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Stop the flood of plastic

Effective measures to avoid single-use plastics and packaging in hotels

wwf.de/stop-plastics-in-hotels

Our warmest thanks to:

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Stop the flood of plastic

Effective measures to avoid single-use plastics and packaging in hotels

CONTENT

Foreword

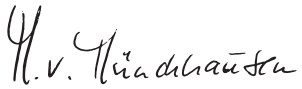
Dear hotel operators, dear readers,

Clean beaches and water: this is what the 200 million tourists who spend their holidays in one of the Mediterranean countries every year expect. But often enough, the reality is that holidaymakers who are seeking rest and relaxation during the most beautiful days of their year are instead confronted with plastic waste: on beaches and in the water, while swimming, sunbathing and taking a stroll.

Every year, more than half a million tonnes of plastic waste end up in the Mediterranean Sea from the surrounding countries, which are popular holiday destinations. The reasons are well known: high use of single-use products and plastic packaging, inadequate waste management systems, unregulated landfills and insufficient recycling rates. Tourism increases waste by up to one-third during the summer months, often overwhelming the capacities of our favourite destination countries.

Let's end this catastrophe together: help us stop the flood of plastic!

Let's make a commitment to reduce plastic waste. Because if plastic waste isn't produced in the first place, it can't end up in the sea.



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Dear hotel operators, dear readers,

This WWF study and the Wikinger campaign “Flas(c)hback” pursue the same aim of stopping the flood of plastic. To achieve this goal, employees, guests and partners – especially hotels as service providers – need to be motivated to stop using disposable receptacles. The intention of this study is thus to outline strategies for how the hotel industry can succeed in avoiding plastic waste wherever it is used.

As a tour operator of hiking and active trips, the issue of plastic avoidance is naturally close to our hearts. Of course, outdoor enthusiasts want the natural environment to be free of plastic. The focus of our approx. 1,200 trips worldwide is to give our guests the opportunity to experience pristine natural beauty. As a sustainably-oriented family business, we have always been aware of our responsibility: as early as the beginning of the 1990s, one of our flyers for guests even said: “Environmental protection starts when you begin to pack your suitcase or backpack. Reusable items are better than throw-away items”. For decades we have been continuously working to integrate environmental, economic and social aspects.

The fight against plastic waste needs many comrades-in-arms. The issue affects every single one of us and calls on all of us to take action. Hotel guests don’t want an environment filled with litter, nature enthusiasts on holiday don’t want mountains of plastic and nobody wants polluted oceans. So let‘s stop the flood of plastic! Together.

Christian Schröder,
Tour Guide Department, Quality and Sustainability Management, Wikinger Reisen GmbH

The time to act is now

Summary

Worldwide flood of plastic

310 million tonnes of plastic waste are produced worldwide every year.[1] This waste is put into landfills, incinerated and, in the best-case scenario, recycled. But often enough it also ends up in the environment. where it pollutes beaches, rivers and oceans and harms people and animals. In the water and on the beaches of the Mediterranean, for example, the plastic deluge increases by 30 per cent during the summer months due to tourism and seriously endangers flora and fauna.[2]

Responsibility of the tourism sector

The tourism industry is also a victim of the flood of plastic waste, for example, when beaches and seas have to be cleaned or tourists stay away due to pollution. At the same time, tourism businesses also bear a special responsibility as producers of waste, especially plastic waste.

In addition to better waste management in the respective regions, measures are urgently needed in the hotel industry to reduce waste volumes. This includes, for example, getting rid of single-use plastic packaging and products. Less plastic used means less plastic thrown away! As a result, the industry can contribute to alleviating the problem of inadequate disposal structures. Sensible avoidance measures in the hotel industry make a direct and concrete contribution to combating marine pollution.

Five-star holiday means a waste-free landscape, clean beaches and healthy oceans

Many guests are now aware that the value of a trip cannot be gauged by how many plastic-wrapped amenities the hotel offers, but by a waste-free landscape, clean beaches and healthy oceans.

Reusable not disposable

In short, reduction, reuse and recycling is the formula that hotels should follow in their waste prevention policies. This means: eliminating the use of single-use plastic products and packaging throughout the hotel, switching to reusable alternatives and separating waste to maximise recycling. It is essential to involve the employees and to mobilise the guests. Working hand in hand with like-minded hotels and stakeholders in the region, the municipal waste infrastructure can be positively impacted and the suppliers' range of services improved. This study provides an overview of the most effective measures with maximum environmental impact.

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Inadequate public waste management

This study included interviews with hotels in Greece, Italy, France and Spain. They show that the hotel sector is determined to take action. However, there are obstacles to implementation: high costs, inadequate products and services and a lack of suppliers, rigid guest expectations, insufficient knowledge about environmentally friendly alternatives and shortcomings in waste management in the holiday region cause frustration and slow down the processes. But action is necessary, and it needs to happen quickly.

Policymakers: Some are resolute, some hesitant

Images of marine animals killed by plastic waste and the potential risk of microplastics entering the human food chain have reached European policymakers. They responded quickly and adopted the Single-Use Plastics Directive in 2019.[3] However, the Member States are not all acting at the same pace. Moreover, the inadequate waste structures in the tourist strongholds are improving only slowly.

This report takes a look at the plastic footprints of Italy and France as examples, highlights the shortcomings in waste management in Spain and Greece and shows how plastic waste ends up in the environment and finally in the sea through landfills near the water, tourist activities and an overwhelmed infrastructure. Plastics are not recycled there, but end up in landfills or are at best incinerated. We are a long way from standardised packaging that would make a deposit system possible. And financial incentives for waste avoidance are still lacking. The examples of the two holiday islands Mallorca and Zakynthos with similarly dramatic starting points show how differently the waste problem can be handled. While Zakynthos is still struggling with outdated structures, Mallorca has declared war on plastic waste with a new law.

Wrong strategy: Substitution instead of reduction

Many hotels have reached a dead end by replacing single-use plastics with disposable products made of other materials. Although this approach complies with legal requirements such as the EU's Single-Use Plastics Directive, it is associated with the (false) belief that other materials such as paper or wood are inherently more environmentally friendly than plastic.

But products made from naturally renewable raw materials also need fertiliser, water and land that are then not available to grow food. Even though plastics that are supposed to be biodegradable are not quite as durable as their harmful plastic competitors, they are still difficult to recycle, do not belong with the compost and are ultimately also only incinerated. Using them is a short-term measure, which at first glance appears to improve the situation, but in the long run does not solve the waste problems and pollution. There is often insufficient knowledge about the actual impacts of these materials on nature and the environment.

Recommendations for hotels, tour operators and tourists

It is not just the hotels that need to undertake measures to stop the flood of plastic. Tour operators and tourists can also make an important contribution.

Tour operators should require minimum waste avoidance standards from their hotel partners and capitalise on their role as advisers and catalysts. They can give the hotels they work with expert advice on environmentally friendly avoidance hierarchies. At international level, they can also exert influence on policymakers and expedite processes.

Tourists should also contribute to waste avoidance. This is sometimes inconvenient, but a holiday destination without plastic waste should be worth it to them. Travellers should find out about the waste situation in their holiday resort and the waste avoidance strategy of their accommodation. They should avoid single-use plastic and packaging during their stay. Disposable bottles for drinking water play a special role here. They are the most commonly found plastic waste on beaches. Vacationers should therefore ask about the quality of the tap water on site and – if it is suitable as drinking water – for example, fill it in reusable bottles or carafes.

Plastic avoidance: Criteria for certification schemes

The interviews conducted as part of this study showed that hotels certified as sustainable are generally more advanced in terms of waste and plastic avoidance than hotels that are not certified.

Nevertheless, many certification schemes still do not address the issue of plastic avoidance or are not specific enough. The report thus proposes measures to avoid plastic waste, which should be included as minimum requirements in every set of criteria.

Reduce – reuse - recycle

This short formula can be used to develop a workable, comprehensive and effective strategy for avoiding plastic waste. It should be used by policymakers as a basis for legislation as well as in the daily activities of tourism businesses, suppliers, local waste disposal companies, certification schemes and tourists. To protect human beings and the natural environment, it aims to: stop the flood of plastic.

Waste in the oceans and on beaches

Toxic for the environment and tourism

1.1 Plastic waste in the world's oceans

Since 1950, plastic production has increased to an extent hardly imaginable: by a factor of two hundred. And it continues to grow by four per cent every year. Already today, the entire human race would have to stand on the scale together in order to outweigh the current annual production of 396 million tonnes.[4] There is no end in sight to the growth of plastics. More production sites are planned. If they were all in operation, current annual production would increase another 40 per cent by 2030.[5]

Most of this enormous volume of plastic is made up of packaging and disposable products and is thrown away after a short use.[6] Every year, an estimated 310 million tonnes of plastic waste are produced worldwide. This corresponds to 2,200 plastic bottles for every single person in the world.[7]

Plastic waste in the environment

8 million tonnes every year

But what happens to the plastic waste? Only 63 per cent of waste is collected for waste disposal through regulated channels and deposited mainly in landfills, while only about 15 per cent is recycled.[8] The rest makes its way into the environment and some ends up in the oceans.[9] There are currently about 86 to 150 million tonnes of plastic in the seas and oceans.[10] Another eight million tonnes are added every year.[11] The vast majority – around 80 per cent – comes from land[12], globally speaking.

Most plastics are not biodegradable. Depending on the environmental conditions on land or in the sea, it can therefore take several hundreds of years for them to decompose.[13] Since more plastic waste continues to end up in the environment, more and more plastics are also accumulating there. Gradually the plastic waste disintegrates into smaller particles, known as microplastics, which are spread almost everywhere and also get into people's food.[14]

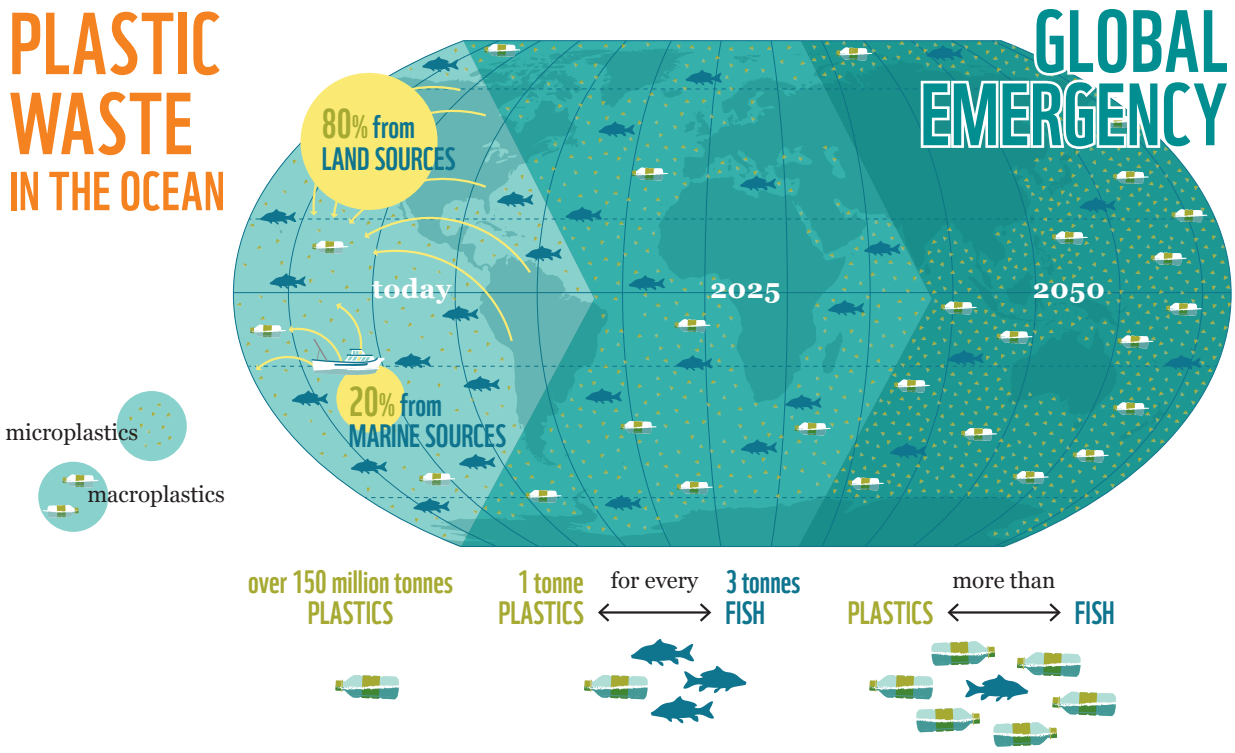

Figure 1:
Plastic waste in the ocean

Plastic in the environment causes a lot of damage to the environment and the economy. When plastic waste is not handled properly, for example, incinerated out in the open, this also poses health risks.[15] The United Nations Environment Programme estimated that plastic pollution in the oceans results in costs of over EUR 7 billion.[16] If development continues along this path, the production and incineration of plastic waste will account for 10 to 13 per cent of global carbon dioxide emissions.[17]

Plastic waste does not just affect the different ecosystems, but also the lives of about 800 species of fauna living in the oceans.[18] For example, a correlation has been found between the ingestion of plastic by marine turtles and their mortality.[19] By 2050, almost all seabirds will have plastic in their stomachs if the volume of litter in oceans continues unabated.[20]

The main reasons so much plastic waste ends up in the environment are ...

» Too many single-use items and plastic packaging
» Non-functioning waste management system
» A recycling rate that is far too low
» Illegal waste disposal in many countries

Some of the plastic waste from industrialised countries is exported to other, poorer countries whose waste disposal and recycling structures are even worse. This not only means that valuable recyclable plastics are lost, further processing of the waste in the country of import is also harmful to the health of those affected. Finally, some of the sorted residual waste makes its way to the environment, often through the rivers into the ocean.[21]

Plastic waste in the Mediterranean Sea

The Mediterranean countries alone produce 24 million tonnes of plastic waste a year. However, only 72 per cent of this waste is disposed of properly. The rest is not collected or it is disposed of illegally.[22] This unregulated disposal of plastic waste is the main source of the plastic that we later find in the environment. In the Mediterranean, the annual figure is around 570,000 tonnes – equivalent to 33,800 plastic bottles thrown into the sea – every minute.[23]

None of the 200 million people who spend their holidays on the coasts of the Mediterranean countries wants to lie on dirty beaches or swim between plastic bags. At the same time, tourism plays an important role in the production of plastic waste: every summer, the seasonal amount of waste in the region of the Mediterranean Sea increases by as much as 30 per cent.[24]

+ 30%
PLASTIC WASTE
EVERY SUMMER

Plastic waste and tourism companies

Tourism companies and hotels are themselves victims of the deluge of plastic waste. Beaches must be cleaned of washed up plastic waste on a daily basis. Tourists do not return to their favourite holiday resorts because of the littered beaches. The financial damage caused to the tourist industry by plastic pollution amounts to EUR 268 million a year.[25]

© Unsplash

Tourism companies can help to reduce plastic waste, especially in the hotel sector. Even though the responsibility for waste management lies with local communities and municipalities, hotels can still play a key role in reducing the amount of plastic waste generated. They have the means to reduce packaging volumes and completely eliminate many unnecessary single-use products. Their contribution becomes all the more necessary when local waste disposal systems and infrastructure fail. At the same time, hotels can educate guests about what environmentally responsible behaviour is and encourage them to reduce the amount of plastic waste thrown into the environment.

