasise the importance of the first phase for a **more significant reduction of your business’s plastic footprint**.

Now, in the USING phase, we will look at the strategies that can be taken by a business to:

- **Assess the amount of plastic waste in the business’s operations**, despite efforts in the SOURCING phase. This involves regularly measuring, setting goals and monitoring results for continuous improvement towards plastic waste reduction.
- **Prolong the life of existing or unavoidable plastics in your business’s operations**. This entails finding other uses for plastic products and/or returning plastic packaging and containers for refill with the suppliers so that this material can go back and forth several times instead of being disposed of after a single use.

Let’s get started, then, with the first criterion of the USING phase, **Measuring and Monitoring**.

Measuring and Monitoring	
The business measures plastic waste, sets goals for plastic waste reduction, monitors results and adapts strategies accordingly.	
Subcriteria	Indicators
 <p>19. All waste separation</p> 	<input type="checkbox"/> Does your business have separate bins for organic and inorganic (plastics, glass, paper, etc.) waste throughout the facility that are properly labelled and differentiated (e.g., through colours)? <input type="checkbox"/> Does your business encourage staff and guests to separate waste accordingly?

	<p>20. Plastic waste separation</p> <p></p>	<p><input type="checkbox"/> Does your business separate plastic waste into recyclable and non-recyclable?</p>
---	---	---

As discussed in the Food Waste Standard, measuring & monitoring is crucial for the business to identify exactly what type of waste is being generated (and where/ which department) and to be able to create and adapt strategies. In this sense, **separating waste** is important to obtain more accurate results and, thus, make better decisions.

	<p>21. Operations assessment</p> <p></p>	<p><input type="checkbox"/> Does your business map out and measure the amount of plastic waste generated in each type of operation (in the office, on tours, in events, in food handling, etc.?) to understand where waste comes from and what prevention strategies are needed?</p> <p><input type="checkbox"/> Does your business measure the quantity of plastics purchased and the cost of these plastics (by department and/or operation)?</p>
	<p>22. Supply chain assessment</p> <p></p>	<p><input type="checkbox"/> If possible, does your business map the supply chain (transportation, accommodation, food & beverage, activities providers, etc.) to understand where the plastics come from, and which suppliers tend to produce and use the largest number of plastic items?</p> <p><input type="checkbox"/> Does your business gather data (if available) from suppliers on their current performance on plastic waste reduction?</p>
	<p>23. Baseline assessment</p> <p></p>	<p><input type="checkbox"/> After assessing the use of plastics in the operations and supply chain, does your business compile (e.g., in a tracking spreadsheet) the corresponding quantities and costs of each type of plastic waste on a monthly or annual basis?</p>

	<p>24. Setting goals and monitoring</p> <p style="text-align: center;">    </p>	<p><input type="checkbox"/> After having obtained the baseline, does your business set plastic waste reduction goals?</p> <p><input type="checkbox"/> Does your business monitor the results weekly or fortnightly through plastic waste audits?</p> <p><input type="checkbox"/> Does your business revise and adapt strategies and staff training depending on the success and failures of current efforts towards plastic waste reduction?</p>
---	---	--

Tool

The guide [3 Steps to Reduce Plastic & Benefit Your Business](#) provides not only key information and tips (especially for restaurants and eateries) on how to reduce plastics, but also [plastic measuring tools](#), such as the [Plastic Footprint Tool](#) and the [Foodware Cost Calculator](#), that measures a business’s potential costs savings and plastic reduction.

Plastic Footprint

Share the Plastic Footprint Tool:

 Share
  Tweet




Step 1 - Assess Your Plastic Footprint

This Plastic Footprint Tool will help you identify:

- What types of disposable plastic you use
- How much you buy -- and how much it costs you
- Which products to target

In Step 2 – Create a Plastic Reduction Plan, you will use this information to figure out which plastics to eliminate, reduce, or replace.

Didn't get here from [3 Steps to Reduce Plastic & Benefit Your Business: A Guide for Restaurants & Eateries](#)? Download the guide to start your plastic reduction journey!



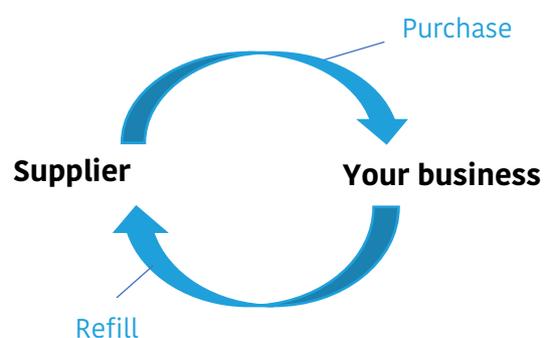
Hotel Waste Measurement Methodology. (2021). This [methodology](#) developed by Greenview and WWF, with the participation of leading brands in the tourism industry, such as Accor, Hilton, Hyatt, IHG Hotels & Resorts and Marriott International, aims to provide a consistent framework for tourism and hospitality businesses to track waste and report progress against goals. Although this methodology looks at all waste (including food waste, for example), it can certainly be applied only to plastics.

Finally, the last criterion of the USING phase, **Reusing Plastic Products**, looks into how the business can make the best use of those plastics that are unavoidable. Despite all the efforts in finding plastic-free solutions and sustainable alternatives to single-use plastics, certainly there will still be plastic products within your business's operations, especially at the beginning of your journey towards plastic waste reduction.

In this case, before disposing of these items, the business should first try to **reuse** them as much as possible and make these plastics **circulate** between you and your suppliers, by creating a system in which you can give back containers for refill. This strategy is part of the so-called **reverse logistics**.

Reverse logistics is a type of supply management that moves goods from the customers (in this case, your business) back to the sellers or manufacturers (your suppliers). Or, as put by the Circular Economy Practitioner Guide (2018), "reverse logistics is the process of collecting and aggregating products, components or materials at the end-of-life for reuse, recycling and returns. Reverse logistics, also referred to as "aftermarket supply chain," **closes the loop.**"

In other words, it means taking the plastic item that was going to be disposed of (thus at its end of life) and giving it back to the supplier for reuse (such as by refilling). This is a **circular economy** practice because you create a continuous loop between you and your supplier.



Reusing Plastic Products

The business reuses plastic products whenever possible to minimise plastic waste.

Subcriteria		Indicators
	<p>25. Reusing plastic products</p> <p>✓ ✓ ✓</p>	<p><input type="checkbox"/> Does your staff reuse plastic products whenever possible (such as reusing plastic containers for storing other items)?²⁴</p> <p><input type="checkbox"/> Does your business give back plastic containers to suppliers for refill?</p>

Case Study



[Marina Bay Sands](#), Singapore, [provides their suppliers with reusable hard plastic baskets when supplying fresh produce](#) such as fruits and vegetables. This not only minimises the spoilage of these products during transportation but also reduces significantly the amount of plastic waste (as well as cardboard waste) in their sourcing operations.

Finally, the last phase of our Plastic Waste Reduction standard is DISPOSING, and the only criteria in this phase, **Disposal of Plastic Waste**, looks at three ways of responsibly disposing of your plastic items.

²⁴ For health and safety reasons, however, using containers to store food or other food/beverage items is not recommended, as often the labels on the plastic containers are not changed to reflect what is now in the container, which can cause accidents.

3.3.3 PLASTIC WASTE REDUCTION CRITERIA – DISPOSING

The first two subcriteria suggest finding partnerships either for recycling or energy recovery. Before sending the plastic waste for the municipality collection, your business can find **collaboration** with other businesses and stakeholders to send out the plastic waste for informal recycling, or organisations and/or industries that will recycle or convert the waste into energy.



When these partnerships are not available/viable, the business should ensure the **appropriate plastic waste separation** (recyclables vs. non-recyclables) and discover, according to the municipality guidelines, what is the correct way to dispose of these two types of plastics.

Disposal of Plastic Waste

The business ensures, to the best of its ability, appropriate end-of-life options where plastics are permanently removed from nature by working with companies or industries that reprocess plastic materials or that use plastic waste for other means.

Subcriteria		Indicators
 26. Partnerships for recycling 	<input type="checkbox"/> Does your business establish partnerships or belong to a cluster of tourism stakeholders that collaborate with third-party companies and industries that recycle plastic materials?	
 27. Partnerships for energy recovery 	<input type="checkbox"/> Does your business collaborate with energy recovery organisations that use non-recyclable plastic waste as raw material and/or source of energy in industrial processes?	
 28. Adequate disposal in landfill 	<input type="checkbox"/> Does your business dispose of non-recyclable plastic materials in landfills that abide by all local disposal standards and regulations?	

Case Study

In the Philippines, [Green Antz Builders, Inc.](#) is an innovative social enterprise that produces alternative construction materials, such as eco-bricks, incorporating plastic waste. As mentioned on their website,



Green Antz's goal is to find innovative ways to divert plastic waste from landfills and upcycle to secondary uses: to demonstrate a new social, commercial & environmental model that combines circular economy with social elements and engineering ingenuity. So why not find similar organisations in your area to donate your plastic waste so that it can be upcycled?



We have now concluded the Plastic Waste Reduction standard, having gone through all the 7 criteria, 28 subcriteria and 69 indicators. As with the Food Waste standard, do not feel that your business must comply with all these criteria right away. While some businesses strive for zero plastic waste, the costs of doing so might be overwhelming for MSMEs, but it does not mean that these smaller businesses cannot contribute to creating a more sustainable and plastic-free tourism industry.

Therefore, keep in mind that your **main goal** should be to **reduce plastic waste as much as possible within the capacities of your business and the municipality.**

Similarly to what was discussed on the Food Waste standard, we suggest starting with the steps that are easier to implement first and **engaging the necessary people and stakeholders**, such as your staff, senior management, the suppliers and manufacturers as well as the customers/guests, in the fight against plastic waste.

Remember: by discussing together the challenges and opportunities of your specific context, you will more likely come up with efficient strategies and maintain these in the long term.

Again, we hope that the standards, case studies, tools and resources presented here helped you gain a deeper understanding of the plastic waste challenge and the best solutions to tackle it. For more guidance on how **all tourism businesses can help reduce plastic waste**, see the Solution Tree on page 90 of the Appendices. Finally, do not hesitate to contact us at ssr@pata.org for further guidance and support.