Less is more – especially with plastics

WWF supports activities around the world that reduce the amount of plastic waste that ends up in the environment. The first priority is to avoid single-use items and to reduce packaging. The hotel sector has a central role to play in these efforts. With the help of this study, WWF wants to show all hotel operators specific ways they can avoid plastic waste in their operations.

1.2 New EU legislation to ban single-use plastics

There's an enormous amount of plastic litter floating around in the seas. According to surveys carried out by the Brussels Commission, the EU produces 26 million tonnes annually.[26] Less than a third of the plastic disposed of in the EU is currently recycled.[27] The rest is incinerated or stored. Most of the improperly disposed of plastic waste ends up in the sea.

Brussels responded to this situation quickly and categorically. MEPs adopted the Single-Use Plastics Directive with 560 votes in favour, 35 against and 28 abstentions. The EU Member States have two years, until 2021, to transpose this Directive into their national laws.[28] The aim is to reverse the trend in plastic consumption and prevent the volume of plastic pollution in the world's oceans from increasing.

In March 2019, the EU introduced a ban on certain disposable plastic products as one of the measures to mark the start of the trend reversal. These are primarily products that are most commonly found on European beaches and in the water. Together with nets and lines from fishing gear, they make up a good two thirds of all waste in the sea.[29] With the new Directive, the EU has responded directly to the problem of marine pollution.

In order to reverse the trend in plastics consumption, the EU strategy envisages the following measures:

Bans
Starting in 2021 (two years after the Directive enters into force), single-use plastic products for which there are alternatives made of other materials will be banned. This includes cotton swabs, cutlery, plates, straws, beverage stirrers and sticks to hold balloons; also food and drink containers made of expanded polystyrene including their caps and lids like the ones used for take-away hot food or beverages.[30]

In addition, all products made of what is known as oxo-degradable plastic, which is used, for example, for thin bags and packaging, will also be banned.[31] Due to the additives this plastic contains, it decomposes when exposed to heat, moisture or UV light, but is not completely degraded. It leaves behind microplastics, which are very damaging to the environment.[32]

Source: European Commission

Figure 2:
Top 10 single-use plastic items on beaches

New binding targets for content of recycled plastic in bottles

Increasing the rate of recycling

In addition to the above-mentioned bans, new recycling targets will also apply in future. Disposable plastic bottles account for a significant share of the plastic waste problem and are the most commonly found waste on European beaches. According to the new legislation, 90 per cent of drinking water bottles must be collected separately by 2029. In addition, new binding targets of 25 per cent by 2025 and 30 per cent by 2030 apply to the content of recycled plastic in bottles.[33]

Extended Producer Responsibility (EPR)

The producers of single-use plastics must be held accountable for their contribution to the cost of cleaning, transport and disposal of food containers, plastic wrap, plastic bottles, cups, bags, wet wipes, tobacco products, balloons and fishing gear.[34]

Raising public awareness

Single-use products with a certain plastic content will have to be labelled in the future and producers will have to inform consumers about the effects of improper disposal. For example, prominent warnings will be required on plastic cups and wet wipes and the consumer will be informed of the environmental risks. Products also include food containers, plastic wrap, hygiene products, balloons, lightweight plastic bags and fishing gear. Cigarette packs also have to include a warning about the environmental impact of plastic filters, as cigarette filters are a major cause of the waste problem on Europe's beaches. Throughout the EU, but also on the Baltic Sea coast, they are the second most common litter found on beaches.[35]

Less consumption

The consumption of single-use products such as plastic food and drink containers and packaging, will be considerably reduced. The EU Member States must adopt appropriate measures. A binding target has not yet been defined.[36]

Separate collection/more recycling

The EU Directive prescribes binding targets to improve the rate of waste separation: by 2025 at least 77 per cent of all disposable plastic bottles are to be collected separately, by 2029 at least 90 per cent – for example, by introducing a deposit system.

In addition, new PET plastic bottles are to consist of at least 25 per cent recycled plastic by 2025. This binding target is set to be raised to 30 per cent by 2030.[37]

Product requirements
Starting in 2024, lids must be attached to beverage bottles in such a way that they can no longer be separated by the consumer. This requirement is designed to reduce plastic waste.[38]

Consequences for the European hotel industry

The hotel and restaurant industry at European level comprises around 1.9 million enterprises.[39] Like the entire tourism industry, they are particularly dependent on an intact environment. For this reason, many interest groups such as HOTREC[40], the European association of the hospitality industry, welcome the EU's strategies to reduce plastic waste.

Generally speaking: if the new EU legislation takes effect in 2021, hotels throughout Europe will no longer be allowed to hand out plastic drinking straws and stirrers. Disposable plastic plates, cups and cutlery will then be just as taboo in all hotels as disposable plastic products made of polystyrene (e.g. many cups for yoghurt or coffee machines) or oxo-degradable plastic. Hotel operators will be compelled to review and restructure their inventories.

For companies that mainly offer take-away food and external catering events, alternatives or multiple-use systems will be necessary.

However, these products account for only part of the volume of single-use plastic products and packaging in the hotel industry. It will therefore be necessary for responsible hotel operators to undertake additional measures that go well beyond the legal requirements and, for example, drastically reduce the plastic waste generated by packaging.

When it comes to the separation of plastic bottles, all hotels and restaurants should establish a suitable system in their operations. Hotel operators will also have to ensure that the required recycled plastic content in their plastic bottles is correct. But the problem will by no means be solved simply by separating waste or recycling a certain amount of plastic.

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After all, as long as recycling is not guaranteed across the board, it won't do much good to just separate bottles or require a certain content of recycled materials. A rigorous reduction policy is needed.

What WWF says about new EU legislation

Rarely has Brussels responded so quickly to a dramatic development and the related concerns of EU citizens, prompting strict legislation.

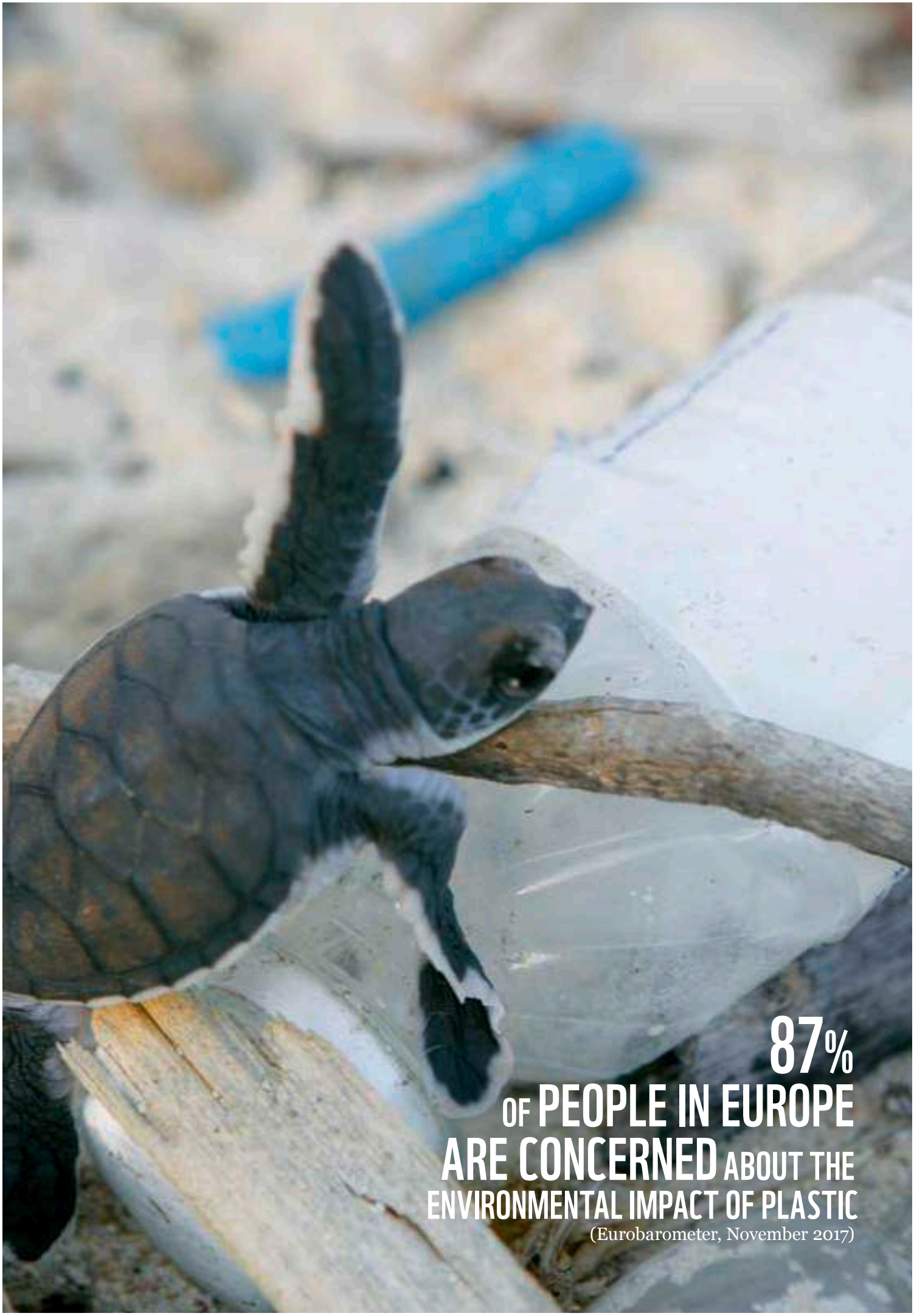
The measures undertaken by the EU Commission are the first important steps, but they are far from sufficient from WWF's point of view.

For example, the EU must work much harder to reach an international UN agreement that prevents plastic waste from ending up into the ocean. It must act more quickly and decisively to put an end to its contribution to the deluge of global plastics.

Producers of all packaging and packaged products in the EU should generally be held more accountable. To this end, regulations need to be established to facilitate and encourage the recyclability of packaging and the use of recyclates.

Many EU countries, including Germany, export large quantities of plastic waste, mainly commercial plastic waste, to Southeast Asia, exacerbating the huge waste problems there.[41] Since China has refused to accept German plastic waste since the beginning of 2018, the export of waste may not be allowed to simply relocate, it must be made more difficult, or even better, superfluous. The EU plastics strategy must provide greater incentives to increase the recyclability of packaging so that higher quality recycled materials reach the market. At the same time, the incentives to use more recycled plastics in products and packaging in Europe instead of exporting them overseas should be defined more specifically.

The EU strategy does not provide precise guidelines for the introduction of legal regulations on microplastics. However, the EU must prevent microplastics from entering rivers and seas through wastewater. The EU must introduce legal limits for wastewater discharges of primary microplastics from industrial companies. A ban on microplastics in cosmetics and industrial applications is also long overdue.



87%
OF PEOPLE IN EUROPE ARE CONCERNED ABOUT THE ENVIRONMENTAL IMPACT OF PLASTIC
(Eurobarometer, November 2017)

1. Monitor and document all single-use products and packaging consumed and the amount of waste they produce

Create a waste inventory in your hotel. List exactly which plastic packaging and single-use products are found in the individual areas of the hotel, how they are used and what waste is generated from them.

2. Waste is separated and collected by the categories available in the region

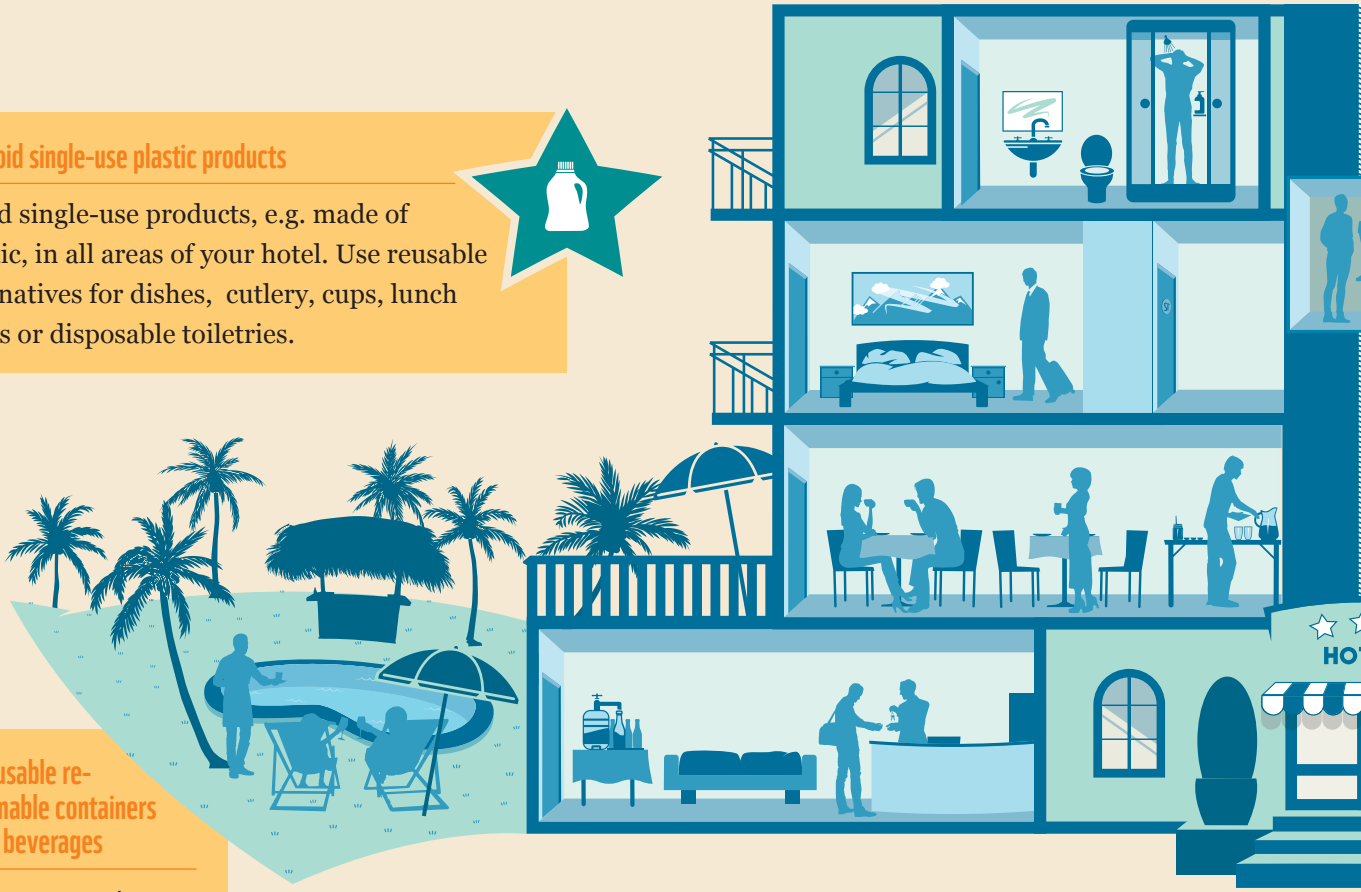
Find out which possibilities for waste separation exist for your hotel and separate waste accordingly.

3. Avoid single-use packaging

Avoid single-use packaging and pre-portioned products for one-time consumption in all areas of your hotel.

4. Avoid single-use plastic products

Avoid single-use products, e.g. made of plastic, in all areas of your hotel. Use reusable alternatives for dishes, cutlery, cups, lunch boxes or disposable toiletries.



5. Reusable returnable containers for beverages

In your current range of products, prioritise beverages in reusable containers, both when buying and serving drinks.

6. Make drinking water available and communicate effectively with guests

Inform your guests about the quality of the tap water and if possible, make it available to them instead of water in plastic bottles. If the tap water quality does not meet the quality standards or expectations of your guests, install a water treatment system. If this is not possible, provide water dispensers.

Effective measures to avoid single-use plastics and packaging in hotels

7. Avoid ingle-use packaging in purchasing and procurement processes

Require low-waste or reusable returnable transport packaging when buying products. Ask suppliers to take back single-use packaging. If they are not willing, use bulk containers for food.

8. Staff training

Inform your employees on a regular basis about which measures are implemented in your hotel to avoid and reduce plastic waste. Train them in the correct use of packaging and disposable products, avoidance and waste separation.

9. Information and integration of guests

Communicate to your guests which measures have been undertaken in the hotel to avoid waste and how they can contribute. Share information with your guests about environmental protection measures and waste management in the region. Involve guests in projects and initiatives.

10. Collective action and cooperation in the region

With alliances, partnerships and collaborations, pressure on municipal and supraregional decision-makers as well as on suppliers can be increased.

2.1 Top 10 measures

2.1.1 Evaluation methodology

In cooperation with the Institute of Waste Management at the University of Natural Resources and Applied Life Sciences in Vienna, the Austrian Consumers' Association (Verein für Konsumenteninformation – VKI) and the experts of the Austrian Ecolabel for Hotels, WWF has identified the most effective measures to reduce the amount of plastic waste in hotels. This will protect nature and the environment, and the hotel sector can make an effective contribution to preventing plastic waste from entering our oceans.

To ensure that as many hotels as possible, regardless of nationality, size or management, can implement the measures, their evaluation is based on the following three criteria:


Practicability of the measure


Financial impact of the measure


Environmental impact of the measure

The following expertise was also taken into account in the evaluation of the measures:

» Assessment by experts and consultants of the Austrian Ecolabel certification body (VKI, Austrian Consumers' Association, over 1,500 certifications of tourism companies in the last 20 years)

» Findings from national and international studies[i]

» Results of the interviews and background discussions conducted in this study with hotel operators and experts

[i] List of all studies taken into account for this purpose, see Annex

Evaluation scale

The evaluation was carried out using a three-level scale:

Evaluation criterion		Valuation indices
Practicability	Easy to implement without high additional personnel or organisational costs	1 – easy 2 – medium 3 – difficult
Financial impact	Minimisation of costs for the avoidance measure	1 – low financial costs 2 – medium 3 – high
Environmental impact	Reduction of negative environmental impact (plastic pollution in the environment)	1 – high 2 – medium 3 – low

Averages were calculated from the individual evaluations for each evaluation criterion. Low values indicate a better result. In other words, 1 is the best result, 3 the worst.

Explanations of the evaluation criteria

The **practicability** of a measure was assessed as easy (1), medium (2) and difficult (3), whereby "easy to implement" refers to a measure that can be carried out without significant organisational activities (e.g. communication with guests, elimination of certain products).

No reliable conclusions from studies were found for the criterion "practicability", which is why only the assessments and results of experts and interviews were taken into account here.

The **financial impact** was determined on the basis of price comparisons. Where possible, studies that look at the financial cost or savings were also referenced.

Measures that can be implemented without any financial impact or with a minor financial impact (e.g. agreements with suppliers, elimination of pre-portioned packs) were generally rated as "low". A "high financial impact" is deemed to exist if, for example, replacement products are more than twice as expensive or an extra budget item has to be created for the measure (e.g. investment in the purchase of a water treatment system).

The assessment of the **environmental impact** was essentially based on two criteria:

» The measure's potential to prevent waste
- Waste that is avoided that would otherwise be processed through regulated channels (landfill, etc.)
- Waste that is avoided that would otherwise end up unchecked in nature, the environment and the ocean

» The measure's impact on climate change

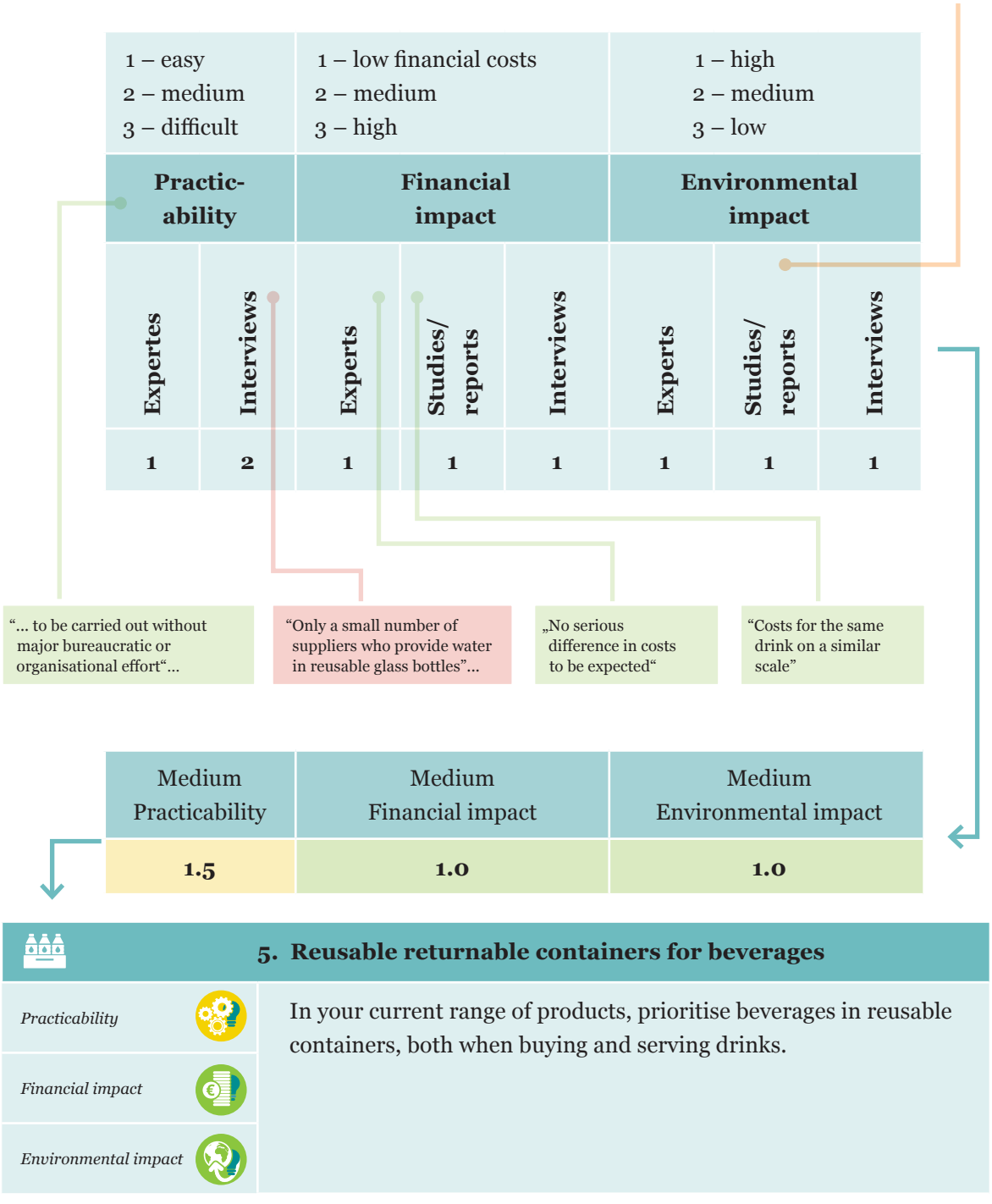
When selecting studies to assess the environmental impact on the climate, only those whose methodological approach corresponds to that of the life cycle assessment were taken into account (as per ISO 14040).

"High impacts" were assumed if a significant improvement can be expected over the status quo (> 40 per cent waste avoidance potential). Accordingly, impacts were assessed to be "low" when hardly any changes to the status quo were detectable (< 10 per cent waste avoidance potential).

In each case, the mean value was calculated at category level and then a total mean value calculated on this basis as the final result. The limits were set as follows for the assessment using a traffic light as a model:

< 1.5	Green
1.5 – 2.5	Yellow
> 2.5	Red

Environment impact Waste avoidance potential	Environmental impact climate	Source
Savings of 19 – 38% depending on whether glass or PET reusable container and whether cans or PET are replaced	Savings for all combinations > 50%	Fehringer, R. (2001): Ökologischer Vergleich von Mehrweggetränkeverpackungen mit Einweggetränkeverpackungen, study commissioned by the city of Vienna



5. Reusable returnable containers for beverages

Practicability	In your current range of products, prioritise beverages in reusable containers, both when buying and serving drinks.
Financial impact	
Environmental impact	

Figure 3:
Sample evaluation process Measure 5 "Reusable returnable containers for beverages"

2.1.2 The most important measures

The evaluation was used to identify the following ten measures with high savings potential and associated positive environmental impact (green). For the following measures, the traffic light colours also indicate how they were evaluated in terms of practicability and financial impact (green = good, yellow = medium, red = poor).

	good	medium	poor
Practicability			
Financial impact			
Environmental impact			

Measures that affect hotel management

1. Monitor and document all single-use products and packaging consumed and the amount of waste they produce

Practicability 

Financial impact 

Environmental impact 

Create a waste inventory in your hotel.

List exactly which plastic packaging and single-use products are found in the individual areas of the hotel, how they are used and what waste is generated from them.

It is only possible to take sensible measures to avoid waste and to monitor and evaluate its implementation in the longer term if it is known which hotel areas produce what quantities of single-use products and packaging.

A comprehensive waste inventory should be performed in all areas of a hotel and priority given to the hot spots identified. A systematic analysis shows whether the items used are necessary or whether they can generally be eliminated.

In order to implement a sustainable strategy for waste avoidance in the hotel, it is necessary to regularly review measures and assess whether goals have been reached.

2. Waste is separated and collected by the categories available in the region

Practicability 

Financial impact 

Environmental impact 

Find out which possibilities for waste separation exist for your hotel and separate waste accordingly.

Waste separation in hotels must be seen in the context of municipal waste disposal systems. In-depth knowledge of local options for disposal and recycling helps to decide on sensible measures and separate collection.[42] Even though waste does not dissolve into thin air when separate collection is improved, when individual categories are carefully separated, the quality of the individual waste components and the possibilities for recovery (recycling) can be increased. If high-quality recycled materials are available to replace new raw materials, negative environmental impacts are reduced. This also curbs unregulated landfilling, which always carries the risk that plastics are blown away by the wind or washed away by heavy rainfall or flooding and thus end up in oceans and rivers.

The hotel ensures that, at a minimum, categories are separated in-house which can be further processed by the regional waste management operations. At the same time, it should be checked whether, in addition to the regionally available waste management system, there are other possibilities for receiving separately collected recyclables.[ii] The generated quantities should be recorded and the impact of the measures documented. The results of the internal waste management system can be used to raise public awareness.

[ii] Waste separation by other categories such as glass, metal, aluminium (cans), cooking oil, garden waste, etc.

Consistent waste separation reduces disposal costs. Often, recyclable waste is collected free of charge and fees are only levied for the residual waste. Even in regions with poor infrastructure, private waste disposal companies can be found that collect recyclable waste. It is advisable to form partnerships with other companies in order to reduce costs and increase the attractiveness of the location for private waste management companies.

Measures in all hotel areas: Reduce – reuse – recycle

	3. Avoid single-use packaging
Practicability	Avoid single-use packaging and pre-portioned products for one-time consumption in all areas of your hotel.
Financial impact	
Environmental impact	

REDUCE
REUSE
RECYCLE

If pre-portioned packs, e.g. made of plastic, are avoided, the amount of packaging waste in hotels is significantly reduced. This has a positive effect on the environment.[43] Switching from plastic packaging to packaging alternatives is usually not sensible and has an adverse environmental impact (see section 2.5 So-called alternatives).

Single-portion packs for food

How food is presented to guests is an opportunity to showcase the hotel's waste avoidance measures. Products such as butter, honey, jam, spreads, sugar, ketchup, mustard and yoghurt can either be pre-portioned by the hotel and offered in small bowls in glass cases or guests can serve themselves from bulk containers. Portion dispensers can also be purchased for virtually all products. Dispensing systems can also be considered for beverages (juices, tea, milk or coffee).

It only makes sense to use pre-portioned packs for special diet products (e.g. lactose- and gluten-free products or dairy substitutes), as they are not consumed in large quantities. In this case, the use of pre-portioned packs reduces food waste.

Single-use packaging for toiletries
In bathrooms, dispensers or larger containers can be used to replace pre-portioned products for, e.g. shower gel, shampoo or body lotion can significantly reduce waste. The dispensing systems can be refilled directly by the housekeeping staff.

4. Avoid single-use plastic products

Practicability	Avoid single-use products, e.g. made of plastic, in all areas of your hotel.
Financial impact	Use reusable alternatives for dishes, cutlery, cups, lunch boxes or disposable toiletries.
Environmental impact	

The use of reusable products such as washable plates not only significantly reduces the volume of waste, but also generally results in a better environmental footprint.[44]

By eliminating disposable toiletries such as combs, shavers, toothbrushes, nail files, etc., 100 per cent savings can be expected in both waste generation and CO_2 equivalents.

5. Reusable returnable containers for beverages

Practicability	In your current range of products, prioritise beverages in reusable containers, both when buying and serving drinks.
Financial impact	
Environmental impact	

Large quantities of plastic waste can be avoided when reusable beverage containers are purchased. If single-use containers are replaced by multiple-use containers, the volume of waste can be reduced by 19 to 83 per cent, depending on whether glass or PET multiple-use containers are used and whether beverage cans or PET bottles are replaced. For all alternatives, savings of more than 50 per cent CO_2 equivalents can be assumed.[45]

Reusable cups are the only sensible alternative, especially for drinks. Hotels should ask their suppliers what the different options are. If they do not offer reusable returnable containers, large containers are preferable to individually packaged products.

Replacing single-use PET bottles with beverage cartons or cans does not make sense from an environmental point of view. Only by using multiple-use alternatives made of glass or plastic can companies prevent large volumes of waste.

6. Make drinking water available and communicate effectively with guests

Practicability

Financial impact

Environmental impact

Inform your guests about the quality of the tap water and if possible, make it available to them instead of water in plastic bottles. If the tap water quality does not meet the quality standards or expectations of your guests, install a water treatment system. If this is not possible, provide water dispensers.