REFERENCES

- Achterberg, E., Hinfelaar, J., & Bocken, N. (2018). **The Value Hill Business Model Tool: Identifying Gaps and Opportunities in a Circular Network.** Available at <https://docplayer.net/86718304-The-value-hill-business-model-tool-identifying-gaps-and-opportunities-in-a-circular-network.html>
- Circle Economy & Sustainable Finance Lab. (2016). **Master Circular Business Within the Value Hill.** Available at <https://hetgroenebrein.nl/wp-content/uploads/2017/08/finance-white-paper-20160923.pdf>
- Circular Economy Practitioner Guide. (2018). **Reverse Logistics.** Available at <https://www.ceguide.org/Strategies-and-examples/Dispose/Reverse-logistics>
- Ellen MacArthur Foundation. (2021). **Designing Out Plastic Pollution.** Available at <https://ellenmacarthurfoundation.org/topics/plastics/overview>
- Ellen MacArthur Foundation. (2022). **What is a Circular Economy?.** Available at <https://ellenmacarthurfoundation.org/topics/circular-economy-introduction/overview>
- EXO Foundation. (2019). **EXO Refillable Bottles.** Available at www.youtube.com/watch?v=xaBELINCh7E&t=135
- EXO Foundation. (2021). Refill My Bottle App. Available at <https://exofoundation.org/refill-my-bottle-app/>
- Food and Agriculture Organization of the United Nations (FAO). (2011). **Global Food Losses and Food Waste: Extent, Causes and Prevention.** Available at <https://www.fao.org/3/mb060e/mb060e00.pdf>
- Food and Agriculture Organization of the United Nations (FAO). (2019). **Food Loss and Waste Facts.** Available at <https://www.fao.org/resources/infographics/infographics-details/en/c/317265/>
- Food and Agriculture Organization of the United Nations (FAO). (2021). **The State of Food Security and Nutrition in the World 2021.** Available at <https://www.fao.org/state-of-food-security-nutrition/en/>
- Futouris. (2021). **How to Reduce Single-Use Plastic: Guidance for Tourism Businesses.** Available at <https://www.futouris.org/en/tools/>
- German International Cooperation (GIZ) Thailand. (2020). **Food Waste: How to Properly Manage Waste in Thailand.** Available at https://www.thai-german-cooperation.info/en_US/food-waste-how-to-properly-manage-waste-in-thailand/
- Greenpeace. (2020). **Industry Should Not Exploit COVID-19 to Push More Plastic Pollution.** Available at <https://www.greenpeace.org/usa/news/industry-should-not-exploit-covid-19-to-push-more-plastic-pollution/>
- Greenview. (2018). **Green Lodging Trends Report.** Available at <https://greenview.sg/services/green-lodging-trends-report/>
- IUCN. (2020). **National Guidance for Plastic Pollution Hotspotting and Shaping Action: Final Report for Thailand.** Available at https://www.iucn.org/sites/dev/files/content/documents/thailand_final-report_2020_compressed.pdf
- Juvan, E. et al. (2021). Drivers of plate waste at buffets: A comprehensive conceptual model based on observational data and staff insights. **Annals of Tourism Research Empirical Insights**, 2, 1000010.
- Ocean Conservancy. (2017). **Stemming the Tide: Land-based Strategies for a Plastic-free Ocean.** Available at <https://oceanconservancy.org/wp-content/uploads/2017/04/full-report-stemming-the.pdf>

One Planet. (2021). Global Tourism Plastics Initiative. **Tourism's Plastic Pollution Problem**. Available at https://www.oneplanetnetwork.org/sites/default/files/from-crm/GTPI%2520Brochure_Final_En.pdf

Pacific Asia Travel Association (PATA). (2018). **PATA x Thai-SOS - The Food Waste Agenda in Thailand**.

Pacific Asia Travel Association (PATA). (2019). **BUFFET Toolkit**. Available at <https://www.datocms-assets.com/11161/1557461889-buffet-toolkit-18july.pdf>

Pacific Asia Travel Association (PATA). (2020). **Plastic Free Toolkit for Tour Operators**. Available at <https://static1.squarespace.com/static/5f24290fd0d0910ecab2b02e/t/601d0015cbe7a12057dbde0d/1612513305647/PlasticFree-TourOperator-2021-Feb2.pdf>

Rujivanarom, P. (2021). **Thailand's Plastic Waste Conundrum**. Available at <https://th.boell.org/en/2021/10/26/thailands-plastic-waste-conundrum>

Sustainable Hospitality Alliance. (2021). **Pathway to Net Positive Hospitality for the Planet**. Available at: <https://sustainablehospitalityalliance.org/wp-content/uploads/2022/03/Pathway-overview.pdf>

United Nations Environment Programme (UNEP). (2021). **In Bangkok, Tech Startups Take on Food Waste**. Available at <https://www.unep.org/news-and-stories/story/bangkok-tech-startups-take-food-waste>

United Nations Environment Programme (UNEP). (2021). **Our Planet is Drowning in Plastic Pollution** – it's time for change! Available at <https://www.unep.org/interactive/beat-plastic-pollution/>

United Nations Environment Programme (UNEP) & World Travel & Tourism Council (WTTC). (2021). **Rethinking Single-Use Plastic Products in Travel & Tourism: Impacts, Management Practices and Recommendations**. Available at <https://wedocs.unep.org/bitstream/handle/20.500.11822/36324/RSUP.pdf>