PET water bottles and bottle caps and lids are among the most commonly found items on European beaches and waters. Due to the fluctuating quality of tap water in the individual regions or municipalities, a very high number of water bottles are distributed to guests. Detailed information on water quality can motivate guests to dispense with water in plastic bottles. The potential for cutting down on waste is very high. The environmental impact of this measure is therefore also high. When hotels eliminate bottled water and provide drinking water in carafes or jugs, they reduce waste by 100 per cent. According to the literature, CO_2 equivalents could be potentially reduced by 90 to 100 per cent. If tap water is converted to soda water by adding carbonic acid, the savings still amount to 50 per cent.[46]

The costliest financial burden for companies involves the installation of a water treatment system. As conditions vary from place to place, it is not possible to provide information on amortisation. The purchase of bottles that can be loaned out to guests results in a medium financial impact. The lowest financial impact can be expected when refillable bottles are sold to guests.

If the quality of drinking water in the hotel is high enough, guests should be served fresh tap water free of charge during meals. This allows significant reductions in the use of disposable PET bottles.

Hotel guests would also like to have drinking water available in their rooms or in the outdoor and spa areas. They also like to take bottled water on hikes and walks. If the quality of the tap water in the hotel is good enough, the most effective measure for avoiding waste is to make it possible to fill glasses or carafes with water in the rooms and in the hotel – be it from the tap in the room or from water dispensers in public areas. Refillable bottles can also be provided, either as a give-away for guests or for a deposit at the reception desk.

Information about the water quality and the drinking water options in the hotel should be clearly visible and easy for guests to understand.

7. Avoid single-use packaging in purchasing and procurement processes

Practicability	Require low-waste or reusable returnable transport packaging when buying products.
Financial impact	Ask suppliers to take back single-use packaging. If they are not willing, use bulk containers for food.
Environmental impact	

The potential for waste avoidance is similar to switching from single-use to multiple-use beverage packaging. The environmental impact of this measure is similarly high.

Single-use packaging can be avoided in the entire procurement process. The alternatives are multiple-use containers and packaging-free products. These are preferable wherever possible.

In addition to the actual packaging for food, for example, large customers also have to pay for additional transport containers and packaging. These can be made out of cardboard as single-use containers or often out of plastic. On the other hand, there are also reusable returnable alternatives on the market. An effective return system can be introduced with regional and local suppliers in particular, even for single-use containers.

8. Staff training

Practicability

Financial impact

Environmental impact

Inform your employees on a regular basis about which measures are implemented in your hotel to avoid and reduce plastic waste.

Train them in the correct use of packaging and disposable products, avoidance and waste separation.

The correct and efficient implementation of all measures depends to a large extent on the commitment and behaviour of the employees. Training in hotels, however, can also help to change behaviour in the long run. In the best-case scenario, employees also integrate their new knowledge into their private lives and can thus also act as advocates.

The involvement of employees is important when it comes to developing and selecting measures. Training is necessary in the correct use of packaging and disposable products, avoidance and waste separation.

The hotel employees are not only involved in the successful implementation of the measures described here, they also serve as role models for the guests.

Design of staff areas

The same requirements should apply to the staff areas as to guest areas in terms of waste prevention and waste separation options. Hotels should also ensure that PET bottles, single-use products and packaging are avoided.

Water should also be available to employees at refill stations with reusable bottles or carafes to prevent the consumption of beverages in single-use PET bottles.

The hotel's avoidance strategy, with its goals and measures, should be practised by all employees.

Measures for guest communication

	9. Information and integration of guests
Practicability	Communicate to your guests which measures have been undertaken in the hotel to avoid waste and how they can contribute.
Financial impact	Share information with your guests about environmental protection measures and waste management in the region.
Environmental impact	Involve guests in projects and initiatives.

Integration and information in hotel operations
Guests can only contribute to the implementation of the measures if they are informed about the hotel's efforts and made aware of the issue through appropriate information. They will also appreciate the fact that they are on holiday in a hotel that is committed to better environmental protection. The elimination of the usual single-use products will make a positive impression if the information is well presented and solid arguments provided.

Integration and information about the waste situation in the holiday region
A hotel is not an island. Guests can only be expected to follow good practices if they are well informed. Guest information should include details of waste management in the region and initiatives and measures undertaken by the municipalities. Guests should be encouraged not to use disposable items outside the hotels. It is also important to provide information about waste containers and sorting systems in public areas, such as on the beach. If there are none or if they overflow during high season, guests should have to option to return their waste to the hotel for disposal.

The waste avoidance measures implemented in hotels motivate guests to reduce the amount of waste generated during their holidays outside the hotel facilities as well.

Measures to strengthen the local waste infrastructure

	10. Collective action and cooperation in the region
Practicability	With alliances, partnerships and collaborations, pressure on municipal and supraregional decision-makers as well as on suppliers can be increased
Financial impact	
Environmental impact	

"It has proven useful when carrying out larger projects in a region when hotels join forces with tour operators, hotel associations and non-governmental organisations (NGOs). With cooperation of this kind, regions can establish themselves as sustainable tourism destinations.

Various initiatives can be launched together with committed hotels and stakeholders from the region. Cleaning beaches together with employees and guests can help raise awareness; information on proper waste separation in the region can encourage guests to take effective action. When several hotels join forces, this can lead to initiatives for better waste collection, separation and recycling. They can also exert greater influence on local and national decision-makers and suppliers.

If this improves the local waste infrastructure and suppliers are challenged to develop sustainable products and services, this in turn facilitates the implementation of measures in the hotel.

2.2 A look at practices – interviews with experts and hotel operators

This study identified ten measures to effectively avoid disposable plastic products and packaging. But what about the implementation of these measures in the respective holiday regions? In order to compare the list of measures with what has actually been accomplished, interviews were conducted with hotels and experts from the political realm, NGOs, national parks, waste management, certification schemes and hotel associations from Spain (Mallorca), Greece (Zakynthos, Corfu), France (Nice) and Italy (Rimini). We also talked to the respective WWF country offices.

The discussions included the following questions: how determined are hotel operators to meet the expectations of guests who want a clean and well-kept holiday ambience but do not want to compromise on standards and amenities? How do they make day-to-day decisions if they want their operations to be cost-effective and their employees to be highly motivated and competent, but at the same time, they are confronted with inadequate waste disposal systems in their region, which threaten to collapse during high season? Which of the measures outlined here have already been implemented, and which hurdles do hotel operators face?

The results of these discussions are summarised and evaluated below. This evaluation is only based on the interviews conducted and is not a representative survey. A list of interview partners, interview guidelines for hotels and experts and information on the survey method can be found in the Annex.

Measure 1:
Monitor and document all single-use products and packaging consumed and the amount of waste they produce

About half of the hotels say that they have been implementing measures to reduce and avoid waste for many years. One hotel even has 27 years of experience in this area. The other half of the hotels had only recently started to implement measures. The longer implementation has been in progress, the more measures have been implemented. It was found that both hotels with environmental certifications and hotels with many years of experience in implementation use a waste management or sustainability concept as a strategic basis. They also have appropriate records (monitoring).

Companies that only put the first measures into practice at the beginning of the last tourist season tended to select them arbitrarily. A waste management concept is not legally required in the entire Mediterranean region. However, various environmental certifications require this kind of concept. Here, certification positively affects how hotels approach the problem. Through the analysis and structured approach necessary to create a waste management concept, the potential and possibilities for reducing single-use products and packaging are identified. A waste inventory is an influential instrument used to monitor waste avoidance measures. The concept should be monitored on a regular basis.

Measure 2:
Waste is separated and collected by the categories available in the region

In all regions, hotels cooperate with municipal waste disposal companies. The standards are very different. All of the hotels collect and separate their waste in accordance with the specifications of the service providers. Only hotels in Zakynthos and Corfu responded that they also rely on private waste disposal companies through their own initiative, as separate waste collection would not be sufficiently available at municipal level.

Small hotels, mainly dedicated to guests from German-speaking countries, offer guests waste separation by several categories. The measure is well received and correctly implemented by the guests. If the hotels interviewed are compared, waste separation performed by guests proves to be more difficult when guests are from different countries.

Most hotels do not yet offer guests waste separation in their rooms. In some hotels, room waste is separated by staff into recyclable categories and residual waste.

Measures 3 and 4:
Avoid single-use plastic packaging and products

The interviews show that the hotels are well aware that single-use plastics and plastic packaging must be avoided.

However, there is a clear tendency to replace products instead of eliminating them. PET bottles are in part replaced by other disposable packaging such as beverage cartons (water in rooms and outdoor areas) or cans (beverages in the mini-bar), drinking straws by alternative plastics or paper. However, there is a trend towards eliminating drinking straws in particular. One way to considerably reduce the use of drinking straws is to only dispense them at the customer‘s request. In this case drinking straws are kept out of the guest’s reach and only made available upon explicit request. Most hotels have also dispensed with cocktail decoration and bar utensils such as stirrers. Only one hotel indicated that it used classic cocktail decorations because its guests expect them. Here plastic stirrers were only replaced by wooden alternatives. When it comes to food, most of the hotels surveyed said they were trying to avoid pre-portioned packs. When hotels do use single-portion packs, they often justify this decision with the guests’ sensitivity to hygiene or a lack of alternatives. There are no known hygiene regulations or laws that would require the use of pre-portioned packaging. Only the Italian companies criticised how the laws are interpreted in their responses: the legal texts

are not sufficiently clear and are sometimes interpreted very differently by the inspectors. For example, yoghurt was allowed to be served pre-portioned in small bowls at one hotel, while sealed pre-portioned packs were demanded at another hotel.

Guests‘ expectations also play an important role in the distribution and use of pre-portioned packs. In addition to the hygiene aspect, hotels reported that guests also want a certain exclusivity. The pre-portioned product belongs exclusively to one guest and does not have to be shared with others. Pre-portioned packs were also often used for lunch boxes if they were provided by the hotel.

In summary, it can be said that the breakfast buffets of most hotels reach a good level of waste avoidance. The situation is different in the guest rooms. In the case of toiletries, the packaging generates large quantities of waste. In the bathroom, shower gel, soap, shampoo, lotion etc. are still usually offered in pre-portioned packs. In the higher price segment in particular, a hotel’s star classification plays a role on the one hand and guest expectations on the other. The number of stars only indicates that a certain number of products (“amenities”) should be offered in the rooms, but not the type of packaging. According to the hotels, the more environmentally aware the guests are, the easier it would be to switch to dispensers and eliminate single-use packaging.

One hotel whose guests spend a whole week or longer in a room uses larger containers rather than dispensers which last an entire week. This already significantly reduces the consumption of plastic packaging.

In the case of toiletries, too, companies are trying to resort to alternative packaging (“compostable packaging” or aluminium) instead of consistently reducing use. In one hotel, pre-portioned “amenities” may not be replaced since they are required by corporate guidelines. Some hotels offer cotton swabs, cotton pads or shower caps in the rooms as well as slippers. There are not really any alternatives currently available. Hotels usually only think about how to replace plastic packaging, but not about how to consistently avoid waste. All hotels say that the most commonly requested items by guests are toothbrushes and razors.

"Vanity packs" are required when hotels have a higher star classification. However, the wording is unclear. The hotels are unsure whether these products actually have to be present in guest rooms and whether pre-portioned packaging is absolutely necessary. Here there is a need for the star classification to be clarified.

Hotels also report that dispensers are difficult to clean due to the high calcium content of the water and they become unsightly over time. Guests might have safety concerns about refillable dispensers. Another obstacle is the availability of products. Not all common brands are offered in quantities and designs suitable for dispensers.

Hotel rooms in the higher price segment are often equipped with coffee machines and electric kettles. The hotels surveyed use disposable capsule and pad systems. The hotels that are thinking about improvements here are only considering replacement with capsules and pads made of alternative materials.

In the outdoor and spa areas of the hotels surveyed, disposable products like single-use dishes are still frequently used, even though hotels have already begun to implement initial measures to reduce the amount of plastic waste in indoor areas. Various reasons were given for this: on the one hand, guests cannot tell the difference between disposable and reusable cups, meaning that reusable cups are often thrown out resulting in high costs for the hotels to purchase new cups. Polycarbonate glasses quickly become cloudy due to frequent cleaning, lose their shine and look dirty to guests. However, if guests are informed that disposable plastic is avoided here, the product is well received and their use rated as positive. One hotel says that it has to replace these glasses after just two years. The additional costs of purchasing and cleaning the dishes would prevent businesses from making the switch.

One hotel describes how it converted lunch boxes to returnable boxes. A deposit of EUR 5 is charged for the boxes. The service was well received by guests. However, this example is an exception. In this area, too, most hotels are replacing disposable plastic containers with disposable cardboard packaging or plastic alternatives.

Measure 5: Reusable returnable containers for beverages

All the hotels surveyed are aware of the problem of disposable PET bottles. They, too, cannot escape the huge mountains of plastic bottles that are increasingly shaping the image of polluted holiday regions. Replacing disposable PET bottles is therefore one of the priority measures implemented by the hotels. However, since the deposit bottle system is mostly unknown in the countries of the Mediterranean, alternatives are still unsatisfactory. Glass beverage bottles (instead of plastic ones) are often used. However, they are recycled after only a single use

Reusable beverage containers are only used by hotels where they are available from suppliers. This is therefore mainly the responsibility of suppliers.

Measure 6:
Make drinking water available and communicate effectively with guests

The quality of drinking water varies greatly in the Mediterranean region. Tourists, however, are generally suspicious of water quality. They do not take into account the fact that tap water in many places is completely safe and may only differ in taste from the quality they are used to. Many of the hotels surveyed confirmed that the tap water was often not accepted by the guests. In Mallorca there are regions that buy all of the drinking and process water needed for hotel operations due to the high salt content of the tap water.

Installing water dispensers often represents a financial hurdle. Two of the hotels surveyed have to have all their drinking and process water delivered and store it over the season. Due to the costs involved, they cannot provide water free of charge.

Especially for smaller hotels a water treatment system is not a cost-effective option. These hotels are not in a position to offer their guests free drinking water.

Hotels that had already installed a water treatment system were not yet able to draw any conclusions about cost effectiveness and potential savings compared to PET bottles, as they had only recently made these investments.

Water dispensers are financially more attractive for hotels, although the size of the hotel plays a key role here. Smaller hotels can use water dispensers without too much financial outlay.

Some guests are used to having a water bottle in their rooms. One hotel reported difficulties in reducing the use of PET bottles in the hotel as guests would ask for these water bottles and see this as a downgrade in the hotel's service. A small handful of hotels said that they provide their guests with unlimited and free water in refillable containers and have successfully managed to reduce plastic waste considerably.

Measure 7:
Avoid single-use packaging in purchasing and procurement processes

The use of large containers is being stepped up and implemented in all areas of the hotels, as it entails financial advantages.

One hotel stated that it has no influence whatsoever on procurement, as this is organised centrally for the entire hotel chain. Another hotel said that it cooperates with local suppliers and even uses the cardboard packaging several times. One exception is packaging for fresh fish as it cannot be reused for hygiene reasons (styrofoam). Several hotels use transport packaging (bulk containers) multiple times to store other food in the hotel.

Measure 8:
Staff training

The following picture emerges from the statements made in the interviews related to this area: particularly in seasonally run hotels, hotel staff are only trained at the beginning of the season or at the beginning of the employment relationship. Only one hotel said that it holds regular staff meetings on a monthly basis. Although the employees are one of the most important factors in the implementation of all measures, it is generally the case that staff training receives too little attention in the hotels.