World Wildlife Fund (WWF). (2017). **Hotel Kitchen: Fighting Food Waste in Hotels**. Available at <https://www.worldwildlife.org/publications/hotel-kitchen-fighting-food-waste-in-hotels>

APPENDICES

Food Waste Reduction Standard

SOURCING

Organisational Commitment

	1. Organisational buy-in 	<input type="checkbox"/> Can managers and staff with roles related to food waste management explain the environmental and economic benefits of food waste reduction? <input type="checkbox"/> Is your business committed to applying food waste prevention strategies?
	2. Policy development and communication 	<input type="checkbox"/> Does your business possess a sustainability policy that includes its commitment to sustainable food and waste management in the mission statement, as well as throughout the organisational strategies? <input type="checkbox"/> Is this policy communicated in the business's online platforms and throughout the facility?
   	3. Sustainable product development 	<input type="checkbox"/> Does your business, if applicable, design products and experiences for tourists (e.g., tours, excursions, activities) with clear examples of preventing and reducing waste?
   	4. Staff involvement and training 	<input type="checkbox"/> Does your business raise awareness of all the staff (and not only those who work directly with food preparation and serving) on the benefits of food waste management? <input type="checkbox"/> Does your business provide staff training on best practices to prevent food waste, including presentations, Q&As, off-site visits to composting sites and/or volunteering activities such as surplus food donation to communities?
	5. Stakeholder engagement	<input type="checkbox"/> Does your business engage with other businesses and stakeholders (e.g., by forming working groups) to discuss and share food waste reduction initiatives?

		
Sustainable and Optimised Sourcing		
	6. Committed suppliers 	<input type="checkbox"/> Does your business work with suppliers that are also committed to minimising food waste?
	7. Local sourcing 	<input type="checkbox"/> Does your business prioritise local sourcing to reduce travel distance and likelihood of food spoilage? <input type="checkbox"/> Does your business prioritise local sourcing to facilitate buying less but more often according to the demand? <input type="checkbox"/> Does your business have a garden or farm to cultivate herbs, spices, vegetables, etc.?
	8. Seasonal sourcing 	<input type="checkbox"/> Does your business purchase products that are in season for more effective production logistics (with less travel distance and spoilage)?
	9. Optimised sourcing 	<input type="checkbox"/> Does your business monitor food usage, forecast consumer demand and take into consideration seasonality to adjust the frequency of purchases accordingly? <input type="checkbox"/> Does your business avoid over-purchasing by ordering food just before it is to be used/when it is needed?
	10. Single primary purchaser 	<input type="checkbox"/> Does your business assign the role of stock ordering to a single primary purchaser to prevent over-ordering by different employees (if possible, given the size of the operation)?
	11. Supplier relationship 	<input type="checkbox"/> Does your business establish long-term relationships with suppliers to ensure quality consistency of goods and avoid risks (spoilage)?

		<input type="checkbox"/> Does your business communicate with suppliers to ensure that the quality/ characteristic of products fits your needs (e.g., the correct sized vegetables, etc.)?
 	12. Streamlined deliveries   	<input type="checkbox"/> Does your business streamline procedures for receiving deliveries (especially chilled) and transferring goods to appropriate storage to minimise food spoilage and associated costs? <input type="checkbox"/> Does your business ensure that the products received have a long shelf life? <input type="checkbox"/> Does your business ensure that the delivered products are free from contaminants? <input type="checkbox"/> Does your business ensure that the products have been transported at the right temperature and with the right packaging to protect them from damage?

USING

Measuring and Monitoring

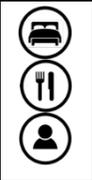
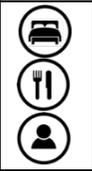
  	13. Food waste mapping   	<input type="checkbox"/> Does your business map out and measure the amount of food waste generated in each step of food usage (spoilage of raw materials, preparation, overproduction food, plate scrapings, etc.) to understand where waste comes from and what prevention strategies are needed? <input type="checkbox"/> Does your business use a tracking sheet or app for food waste mapping and measuring?
  	14. Waste and food waste separation   	<input type="checkbox"/> Does your business have separate bins for organic and inorganic waste throughout the facility? <input type="checkbox"/> In the kitchen, is the organic (food) waste further classified? For example, into reusable (such as meat leftovers to make broths and stocks), for redistribution (such as healthy and safe surplus food to be donated), compostable (such as vegetables and fruit peels and seeds), and unavoidable (such as bones, shells and oils)?
  	15. Inventory management   	<input type="checkbox"/> Does your business have a “stock and order” form (or inventory) in food storage areas to keep track of amounts of food items as they are used?

  	16. Setting goals and monitoring   	<input type="checkbox"/> After having obtained the baseline, does your business set food waste reduction goals? <input type="checkbox"/> Does your business monitor the results weekly or fortnightly through waste audits? <input type="checkbox"/> Does your business revise and adapt strategies and staff training depending on the success and failures of current efforts towards food waste reduction?
---	--	---

Responsible and Optimised Storage

  	17. Adequate storage   	<input type="checkbox"/> Does your staff handle storage carefully to avoid damage and spoilage by understanding how each food item should be stored? <input type="checkbox"/> Does your business assign one member of staff for checking fridge/freezer temperatures as well as room conditions (enough ventilation, adequate temperature, lack of sun exposure, etc.) for minimising food spoilage?
  	18. Use-by labelling   	<input type="checkbox"/> Does your business ensure that all food items are labelled correctly with purchase date and use-by date? <input type="checkbox"/> Does your business train staff on the differences in labelling (“best by,” “sell by,” “use by,” “freeze by,” “expires on”, etc.)?
  	19. Shelf-life extension   	<input type="checkbox"/> Does your business train staff on how to use items with the soonest expiration date first – FIFO (first in first out) and FEFO (first expired first out) principles? <input type="checkbox"/> Does your staff continually rotate stock by putting the newest product at the back of the shelf so that the oldest gets used first?
 	20. Optimised storage options   	<input type="checkbox"/> Does your business use, whenever possible, optimised storage options, such as marinating meats and vegetables, sous vide, ozone food preservation, etc.?

Responsible Preparation and Service

	21. Menu planning 	<input type="checkbox"/> Does your business frequently assess the popularity of dishes to adjust the menu and cut down dishes (and ingredients) that are not being ordered or that are being left on the plates? <input type="checkbox"/> Does your business control the number and diversity of dishes to avoid over-procurement of ingredients?
	22. Recipe planning 	<input type="checkbox"/> Does your business use a software or app for recipe management that scales recipes according to guest forecast to reduce unnecessary waste of ingredients?
	23. Ingredient planning 	<input type="checkbox"/> Does your business add daily dishes to the menu (such as a "today's special") based on ingredients with close expiration dates?
	24. Over-trimming avoidance 	<input type="checkbox"/> Does your business train staff to not over-trim fruits and vegetables during preparation and to, when possible, leave the skins on (e.g., potatoes)? <input type="checkbox"/> Does your business regularly conduct yield tests?
	25. Overproduction avoidance 	<input type="checkbox"/> Does your business avoid overproduction by monitoring guest forecasts, in both a la carte and buffet services, to prepare the amount of food accordingly?
	26. Buffet management 	<input type="checkbox"/> Does your staff use temperature-controlled vessels to preserve food quality? <input type="checkbox"/> Does your staff monitor the amount of food displayed and only replenishes when demand dictates? <input type="checkbox"/> Does your staff use smaller food containers and chooses to replenish the buffet in less quantity but with more frequency? <input type="checkbox"/> Does your staff refrain from replenishing the buffet in the last quarter of service?
	27. Portion control 	<input type="checkbox"/> Does your business minimise the quantity of bread, starters and condiments portions given to customers/guests? <input type="checkbox"/> Does your staff ask guests if they want refills of starters, condiments, etc. instead of serving them automatically?

		<input type="checkbox"/> Does the menu include options of different portion sizes to fit various needs, e.g., S/M/L, or kid portions?
  	28. Service and presentation   	<input type="checkbox"/> Does your staff present food creatively, such as by using the inedible parts of fruit/vegetable prep as garnishes to decorate the plate and reduce the quantity of food served?
Guest Communication		
	29. Raising awareness   	<input type="checkbox"/> Does your business raise guests' awareness on the sustainability policy and food waste reduction efforts? <input type="checkbox"/> Does your business display signages on the buffet, menus and tables to encourage guests to minimise waste?
  	30. Responsible choices   	<input type="checkbox"/> When handling orders, does the staff ensure that guests are aware of portion sizes, food ingredients to which they might be allergic, preferred cooking methods and choice of sides, to avoid that dishes are sent back to the kitchen and to minimise plate scrapings? <input type="checkbox"/> In buffets, are all dishes labelled with their name, category (vegan, vegetarian, gluten free) and ingredients they contain to avoid too much experimentation? <input type="checkbox"/> In buffets and menus, is there indication of which dishes are the most environmentally friendly (with less carbon footprint, such as plant-based?)
  	31. Getting feedback   	<input type="checkbox"/> Does your business provide feedback forms to guests to gain understanding on which dishes and/or ingredients could be taken out of the menu?
Reusing		
  	32. Staff training   	<input type="checkbox"/> Does your business train staff on recovery strategies and encourage them to reuse food prep waste and leftovers whenever possible?

	33. Reuse of food prep waste and leftovers 	<input type="checkbox"/> Whenever possible, does your staff utilise food prep waste and leftovers to make other dishes (such as using bones and vegetable trimmings to make stock, or using leftover rice to make rice pudding, for example)? <input type="checkbox"/> Whenever possible, does your staff utilise food prep waste for preparing other products for the facility (such as orange/lemon/lime peels for making detergents, for example)?
--	--	--

DISPOSING

Redistribution of food surpluses

	34. Donation 	<input type="checkbox"/> Does your business redistribute food surpluses to staff and organisations in accordance with health and safety regulations? <input type="checkbox"/> Does your business engage local organisations and institutions that may have a need for quality surplus food (such as shelters)? <input type="checkbox"/> Does your business have a reliable partner for food donation that helps redistribute quality surplus food?
---	--	--

	35. Other redistribution schemes 	<input type="checkbox"/> Does your business participate in food redistribution schemes, such as food sharing apps (e.g., Too Good to Go)?
---	--	---