The complaints of the hotels listed below could most likely be alleviated or eliminated by providing more information and training: the hotels complain on the one hand about the staff's lack of awareness (e.g. no waste separation in their own households) and on the other hand about difficulties with changing routines (e.g. drinking straws not automatically added to every drink, but only on request). Some hotels clean the beaches together to raise awareness and increase motivation.

Degree of implementation: Yellow

Measure 9: Information and integration of guests

The hotel operators interviewed reported big differences in perception and awareness among their guests. Guests who are especially environmentally minded and who choose their holiday region based on the range of nature or nature-related activities on offer were particularly receptive to waste avoidance measures. They can be easily integrated into the hotel's strategy and won over to the cause. These guests do not perceive the elimination of excess plastic as negative. In contrast, other tourists expect certain standards in their hotels, which they are not willing to forego. If these expectations are not met, this could lead to negative ratings on travel portals.

Besides this, the origin of the guests also plays a role. Tourists from northern European countries as well as Germany, Austria and Switzerland are described as particularly environmentally conscious. Guests from southern Europe and other parts of the world were clearly less environmentally aware and sensitive to the use of disposable plastic products and the issue of plastic waste.

Especially hotels with very environmentally conscious clientele responded that they communicated their efforts sufficiently to guests and included them in their strategy. They even implemented additional measures based on suggestions from guests. The same applies to hotels that position themselves as environmentally friendly and sustainable. However, hotels that have not yet started to implement measures or have only recently started to do so, answered that they either do not involve guests at all or only to a very limited extent.

One third of the hotel operators surveyed stated that they actively involve their guests in waste separation – directly in guest rooms and in public areas. Only two hotels use measures such as workshops or beach cleaning for guests to address the waste problem. Overall, the involvement of guests in the waste concepts and avoidance measures of the hotels as well as the communication about the situation and unique conditions in the region still leave a lot to be desired.

Degree of implementation: Red

Measure 10: Collective action and cooperation in the region

Waste separation in the hotels is based on the options offered by the municipal waste disposal companies. In regions with inadequate structures, there are isolated attempts to entrust private companies with waste collection.

By forming partnerships with several hotels – with the support of local hotel associations – significant demand for further waste collection and disposal can be created. This would make the location more attractive for private companies and close the gaps in municipal waste systems. Apart from private initiatives of individual hotels that do not want to accept the inadequate waste concepts, infrastructure and the lack of public awareness, the hotels, their tour operators and a large number of guests are still lagging far behind the possibilities for bringing about change with joint campaigns and partnerships.

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2.3 Hurdles to achieving a Mediterranean Sea free of plastics

2.3.1 Obstacles: Experiences of the hotels

Interviews with hotel operators and experts from the various destinations have shown that there are serious and understandable obstacles to achieving the targets for reducing the volume of plastic waste and establishing appropriate measures.

What are these hurdles? What prevents hotels from quickly and completely eliminating single-use plastic and packaging? The hotel operators from Greece, Italy, France and Spain cite the following reasons, which are important from their perspective:

Financial impact

Replacing cheap disposable products made of conventional plastics with high-quality reusable systems or environmentally friendly alternatives is often associated with financial costs. Hotels ask themselves whether they should bear the additional costs themselves or whether they can pass them on to guests and, if so, how. The market lacks affordable alternatives in some cases. Here, suppliers and producers are called upon to find solutions for the hotel sector that are suitable for the mass market.

In addition, guests are often unable to distinguish between disposable and reusable cups, meaning that reusable cups are thrown out resulting in high costs for the hotels to purchase new cups. In addition, polycarbonate glasses quickly become cloudy due to frequent cleaning. One hotel said that it has to replace these glasses after just two years.

A further aspect is that the use of reusable dishes outdoors increases the amount of work involved and requires more manpower. This is why hotels that only use reusable plates and dishes indoors often use disposable tableware outdoors.

The drinking water quality in the Mediterranean region, which is often perceived as poor quality or is actually worse, poses a challenge for hotels that do not want to use disposable PET bottles. Although water dispensers are an alternative for all-inclusive hotels and small hotels, for many hotels they could not be operated cost effectively. The installation of a water treatment system requires a great deal of investment. In addition, the sale of bottled water in plastic bottles is a not an insignificant source of income for hotels in the Mediterranean region that many hotels do not want to forego.

Lack of products and suppliers

Hotel operators complain about the lack of services and products. The Mediterranean region lacks deposit systems for reusable containers such as beverage bottles and food packaging (transport containers), which makes it more difficult or completely impossible to use them.

When it comes to toiletries (shower gel, shampoo, body lotion), there are not enough attractive and functional dispensers or larger containers as well as alternative packaging (hotels would like, for example, compostable plastics or glass for pre-portioned packaging). Hotels also report difficulties with dispensers, which are difficult to clean due to the high calcium content of the water and become unsightly over time.

The products themselves are usually not available locally and are therefore not 'typical of the country'. Intensive research is often necessary. If the product supplier is located abroad, this would entail high costs due to the longer transport distances. Not all common brands are also offered in quantities and designs suitable for dispensers. The local producers are called on to develop new formulas that are suitable for dispensers and environmentally friendly (e.g. free of microplastics) and at the same time meet the quality expectations of guests.

The lack of stakeholder groups and associations makes it difficult for the individual hotels to work together. Since communication is not adequately pooled, not enough pressure is exerted on service providers and suppliers to create new products and services. Information campaigns carried out by hotel associations or support from tour operators would be helpful for hotel operators.

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Established guest expectations

In recent decades, hotel guests have become accustomed to certain products as part of the tourist service. These include, among other things, the opulent set of toiletries in the bathroom, bottled drinking water or, in the higher price segment, a coffee machine. Hotel operators feel compelled to meet these expectations. They fear poor ratings on travel portals and booking platforms if guest expectations are not met. According to hotel managers, pre-portioned products (butter, jam, shower gel, shampoo, etc.) are perceived as hygienic by many guests.

They are considered exclusive as the product only belongs to them and does not have to be shared with anyone else. Holidaymakers may also have safety concerns about refillable dispensers. Here they need to be informed and convinced. They should be involved in the implementation of the measures and made aware of the issue through appropriate communication measures. The more environmentally conscious a hotel’s guests are, the easier it is to switch to dispensers.

No time to involve staff

The hotel staff is a key factor when it comes to implementing the measures. However, staff can only have a positive effect if they follow instructions correctly. The biggest obstacle, apart from a lack of awareness and experience, is the daily routine. On the one hand, employees are often not used to separating waste because there are no separation systems in the private sector or they are uncommon. On the other hand, some workflows have become so entrenched that new ones can only be learned through frequent corrections. One example is putting drinking straws in each drink or disposable products in guest rooms, which are replaced daily although they have not been used. Only through recurring training can the staff learn best practices and reinforce these practices through additional training. In many hotels, however, there is no time for training.

Lack of knowledge and awareness

It can be assumed that the hotels interviewed have already become more aware and are willing to change their behaviour to address the plastics problem in their own hotel.

However, respondents in most of the hotels assume that there is little awareness and interest in implementing measures in the surrounding area.

However, there is also a lack of knowledge among the interviewees at the hotels. Plastic packaging is often replaced by other materials that are not sustainable (e.g. beverage cartons, cans, aluminium packaging). There is often a lack of clarity about the materials used (see section 2.5 So-called alternatives) and almost no one has heard of an avoidance hierarchy: the first priority should not be the substitution of plastic, but avoidance. Most companies prefer to replace material rather than opt for reusable alternatives and eliminate disposable products. There is also a lack of knowledge about alternatives on the supplier side. Products are often advertised as environmentally friendly although they offer no advantages over conventional plastics. This makes it more difficult for hotels to find “real” alternatives.

Lack of infrastructure – lack of motivation

Hotel operators find it demotivating and disappointing when the waste management infrastructure is inadequate and the waste processing system functions poorly. They feel left alone in their efforts when their municipalities do not ensure that waste is disposed of and treated, but ends up in landfills or is incinerated. Many necessary measures fall by the wayside because the general conditions are lacking. Especially in regions with inadequate infrastructure, the use of plastics plays a particularly important role and should be given priority over replacement with alternative materials.

Rubbish on the side of the road in Corfu doesn't just frustrate guests, but also hotel operators and residents.

Lack of concepts

Hotels can only reduce plastics effectively if they know where they are used in their hotel and what waste they generate. Among the hotels surveyed, there is a clear tendency to implement measures rather arbitrarily and without suitable monitoring instruments. Hotels with environmental certifications usually create a kind of waste inventory, which is required by the respective programme. It would be important here to evaluate the measures implemented at regular intervals and,

if necessary, to improve or augment them. Hotel chains can implement different variants of measures in individual hotels and compare the results. Optimised and tailor-made measures can thus be developed.

Another problem is that measures are not strictly implemented in the hotels. While hotels eliminate, e.g. disposable PET bottles in the bar and kitchen, they are still found in mini-bars and outdoor areas. Although reusable systems for glasses, toothbrush cups and dishes are often used indoors, disposable tableware is used outdoors. Measures are therefore taken in the parts of the hotel visible to guests, but not everywhere in the entire hotel.

Stock levels

Hotels often opt to buy individual products in large quantities to save money. If the hotel wants to implement avoidance measures, this turns out to be an obstacle, since stocks must first be used up before a switch can be made to alternatives.

However, the legal requirements do not pose any hurdles

The logical assumption that certain legal requirements or hygiene regulations prevent hotels from eliminating disposable plastic and packaging does not apply to the regions and countries researched. There are no regulations that explicitly require or recommend the use of disposable plastic for hotel operators. It is more the scope for interpretation of the hotel auditor or the local tourism authority (star classification) that recommends the use of disposable plastic products as a particularly hygienic measure or minimum standard for luxury in individual cases. The hotels follow these guidelines to avoid possible complications in advance.

2.3.2 Waste management in tourism destinations

2.3.2.1 The Mediterranean: A plastic trap

In the summer months, the increasing volumes of waste push waste management to its limits in holiday destinations. Local waste management in many Mediterranean regions relies largely on landfills and incineration, has a low recycling rate and unfortunately still far too many unregulated landfills.[47] The result: when mass tourism meets inadequate waste management, the Mediterranean becomes a plastic trap.

Regardless of which activities hotels pursue to reduce their waste and plastic consumption, the industry cannot operate independently of its environment and the conditions in the country and holiday region. A motivated hotel quickly reaches its limits when political will and laws are insufficient and there is a lack of consistent implementation and necessary investment in infrastructure. On the contrary, if the overall conditions are not favourable, campaigns and initiatives will fail.

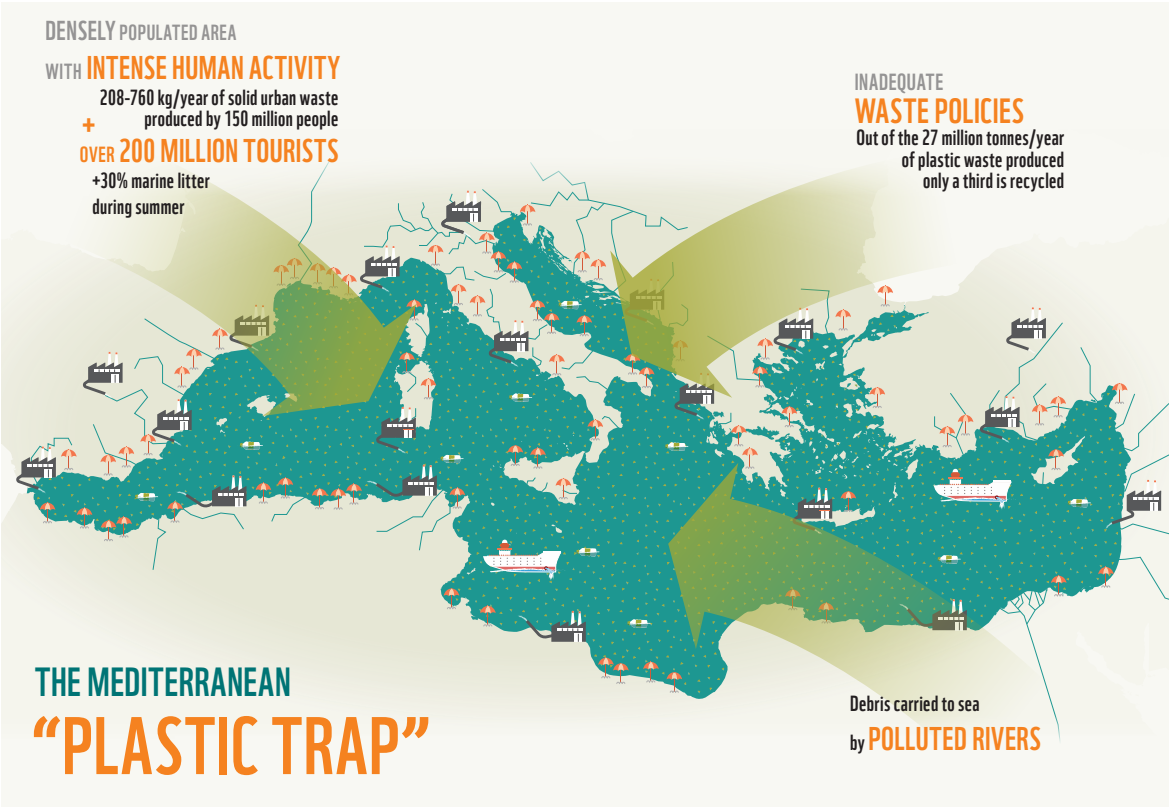


Figure 4:
The Mediterranean "plastic trap"

The following section therefore addresses the question of how national and regional waste management works in the destinations of the hotels surveyed. The plastic waste footprints of Italy, France and Greece show just how seriously the Mediterranean is affected by the flood of plastics and the role played by tourism. The study also looks at waste management in Spain and Greece and in particular the situation on two popular holiday islands with similarly critical situations but different responses: Mallorca and Zakynthos.

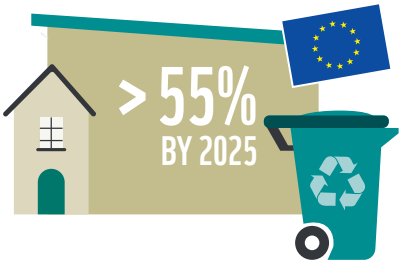
2.3.2.2 The EU Waste Framework Directive

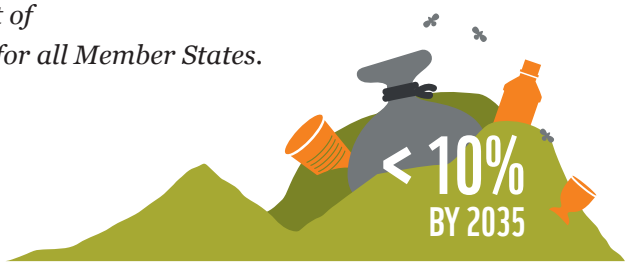
Even though the preconditions and development stages of the countries are different, they are all subject to the same European legislation, the EU Waste Framework Directive (Directive 2008/98/EC).[48] It requires waste management plans to be drawn up. Although compliance is mandatory at both national and regional level in all EU Member States, the structure of the Directive can be adapted to meet the specific conditions in the country.