Disposal of inedible food waste

	37. Animal feed 	<input type="checkbox"/> Does your business collaborate with partners for donating inedible food to farms, zoos, animal feed suppliers, etc.?
---	---	---

	38. Composting 	<input type="checkbox"/> Does your business have a compost on site and use compost as fertiliser on its grounds, gardens, etc.? <input type="checkbox"/> Does your business take compost to a local farm? <input type="checkbox"/> Does your business arrange daily/weekly pickups with the municipality for organic waste?
---	--	---

	39. Anaerobic digestion 	<input type="checkbox"/> Does your business, if financially viable, invest in an anaerobic food digester, which transforms food waste into environmentally safe water that can be released into the municipal sewage system (ORCA) or even energy?
	40. Partnerships for repurposing 	<input type="checkbox"/> Does your business establish partnerships or belong to a cluster of tourism stakeholders that collaborate with third party companies and industries that repurpose food by-products?
Disposal of unavoidable food waste		
	41. Proper disposal of unavoidable food waste 	<input type="checkbox"/> Does your business abide by all local food disposal standards and regulations?



FOOD WASTE SOLUTION TREE

Do you have a sustainability policy and organisation-wide commitment & engagement towards waste reduction?

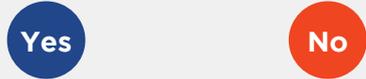
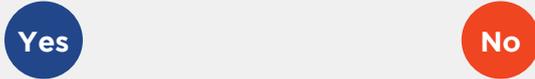


Does your business provide or serve food to customers (including during a tour)?



Is your business responsible for the food preparation?

Do you work with suppliers?



Do you have a professional kitchen?

Is your business in the position to require suppliers to commit to food waste reduction?

Your key areas of focus, in this case, are:

- Making sure your suppliers are also committed to reducing food waste
- Avoiding over-procurement by forecasting the number of customers and their food consumption
- Sourcing locally and seasonally as much as possible
- Storing food responsibly
- Communicating food waste reduction efforts to customers
- Disposing all food leftovers or waste responsibly (preferably with strategies of the subcriteria 34, 36 and 37 on Pages 38-40).

Looks like you are already fully committed to reducing food waste. Review subcriteria 1-5 on Pages 20-21 to see how you can get even more involved!

Yes
Most criteria apply to you. Please carefully review all phases of the Food Waste Standards.

No
Some strategies may not apply to you (such as biodigesters). Review all strategies but consider subcriteria 10, 11, 12, 20, 22, 34, 35, 38 and 39 as optional.

Yes
Great! Not only can you help raise awareness about food waste reduction, but also prioritise working with committed suppliers (Subcriterion 6 - Page 22).

No
You can still start a conversation about it and raise awareness. Focus on subcriterion 5 on Page 21.



Plastic Waste Reduction Standard

SOURCING

Organisational Commitment

 	1. Organisational buy-in	<input type="checkbox"/> Can managers and staff with roles related to plastic waste management explain the environmental and economic benefits of plastic waste reduction? <input type="checkbox"/> Is your business (including senior management) engaged and committed to applying plastic waste prevention strategies? <input type="checkbox"/> Is your business part of any global movement (e.g., Global Tourism Plastics Initiative)?
 	2. Policy development and communication	<input type="checkbox"/> Does your business possess a sustainability policy that includes its commitment to plastic waste avoidance and reduction in the mission statement, as well as throughout the organisational strategies? <input type="checkbox"/> Is this policy communicated in the business's online platforms and throughout the facility?
    	3. Sustainable product development	<input type="checkbox"/> Does your business, if applicable, design products and experiences for tourists (e.g., tours, excursions, activities) that are plastic waste-free from the start?
 	4. Supplier engagement and awareness raising	<input type="checkbox"/> Does your business choose to work, whenever possible, with suppliers that are also committed to reducing plastic waste in their operations and/or that are engaged in emissions reduction efforts/carbon offsetting schemes? <input type="checkbox"/> Does your business raise suppliers' awareness on ways to reduce or eliminate unnecessary plastic packaging (especially double packaging)? <input type="checkbox"/> Does your business suggest best practices and plastic alternatives to suppliers? <input type="checkbox"/> Does your business create incentives for suppliers to reduce plastics (such as promoting and marketing them, establishing partnerships and/or long-term contracts, etc.)?

		<input type="checkbox"/> Does your business negotiate with suppliers ways of sending back product packages for refill (such as bottles of cleaning products, liquid soap, shampoo, etc.)? <input type="checkbox"/> Does your business negotiate with suppliers a deposit system/return system for delivery packaging (e.g., reusable crates, bottles, cool boxes)?
 5. Staff involvement and training   		<input type="checkbox"/> Does your business raise awareness of all the staff (including tour guides, tour leaders, drivers, salespeople etc. who have direct communication with customers) on the importance of plastic waste management? <input type="checkbox"/> Does your business provide staff training on best practices to prevent plastic waste, including presentations, Q&As, off-site visits to recycling sites and/or volunteering activities such as beach/river clean-ups?
 6. Stakeholder engagement   		<input type="checkbox"/> Does your business engage with other businesses and stakeholders (e.g., by forming working groups) to discuss and share plastic reduction initiatives?
 7. Guest/customer communication   		<input type="checkbox"/> Does your business communicate its sustainability efforts towards plastic waste reduction to customers and guests through the website, social media as well as in the facility (through signages) to raise their awareness? <input type="checkbox"/> Is the frontline staff able to communicate the business's plastic reduction strategies to customers/guests and help them make more sustainable choices?
Avoiding All waste		
 8. Avoiding plastic water bottles   		<input type="checkbox"/> Does your business reduce (or, ideally, eliminate) plastic water bottles by installing refill stations or water fountains throughout the facility? <input type="checkbox"/> Does your business provide reusable mugs and/or glasses for water drinking in these refill stations and water fountains? <input type="checkbox"/> Does your business provide (or sell) reusable water bottles to staff and guests? <input type="checkbox"/> Does your business encourage guests to use reusable water bottles and refill stations by raising awareness on the issue of plastic pollution and by ensuring them the water is safe for drinking? <input type="checkbox"/> Does your business offer and recommend water from a refill station (or tap water when safe for drinking) to guests when they order plastic water bottles?

		<input type="checkbox"/> Does your business ensure the sanitation and hygiene of the refill stations? <input type="checkbox"/> Does the staff (especially tour guides) set the example to customers by having and using their own refillable water bottle? <input type="checkbox"/> In case of a hotel, does your business place reusable glass bottles filled with drinking water in each room (and encourage guests to ask staff to refill it whenever needed)?
	9. Avoiding single-use toiletries and sachets 	<input type="checkbox"/> Does your business use dispensers for liquid soap, shampoo, etc. instead of single use toiletries? <input type="checkbox"/> Does your business use dispensers for sauce (such as ketchup, mayonnaise) instead of plastic sachets? <input type="checkbox"/> Does your business provide sugar, salt and pepper in dispensers, shakers or paper sachets instead of plastic ones? <input type="checkbox"/> Does your business provide jams, honey and butter in dispensers, bowls, or jars instead of plastic pre-portioned packages? <input type="checkbox"/> Does your business provide loose tea bags (or even loose tea leaves) in jars instead of single tea bag wrappings?
	10. Avoiding plastic film wrap 	<input type="checkbox"/> Does your business avoid and regularly monitor the usage of plastic film wrap and tin foil to cover food leftovers or ingredients and set reduction goals?
	11. Avoiding leaflets 	<input type="checkbox"/> Does your business choose digital communication and apps instead of having leaflets or laminated brochures?
	12. Reducing Covid-19 single-use PPE 	<input type="checkbox"/> Does your business provide hand sanitiser dispensers throughout the facility? <input type="checkbox"/> Does your business encourage the use of hand sanitisers instead of single use plastic gloves (in a buffet for example) if these are not mandatory by local regulations? <input type="checkbox"/> Does your business encourage guests and staff to use reusable masks (e.g., selling reusable “branded” masks)?
	13. Avoiding plastic packaging	<input type="checkbox"/> Does your business prioritise purchasing products in bulk to reduce plastic packaging and waste? <input type="checkbox"/> Does your business source locally to reduce travel distance and plastic packaging and waste?

		<input type="checkbox"/> Does your business prioritise purchasing products (such as fruits and vegetables) that come without unnecessary plastic wrapping?
	14. Avoiding bin bags 	<input type="checkbox"/> Does your business avoid rubbish bin bags throughout the facility for dry materials (non-organic)?
Sourcing Reusable Products		
	15. Sourcing reusable products 	<input type="checkbox"/> Does your business source long-lasting reusable dishware, plates, bowls and containers instead of plastic ones? <input type="checkbox"/> Do you purchase reusable cloths made from natural fibres? <input type="checkbox"/> Does your business purchase reusable laundry bags made of cotton or linen? <input type="checkbox"/> Does your business prioritise sourcing other types of reusable products over single-use ones whenever applicable and available?
Sourcing Appropriate Single-Use Products		
	16. Understanding local context 	<input type="checkbox"/> Does your business understand which materials are accepted by the local waste collection service for composting, recovery and recycling?
	17. Local sourcing 	<input type="checkbox"/> Does your business source products made with local materials to avoid purchasing plastic ones (such as banana leaves for food wrapping)? <input type="checkbox"/> Does your business source products that can be recovered and recycled locally (i.e., that the municipality has the infrastructure to collect and process)?
	18. Sourcing sustainable and appropriate single-use products 	<input type="checkbox"/> Does your business prioritise sourcing single-use products that are either recyclable, biodegradable or that have a high percentage of recycled plastic content? <input type="checkbox"/> Does your business source sustainable and appropriate bin bags for organic waste (such as made of potato starch, which can break down in landfills)? <input type="checkbox"/> Does your business source sustainable and appropriate takeaway packaging?

Does your business source sustainable and appropriate straws and stirrers (such as made of paper, bamboo or similar)?