Waste management plans are an important tool to reduce the negative impacts on human health and the environment caused by waste generation and management. In addition, they are also important for transitioning to a circular economy and one of the most important tools for achieving the objectives of the EU Waste Framework Directive. The plans include both a description of the status quo and the goals of the waste management policy. They also define appropriate strategies and methods for achieving these goals in the Member States.

An important EU target, for example,

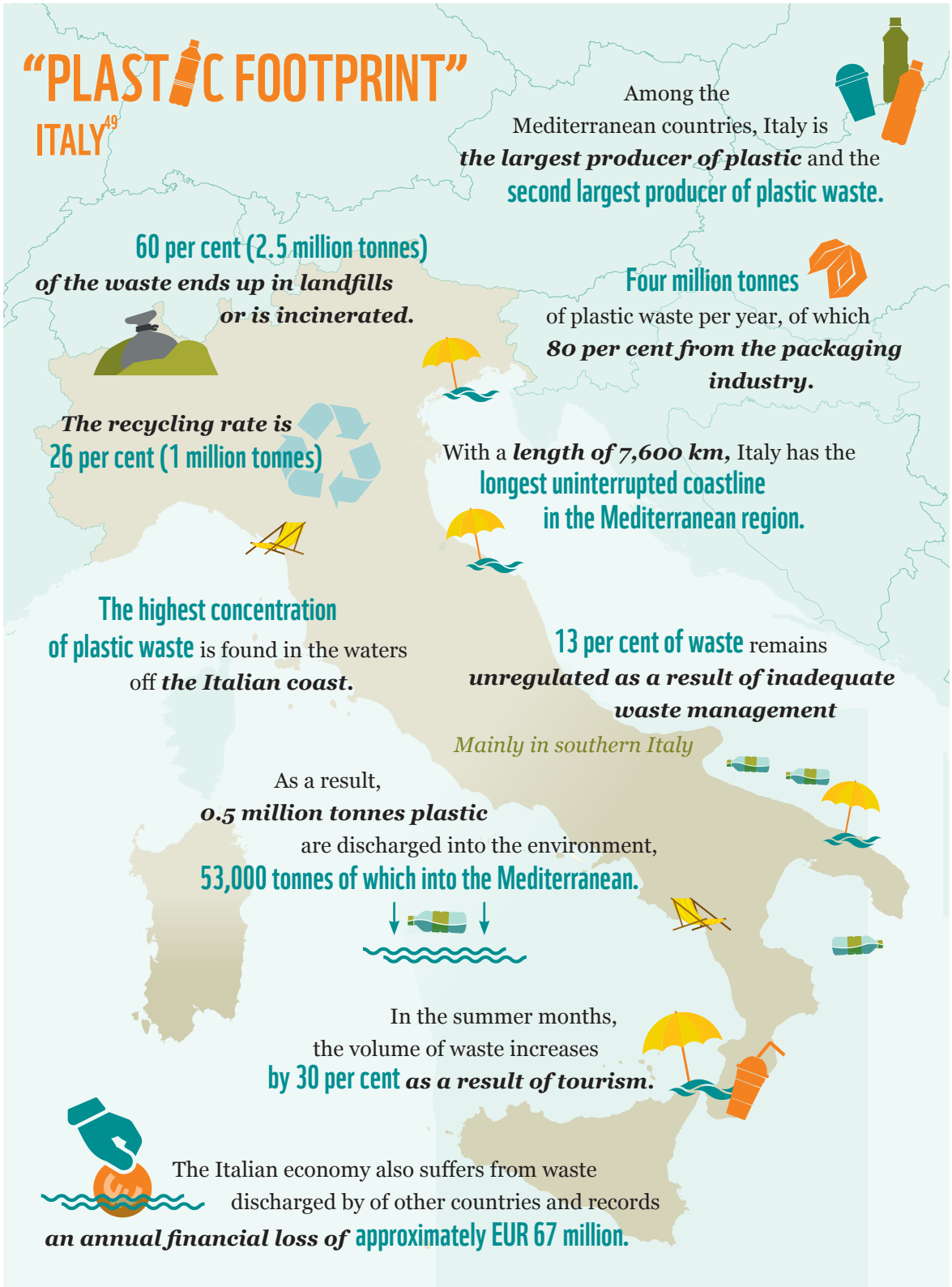
... is the recycling and recovery of 55 per cent of household waste (municipal waste) by 2025 for all Member States.





Only 10 per cent of municipal waste is to be disposed of in landfills by 2035.

2.3.2.3 The plastic waste footprint of Italy, France and Greece as holiday destinations



"PLASTIC FOOTPRINT"

FRANCE[50]

Among the Mediterranean countries,
France is the largest producer
of plastic waste.

In 2016,
4.5 million tonnes of plastic waste were produced here,
which is ***equivalent to 66 kg per person.***

Recycling rate:
22 per cent

Of this waste, **98 per cent** was sent
to a form of ***regulated waste recycling:***
4.4 million tonnes

76 per cent was incinerated or deposited in landfills.
That's **3.4 million tonnes.**

However, 0.1 million tonnes
remained unregulated:
80,000 tonnes of plastic waste
made its way to the environment,

approx. 11,200 tonnes
into the Mediterranean Sea.

Mainly responsible
for the discharge of plastic waste
are the tourism activities
along the coast...

Nice
Marseilles
Corsica

... and French coastal towns such as
Marseilles and Nice, as well as the island of Corsica.

France's economy pays a high price
for plastic pollution in the sea and on the coasts:

the financial loss caused by tourism and shipping
amounts to **EUR 73 million annually.**

"PLASTIC FOOTPRINT"

GREECE[51]

700,000 tonnes of plastic waste
are generated annually in Greece,
which is ***equivalent to 68 kg per person***.

About **84 per cent** of the
total plastic waste ***is disposed of***
at the 74 or so landfills in the country.

200,000 tonnes of waste
are generated by packaging,
only about a quarter
(56,000 tonnes) ***of which is***
collected in blue bins
for packaging ("Blue Bin System").

Only **eight per cent** of plastic waste
is collected ***for recycling.***

Tourism has a significant impact on the volume
of waste: ***in the summer months, the volume***
of waste on Greece's coasts and islands
increases by **a good 25 per cent.**

40,000 tonnes of plastic waste
are discharged into
the environment every year,
11,500 tonnes directly into the sea.

Thessaloniki

Tourism and poor
waste management in hotspots
such as **Thessaloniki, Corfu and Heraklion**
are responsible for **68 per cent**
of this amount.

Corfu

The Greek coastline – including its
approximately 2,000 islands – is 13,676 km
long. This extremely long coastline
means that a lot of waste washes up here:
more than **ten per cent of the rubbish**
from the entire Mediterranean region.

The waste in the waters and
on the beaches does
not just originate from Greece.

But due to the resulting damage, ***the country faces financial losses***
of approximately **EUR 26 million annually** (maritime economy,
fisheries sector, tourism).

of which ***losses in the***
tourism industry: **EUR 18 million**

Heraklion

2.3.2.4 Waste disposal in Spain

With a low recycling rate and a high landfill rate, Spain was still far from reaching EU targets in 2016. Although the volume of waste in Spain, at 443 kg of household waste per person per year, is moderate compared with the EU average of 482 kg per capita (627 kg in Germany and a peak of 777 kg in Denmark), only around 30 per cent of the waste is collected for recycling, while a further 57 per cent is still disposed of in landfills.[52]

The "National Master Plan for Waste Management PEMAR 2016 – 2022" (Plan Estatal Marco de Gestión de Residios) is Spain's waste legislation that transposes the EU Directive into national law. The 17 autonomous governments follow it with their own multi-year waste management plans. Disposal and recycling are decentralised.[53] The high autonomy of the regions and municipalities makes uniform enforcement difficult. It is therefore not surprising that the amount of waste collected for recycling varies widely:

While La Rioja is very far ahead with 55.8 per cent, in the Madrid region only 15.5 per cent of waste is collected for recycling. The holiday regions of the Balearic Islands and the Canary Islands, of all places, lag behind with only 18 per cent (Balearic Islands) and 14.3 per cent (Canary Islands).[54]

How recycling works in Spain

The entire Spanish population has access to separate collection systems. There are currently four different containers for separating waste:

Grey containers for residual waste

Green containers for glass

Blue containers for paper or cardboard

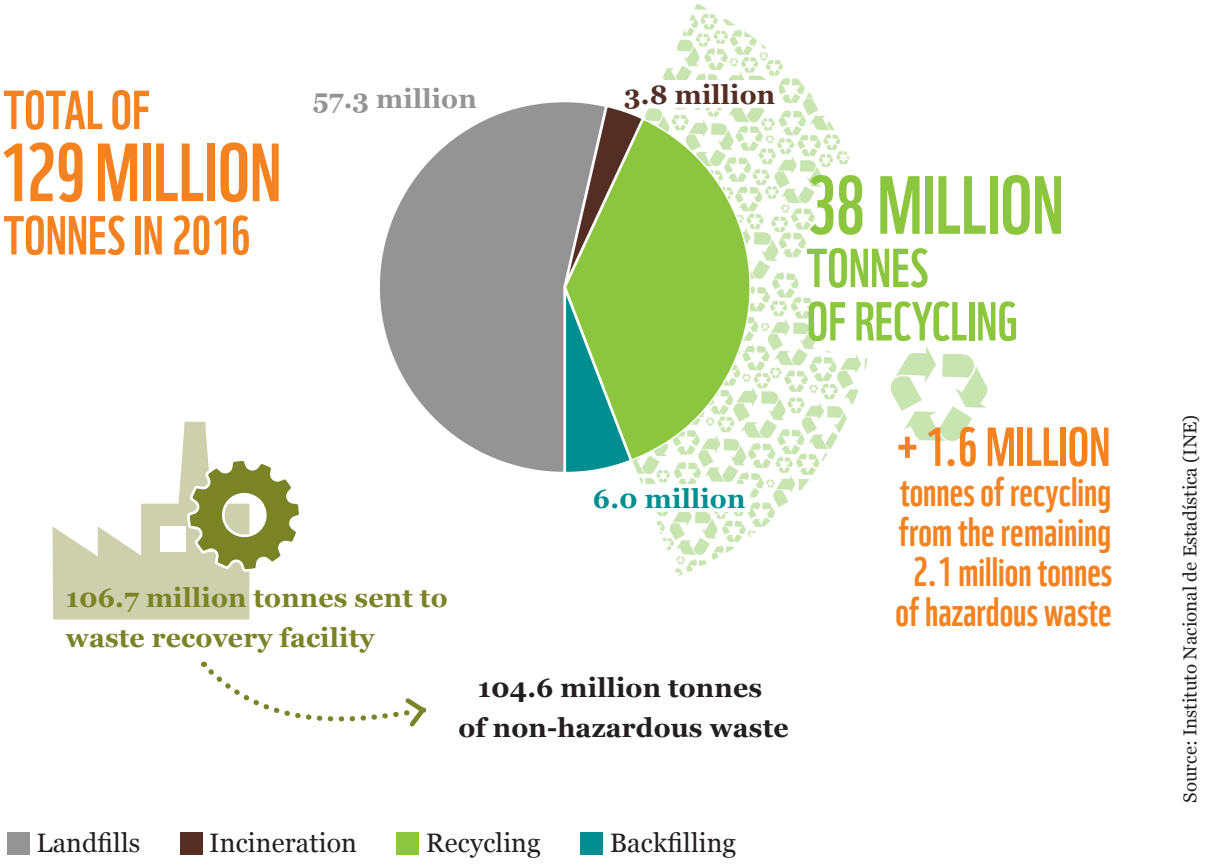
Yellow containers for plastic and lightweight packaging

In some autonomous regions there are also brown containers for organic waste. The aim is to produce compost and organic waste that can be used as fertiliser and for energy production.

Volume of recyclable household waste is increasing

A large share of the residual waste reaches the municipal waste processing plants. Here the recyclable materials are separated and the rest is disposed of in landfills or incinerated. Despite the high percentage of waste that still ends up in landfills in Spain, the volume of recycled household waste (paper/cardboard, glass, light packaging and organic materials) has increased in recent years.

According to the National Statistics Institute (INE), the Spanish economy produced a total of 129 million tonnes of waste in 2016. 106.7 million tonnes were sent to waste recycling plants. Of this figure, 104.6 million tonnes were treated as non-hazardous waste: 53.7 per cent were disposed of in a landfill and 3.5 per cent incinerated, 37.1 per cent collected for recycling. A total of 39.6 million tonnes of waste were recycled in 2016.



Source: Instituto Nacional de Estadística (INE)

Figure 5:
Total recycled waste volume in Spain in 2016 in millions of tonnes

2.3.2.5 Mallorca: A radical change of course

Mallorca is the largest of the Spanish Balearic Islands, an archipelago in the Mediterranean Sea. This island is one of the most important tourist destinations in Spain and is one of the most popular holiday destinations in the entire Mediterranean region.

The economy of the Balearic Islands in general and the island of Mallorca in particular is essentially based on the service sector, which accounts for more than 80 per cent of the gross domestic product (GDP). Within this sector, tourism is by far the most important economic activity: 48 per cent of the regional GDP is generated by tourism, of which 37 per cent comes from the hotel industry alone.[55]

According to data from the Balearic Islands Tourism Strategy Agency (Agencia de Estrategia Turística de las Islas Baleares AETIB), around 13 million tourists visited Mallorca in 2017. Over ten million of these holidaymakers come from Europe, mainly from Germany, Great Britain and Spain. They visit the island especially in the months May to October.

© Martina von Münchhausen / WWF

"After a heavy rain, the sea is full of plastic."

Sebastià Sansó i Jaume, Directorate General of Environmental Education, Environmental and Waste Policy of the Balearic Islands

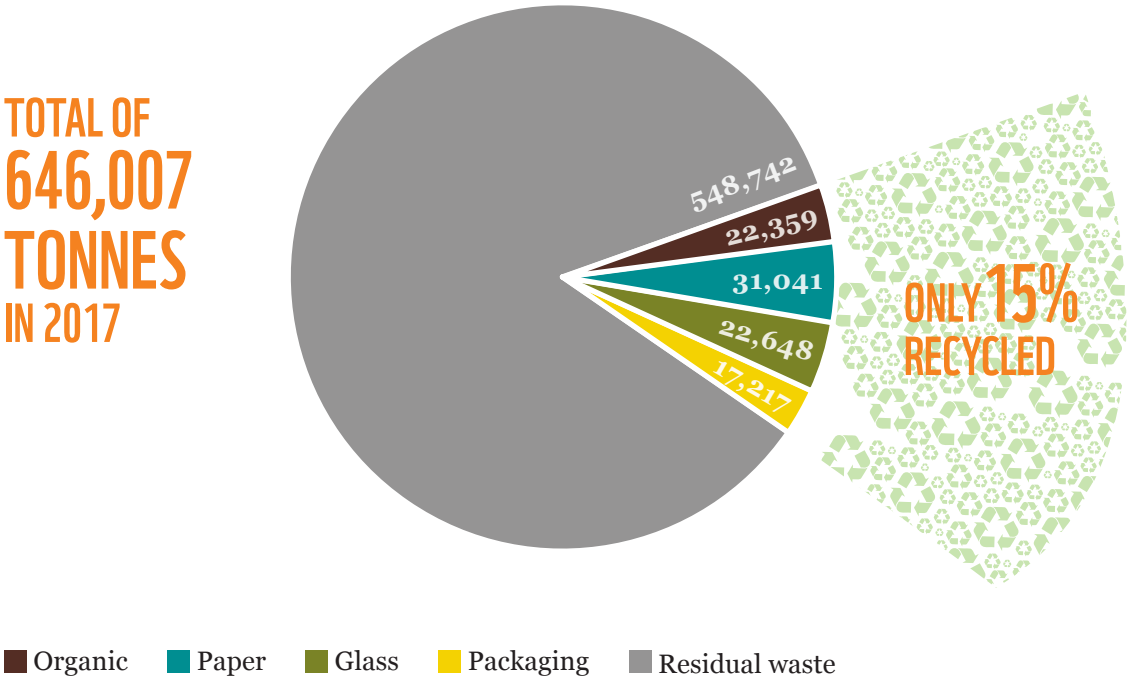
How does waste management work in Mallorca?