USING

Measuring and Monitoring

	<p>19. All waste separation</p> <p>  </p>	<p><input type="checkbox"/> Does your business have separate bins for organic and inorganic (plastics, glass, paper, etc.) waste throughout the facility that are properly labelled and differentiated (e.g., through colours)?</p> <p><input type="checkbox"/> Does your business encourage staff and guests to separate waste accordingly?</p>
	<p>20. Plastic waste separation</p> <p>  </p>	<p><input type="checkbox"/> Does your business separate plastic waste into recyclable and non-recyclable?</p>
	<p>21. Operations assessment</p> <p>  </p>	<p><input type="checkbox"/> Does your business map out and measure the amount of plastic waste generated in each type of operation (in the office, on tours, in events, in food handling, etc.?) to understand where waste comes from and what prevention strategies are needed?</p> <p><input type="checkbox"/> Does your business measure the quantity of plastics purchased and the cost of these plastics (by department and/or operation)?</p>
	<p>22. Supply chain assessment</p> <p>  </p>	<p><input type="checkbox"/> If possible, does your business map the supply chain (transportation, accommodation, food & beverage, activities providers, etc.) to understand where the plastics come from, and which suppliers tend to produce and use the largest number of plastic items?</p> <p><input type="checkbox"/> Does your business gather data (if available) from suppliers on their current performance on plastic waste reduction?</p>
	<p>23. Baseline assessment</p> <p>  </p>	<p><input type="checkbox"/> After assessing the use of plastics in the operations and supply chain, does your business compile (e.g., in a tracking spreadsheet) the corresponding quantities and costs of each type of plastic waste on a monthly or annual basis?</p>

   	24. Setting goals and monitoring	<input type="checkbox"/> After having obtained the baseline, does your business set plastic waste reduction goals? <input type="checkbox"/> Does your business monitor the results weekly or fortnightly through plastic waste audits? <input type="checkbox"/> Does your business revise and adapt strategies and staff training depending on the success and failures of current efforts towards plastic waste reduction?
Reusing Plastic Products		
      	25. Reusing plastic products	<input type="checkbox"/> Does your staff reuse plastic products whenever possible (such as reusing plastic containers for storing other items)? <input type="checkbox"/> Does your business give back plastic containers to suppliers for refill?
DISPOSING		
Disposal of Plastic Waste		
     	26. Partnerships for recycling	<input type="checkbox"/> Does your business establish partnerships or belongs to a cluster of tourism stakeholders that collaborate with third party companies and industries that recycle plastic materials?
     	27. Partnerships for energy recovery	<input type="checkbox"/> Does your business collaborate with energy recovery organisations that use plastic waste as a raw material and/or source of energy in industrial processes?
   	28. Adequate disposal in landfill	<input type="checkbox"/> Does your business dispose of non-recyclable plastic materials in landfills that abide by all local disposal standards and regulations?

PLASTIC WASTE SOLUTION TREE

Do you have a sustainability policy and organisation-wide commitment & engagement towards plastic waste reduction?

Yes No

Does your business provide or serve food to customers (including during a tour)?

This is the first necessary step to start reducing plastic waste. Take a look at Pages 49-52 to continue.

Yes No

Does your business use dispensers (for sauces, salt, honey, etc.) instead of sachets?

Do you provide both customers and staff with water refill stations or incentivise drinking tap water?

Yes

No

Yes

No

Also make sure that in toilet facilities, soap dispensers are provided instead of individually-wrapped soap bars.

See Pages 55-56 for further guidance.

Are you aware of the types of products and materials that can be recycled or composted in your municipality?

See Pages 53-54 for strategies to reduce single-use plastic water bottles.

Do you provide your customers with reusable plates, cutlery and cups?

Yes

No

Yes

No

Let's continue with a few more questions.

If reusable glass/ceramic dishware is not viable for your business (due to type or location of activities), see Page 61 for ways to identify the most appropriate and sustainable single-use materials for your business.

Do you prioritise partnerships with suppliers who are also committed to reducing plastic waste?

Understanding local contexts allows you to make more informed sourcing decisions. Contact the waste management company in your location to get this information.

Yes

No

This is very important, but also review: Avoiding All Waste (Page 53), Sourcing Reusable Products (Page 59) and Sourcing Appropriate Single-Use Products (Page 61).

Do you regularly measure plastic waste, set reduction targets and monitor results?

Reducing plastic packaging and packing saves costs in the long-run for your business and suppliers. Raise awareness and discuss how to minimise waste during sourcing and transportation. See Pages 50-1 and 68 for more guidance.

Yes

No

Do you know how to dispose of plastic materials responsibly?

Review Pages 65-67 for guidance on how to measure and monitor plastic waste.

Yes

No

Seems like your business is highly committed to plastic waste reduction!

Please take another look at Page 70.



HEAD OFFICE

Level 26 Unit A, Gaysorn Tower
127 Ratchadamri Road, Lumpini,
Pathumwan Bangkok 10330

Tel: +66 (0)2-017-5757
Email: membership@PATA.org

PATA CHINA

Beijing, China
Tel: +86 (0)10 6500-1397
Fax: +86 (0)10 6500-1497
Email: china@PATAchina.org

PATA EUROPE, WEST ASIA, AFRICA

London, UK
Tel: +44 (0)7932 074-978
Email: europe@PATA.org



 PATA.HQ

 PATA_HQ

 PATA_HQ

PATA PREMIER PARTNER



PATA PREMIER MEDIA PARTNER



PATA STRATEGIC PARTNERS



PATA PREFERRED PARTNERS



MEDIA PARTNER



PATA ALLIANCE PARTNER



PATA GOLD AWARDS SPONSOR



澳門特別行政區政府旅遊局
DIRECÇÃO DOS SERVIÇOS DE TURISMO
MACAO GOVERNMENT TOURISM OFFICE