Mallorcan waste management is the responsibility of the Consell Insular de Mallorca. It is responsible for planning and managing non-hazardous waste. The municipalities collect and transport waste to the recycling facilities.

There are five municipal waste transfer stations on the island. The collected waste is separated there into different categories and transported to the respective recycling facilities. These five stations are well distributed on Mallorca in Alcúdia, Binissalem, Campos, Manacor and Calvià.

The separated categories are transported from there to the large waste processing plants in Son Reus and Can Canut. The private waste management company Tirme S.A., Parque de Tecnologías Ambientales de Mallorca is responsible for waste disposal and processing.

According to the most recent data from the Consell de Mallorca, the total amount of municipal waste in 2016 was over 600,000 tonnes. In 2017 it reached 646,007 tonnes, 15 per cent of collected for recycling.



Source: Consell de Mallorca

Figure 6:
Selective collection of waste on Mallorca in 2017, in tonnes

Tourism as source of waste

In Mallorca, the amount of municipal waste generated varies with the seasonality of tourism. Mallorca receives more than ten times as many tourists in relation to its population per year. Most visit between May and October. In the high season, the island records more than 80 per cent of all its annual tourist traffic.

Tourists are also the reason for the above-average rate of municipal waste: 580 kg per inhabitant in Mallorca (compared to the Spanish average of 443 kg).[56] This figure rises to 700 kg per person for waste production in all of the Balearic Islands, which is the highest in Spain.[57] The Balearic Islands produce the highest volumes of waste and have the lowest recycling rate. Tourism has a major impact on the amount of waste generated on the island, be it plastic, paper, glass, organic or mixed waste. This is evidenced, for example, by the fact that in July and August almost twice as much rubbish is produced in Mallorca as during the low season, exactly 1.8 times as much.[58]

MALLORCA IS DROWNING IN WASTE

In other words, the island is drowning in waste – especially during the summer months, when the island is virtually overwhelmed. The tourists are considered to be the largest waste producers on the island. Of the waste found on the beaches of the Balearic Islands in 2018 and removed from the sea by "trash boats", 45 per cent was plastic: around 58,000 kg, of which over 34,000 kg were found on beaches in Mallorca.[59]

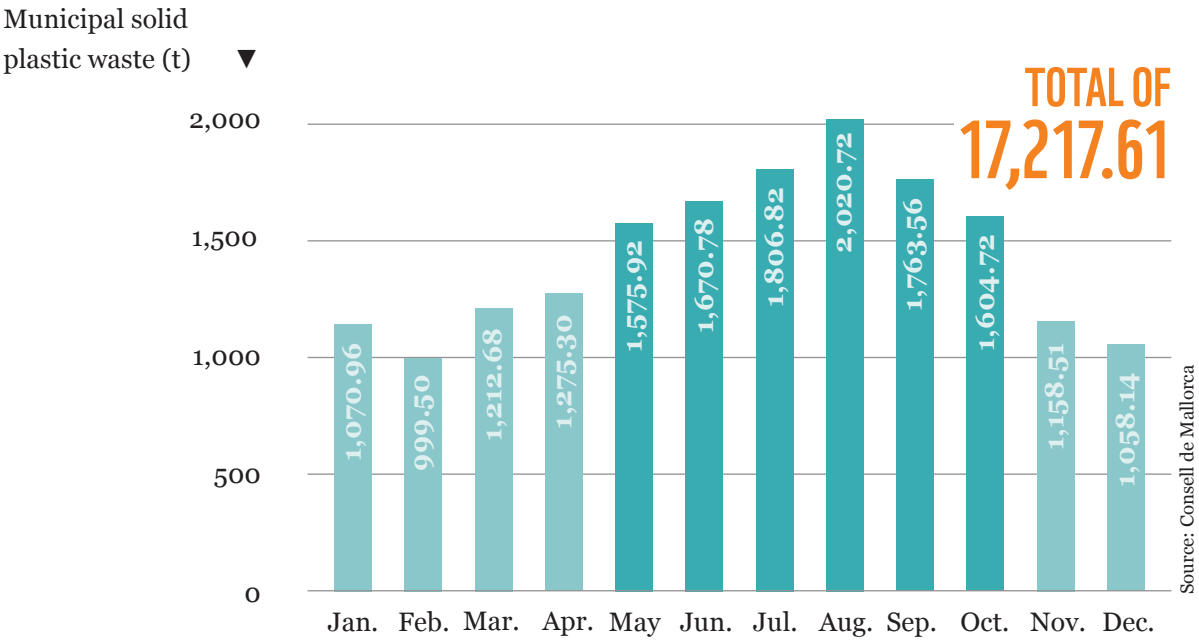


Figure 7:
Plastic waste collected on Mallorca in 2018

During the holiday season, the government of the Balearic Islands deploys 30 boats that travel along the coasts every day to clean the surface of the water. Around Mallorca there are 14 boats in service, seven each off Menorca and Ibiza, while Formentera has two boats.

In July alone, the trash boats fished almost 15 tonnes of waste out of the water off the coasts of the Balearic Islands. About half the waste is plastic.

Most of the waste was removed from the sea by employees of the state government off Mallorca (10.4 tonnes).

Figure 8:
Plastic waste on Mallorca's beaches - the top 10

“All the plastic that is reduced will not end up in the sea.”

Tupa Rangel, NGO Save the Med

Mallorca pulls the rip cord: "Balears sense Plàstic"

Unlike many other holiday regions in the Mediterranean that share a similar fate, Mallorca is now taking radical action to combat the plastic waste pollution of the Balearic Islands and the sea. The hotel sector is fundamentally affected.

In January 2019, the Balearic Autonomous Government passed a law banning single-use plastics, one step ahead of the similar EU Directive. The law "La nueva Ley de residuos y suelos contaminados de Illes Balears (8/2019)"[60] prohibits the following single-use products as of 1.1.2021:

- » ***Lightweight plastic bags***
- » ***Plastic dishes (coated disposable trays, plates, cutlery, drinking cups)***
- » ***Drinking straws***
- » ***Disposable razors***
- » ***Disposable lighters***
- » ***Cotton swabs***
- » ***Lollipop sticks***
- » ***Disposable wipes***
- » ***Single-use capsules for coffee***
- » ***Disposable toners and cartridges***

Drinking water on the island will also be made accessible to everyone in public buildings. From 2021, hotels, cafés and restaurants will also be required to provide guests with free tap water (as long as they have drinking water suitable for consumption).

© iStock / Getty Images

In addition, plastic disposable pre-portioned packs may no longer be offered in food and sanitary areas in hotels and restaurants. These include, for example, ketchup, mustard, sugar, jam, etc., but also shampoo, creams, lotions, etc. for toiletries.

PAY as you throw

The aim is to reduce the volume of waste by a total of ten per cent by 2021 and by 20 per cent by 2030 through better waste separation. To this end, "pay as you throw" fees will be introduced for the various waste categories and a bonus system for best practices. Another target is to reduce food waste by 50 per cent by 2030. Anyone who violates the law must expect fines of between EUR 300 and EUR 1.75 million.

The new legislation falls short because disposable plastic products may be replaced by compostable variants. Legislation is even vigorously pushing hotels and retailers to offer alternatives. Replacing single-use with single-use sends the wrong message. It undermines the goal of reducing waste. The first consequences are already apparent. As a result, many hotel chains do not strictly avoid waste, but use biodegradable cups, drinking straws or bottles, for example, or choose substitute materials made of wood or paper.

Even the deposit system based on the German model called for by all parties will not initially be feasible.

2.3.2.6 Waste disposal in Greece

Waste management in Greece is mainly regulated by the National Waste Management Plan adopted in 2015 and based on the EU Waste Framework Directive.

TOURISM AS A WASTE PRODUCER

In the summer months, the volume of waste produced by tourists on the Greek islands increases threefold

In Greece, the primary objective is to reduce the high share of waste going to landfills and to increase recycling rates. The Recycling Act passed in 2017 set ambitious quotas for 2020: up to 78 per cent of plastics are to be recycled and at least 22.5 per cent of plastic packaging.

The country is facing enormous challenges. Waste disposal is complicated and expensive on the many inaccessible island groups. During the summer months, the amount of waste produced by tourists on the islands increases threefold. The waste disposal facilities are understaffed, the equipment (number of rubbish collection trucks, etc.) is insufficient and the rubbish dumps are overwhelmed and overflowing.

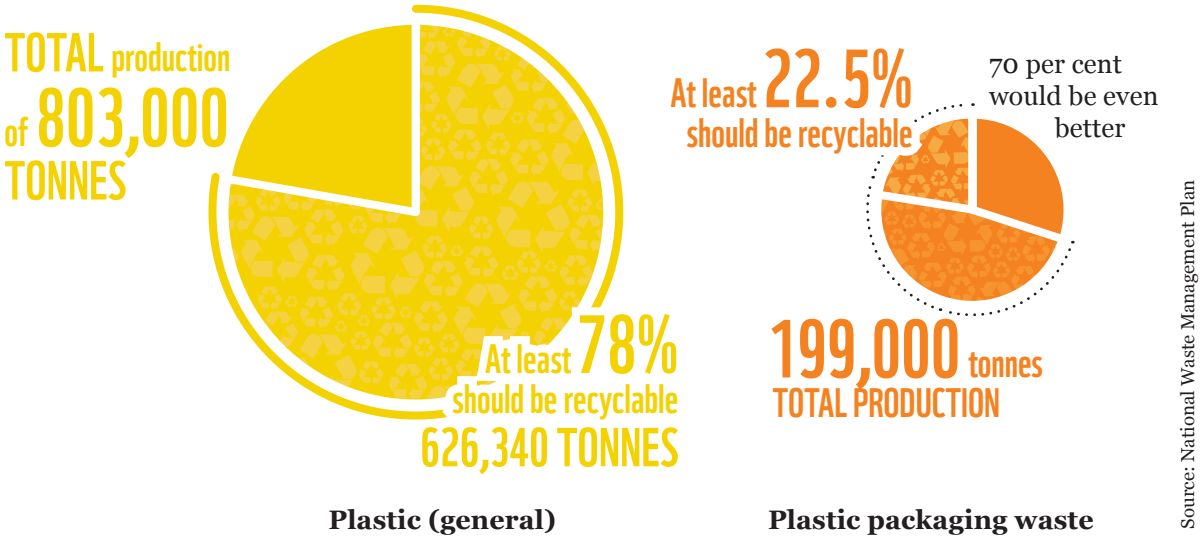


Figure 9:
Recycling targets for 2020 for plastic and plastic packaging waste, in tonnes

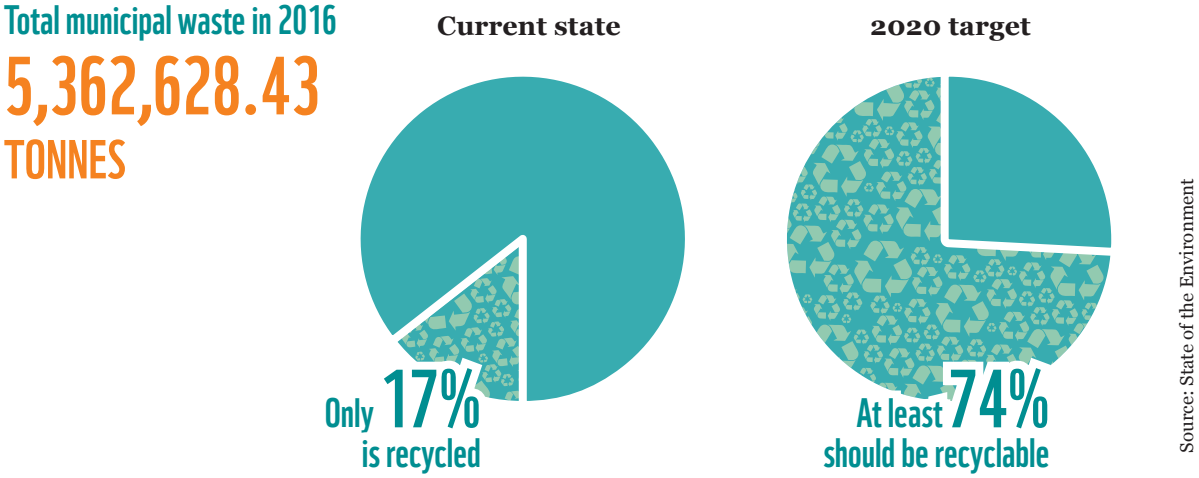


Figure 10:
Total volume of Greek municipal waste in 2016

While the National Waste Management Plan provides for the recovery of 74 per cent of all municipal waste by 2020, the actual figures for 2016 show that the recycling rate is only around 17 per cent. Most of the waste produced in Greece (82 per cent) still ends up in landfills, 3.7 per cent of which in illegal landfills. There is a particularly high risk that this waste will end up in the sea.

The European Commission is very concerned that the 2020 targets will not be met and cites the following reasons:[61]

» Lack of infrastructure for the separation of recyclable materials
» Low level of public awareness about waste avoidance and separation
» Too few financial incentives for waste avoidance and recycling
» Lack of relevant economic instruments, e.g. landfill tax (fee systems)

Recycling does not work – the Blue Bin in Greece

The most important collection system for packaging and plastic waste in Greece is the "Blue Bin" system, which allows citizens to dispose of all waste packaging in the blue bin without further screening.

The system has existed since 2003, introduced by Hellenic Recovery Recycling Corporation H.E.R.R. Co.

165,000
BLUE BINS

There are currently 165,000 blue bins in Greece. The municipalities are responsible for their collection. The system is a "one-stop deposit "point: everything that can theoretically be recycled is deposited here: paper, glass, plastics and metals. The collected packaging waste is then sent to material recycling facilities (MRFs), where the various streams of recyclable materials are sorted and recovered. In the next step, the materials are delivered directly to the secondary market for reuse. Poor quality materials, contaminated packaging waste and waste residues usually end up in the nearest landfill.

According to the data obtained by the MRF, between 40 and 50 per cent of the Blue Bin content is contaminated, mainly due to ...

» The public's lack of awareness of how to properly separate and collect recyclable materials

» The reluctance of key waste management stakeholders to cooperate and invest in more efficient recycling schemes

» The lack of appropriate economic and political instruments to achieve a higher recycling rate

In 2017, this system collected 73,000 tonnes of plastic waste, which corresponds to about eight per cent of the total plastic waste. Only half of this amount is fed into the recycling process.

© Claudia Pfeiffer / WWF

Highest density of nesting sites for the Caretta Caretta sea turtle in the world

2.3.2.7 Zakynthos: Holiday paradise and sea turtles under threat

The good news first: in 2018, 783 loggerhead sea turtle nests were counted on the famous beach of Sekania on the island of Zakynthos, where 93,960 eggs were laid. This is a record number. This number of nests over a distance of only 550 metres represents the highest density of nesting sites in the world. Sekania is the most important beach and nesting place for the Caretta Caretta sea turtle in the whole Mediterranean Sea.

© iStock / Getty Images

But the beaches of Zakynthos are not only popular with sea turtles: Zakynthos is one of the five most important tourist destinations in Greece. Approximately two of the 12 million tourists to Greece each year visit the island during the summer months. Half of them from Great Britain and Germany.

The tourist flows on the island are very unevenly distributed. Most tourists can be found in Laganas Bay and Tsilivi. Laganas Bay is part of the Zakynthos Marine National Park (NMPZ), which is home to the six different nesting beaches of the sea turtles.

The coexistence of tourists and sea turtles is a challenge. As the beaches are not off-limits – with the exception of Sekania – lounge chairs and parasols cover most of the nesting sites. The tourists populate the beaches until late at night. Nightlife on Zakynthos buzzes until the wee hours with bright lights and noise in the immediate vicinity of the precious nature reserve.

But it is not only the mere presence and activity of tourists on the beaches that poses a threat to the possible nesting sites and the carefully mapped and monitored habitat of sea turtles. The rapid expansion of the surrounding tourist infrastructure such as hotels, restaurants and bars and the amount of waste they generate pose an existential threat to the protected species.

How does waste management work in Zakynthos?

The island produces around 30,000 tonnes of waste (municipal waste) every year. 60 per cent of this is generated in the holiday months from May to September (see figure below).

It is clear that tourism has a significant impact on the amount of waste produced on the island. For example, the volume of waste in August is three times as high as the average waste of a typical winter month. The qualitative composition of the waste generated in the summer months is also different. There is an increase in organic waste, but also an increase in plastic waste.

The typical hotel and tourist plastic disposables are mainly found on the beaches of Zakynthos during the summer months: straws, plastic bottles, disposable packaging for food and drinks, plastic cups but also beach balls, sun cream packaging and beach toys.

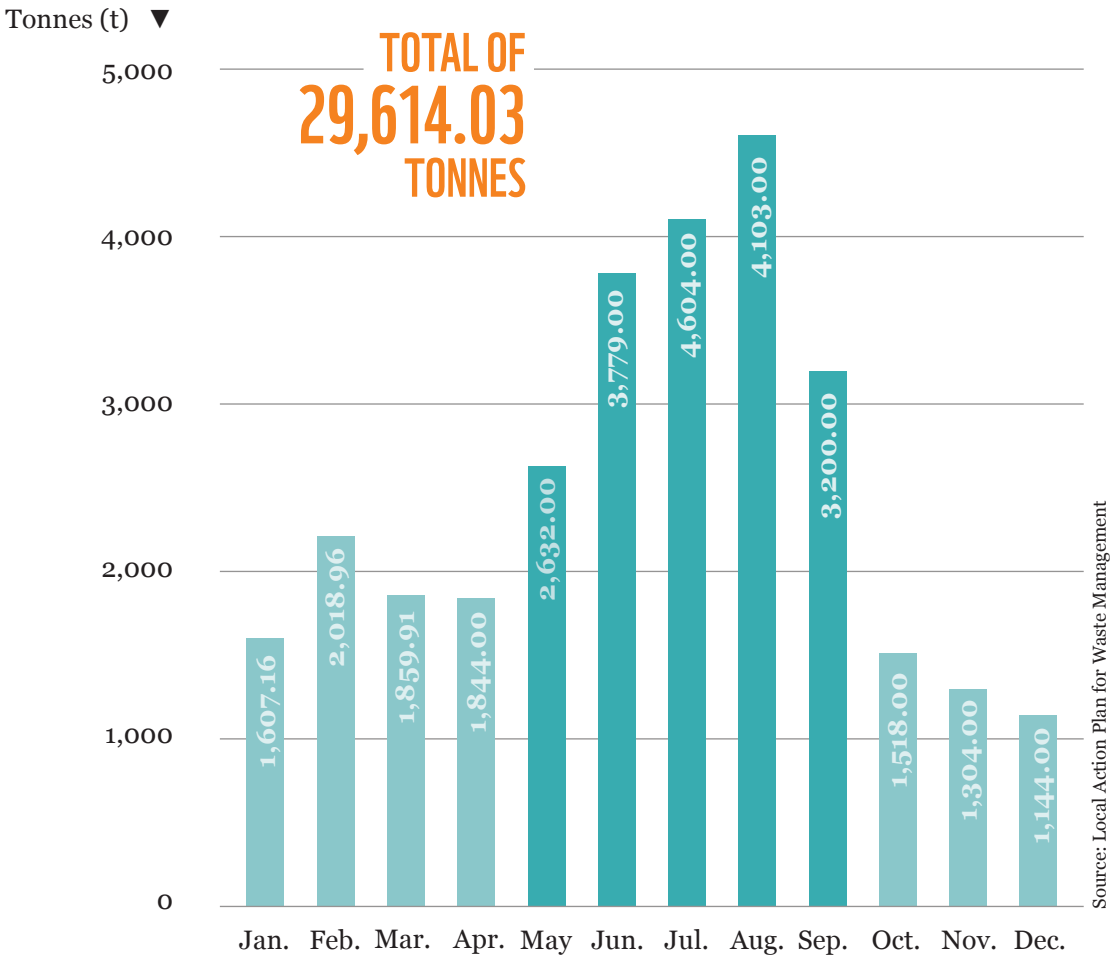


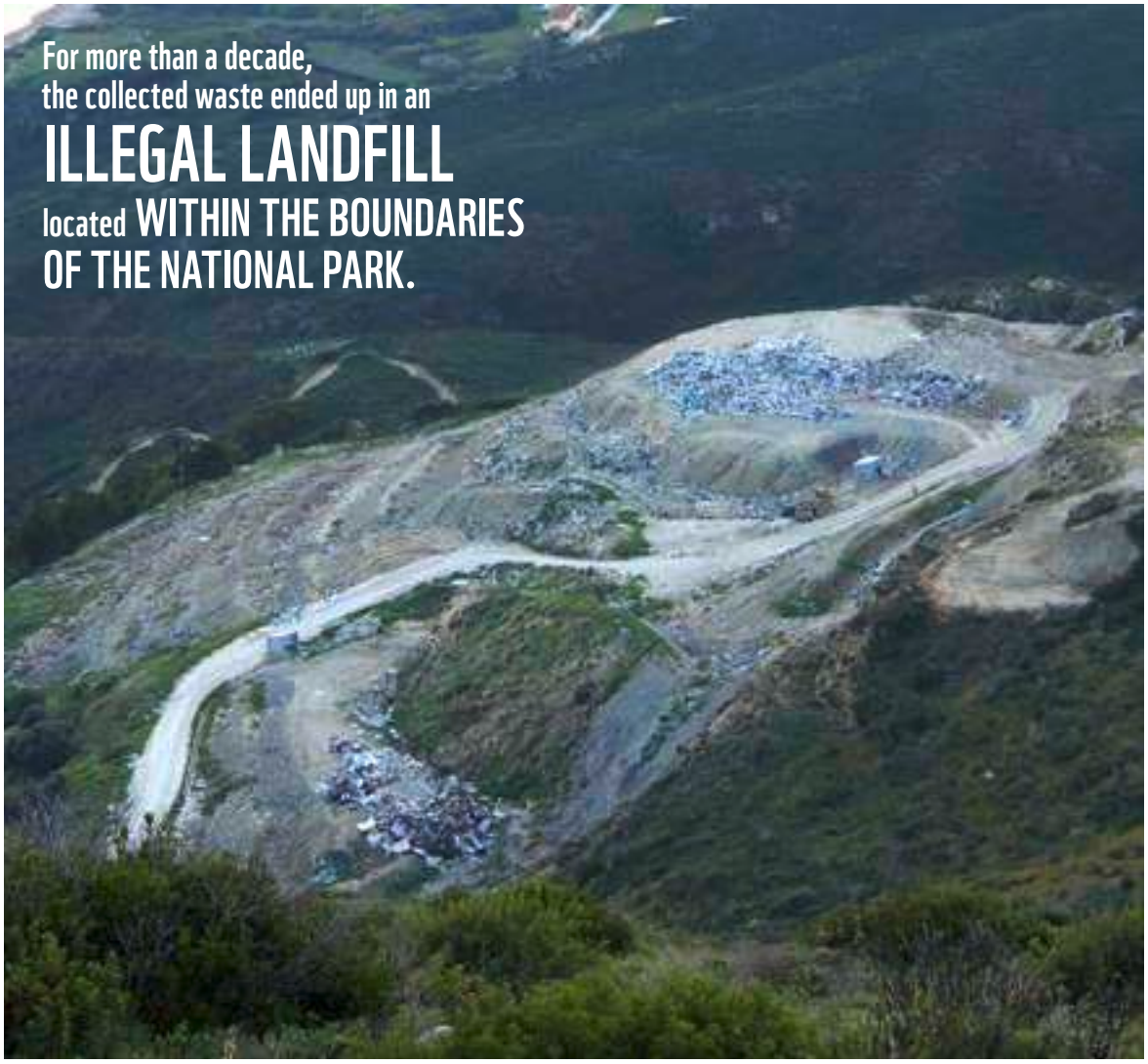
Figure 11:
Municipal waste production in Zakynthos in 2018[62]

Only 248 tonnes of plastic waste are recycled

The plastic waste is collected in the blue containers of the "Blue Bin" system and transported to the local material recycling facility (MRF), where it is sorted by category.

In 2017, the Zakynthos MRF collected around 248 tonnes of plastic waste. This is 0.83 per cent of the total waste produced each year – very little compared to the average share of plastic waste of 15 per cent.

Zakynthos' waste management system is therefore not yet efficient enough. For more than a decade, the collected waste even ended up in an illegal landfill located within the boundaries of the National Park. Although this landfill is no longer in operation, it has never been rehabilitated and it continues to pollute the marine protected areas.



© WWF Greece

A new legal landfill for the disposal of solid waste has been in operation for several years. However, the situation remains unsatisfactory as there are still many obstacles that prevent the system from working effectively:

» The city is too far from the site of the new landfill

» There are not enough rubbish collection vehicles

» Delays in the daily collection of waste, particularly in the summer months (due to overextended capacities)

» The limited equipment and infrastructure (according to the local waste management plan, there is an urgent need for more than 1,500 recycling bins and three additional disposal vehicles)

» Recycling is not working properly: packaging waste is collected in the blue bins, but 50 per cent of it ends up in landfills because all the materials are mixed and there is a high rate of missorted waste. For this reason, the recycling rate in Zakynthos is very low

» Level of awareness is too low and there are too few waste bins for sufficient separation

» Social strife in relation to the long-term problems of waste management

» Ignorance in the local population about waste avoidance and waste separation

» With the exception of the surcharge on the plastic bags, there are practically no financial incentives to avoid or separate waste

» No landfill fee or additional costs for unseparated rubbish and quantity

What are the hotels doing?

Zakynthos has about 300 hotels of different categories and price ranges: large hotels with more than 160 beds, boutique hotels, agro-tourism and all-inclusive hotels, as well as holiday apartments and villas. Approximately 10 per cent of hotels are actively committed to more environmental protection and sustainability. Some hotels are certified and carry a sustainability label such as Travelife or Green Key.

Most hotels separate their rubbish into two categories: residual waste and packaging waste that could theoretically be recycled. They take their rubbish to the public containers on the island. Since the containers are public, they cannot be traced back to individual households or hotels. A large percentage is not sorted properly but fines cannot be imposed. There is also no incentive for the hotels to avoid rubbish or to separate it better.

If the hotels on Zakynthos sort the garbage according to other categories, such as glass, aluminium or paper, then they have to find private companies on their own initiative to collect and process the waste. It is frustrating for the hotel industry when it tries to separate waste, but the community throws it unsorted into the landfill. It would be necessary to separate waste (as in Mallorca) according to the four categories: residual waste, paper, plastics/packaging and glass. The new recycling plan for Greece stipulates separation into four categories. But implementation has not yet taken place.

Waste management on Zakynthos cannot cope with the waste left behind by tourists.

As long as tourist destinations like Zakynthos do not have a functioning waste management system, it is all the more important that hotels consistently avoid plastic waste. Just as important, however, are strong partnerships and initiatives on the part of the tour operators, certification schemes and hotel associations.

As the mouthpieces of the hotels, they can promote the interests and demands for improved waste management so that the commitment of the hotel industry does not come to nothing.

For the island this would change attitudes, which would also affect society and have a positive effect.

2.4 Best practices

Despite the obstacles, it is clear that hotel operators are aware of their responsibilities and are setting good examples, regardless of the different regional conditions.

We would like to thank the participating hotels and experts from the destinations for their support and participation in the study. Many of the hotels and experts we spoke to were able to give us a number of good examples. Please understand that we can only list a few of them here.

Villa KaliMeera, Corfu

In the two hotel complexes of the tour operator ReNatour on Corfu (Honigtal and Villa KaliMeera), waste has been separated into recyclable categories and residual waste since the very beginning. The recovered materials, including paper, glass, metal, Tetra Pak, hard plastic, plastic packaging and PET bottles, are not handed over to the public waste disposal company out of concern that the waste will end up in an open landfill. The sorted materials are transported by ReNatour staff to collection stations organised by volunteers on the island. They ensure onward transport to the mainland to private customers, who recycle the separated materials. The organic waste is collected for the composting systems built by the tour operator. The Honigtal system won an award from the initiative The Corfu Compost Project in 2018.[63]

© Claudia Pfeiffer / WWF

In May 2019, in cooperation with The Corfu Compost Project, a seminar was held in both ReNatour hotels on waste avoidance, waste separation and composting with the target group of hotel operators, bar owners, café operators and private individuals. The plan is to repeat the seminar at the beginning of the season.

Hotel Atlantica Eleon Grand Resort, Zakynthos

The hotel provides information on the excellent quality of the drinking water and motivates its guests to drink water from the tap instead of buying plastic bottles. Refillable metal bottles are offered in the hotel's mini-market at wholesale prices. The hotel provides its guests with returnable lunch boxes. A deposit is charged on the boxes to ensure that they are returned and reused.

Castelli Hotel, Zakynthos

The hotel is a pioneer when it comes to sustainability. The hotel practices consistent waste separation that goes beyond the two-category system of municipal waste management. Waste separation extends to guest rooms, and the hotel uses the various rubbish bins in the rooms (balconies) and in the hotel to communicate with guests and raise awareness about avoiding plastic waste. The guests are informed about the hotel's waste prevention policy and asked to actively participate. The employees are also involved, receive regular training and serve as role models for the guests by sharing the philosophy of the hotel.

Zakynthos Marine National Park

The National Park Administration informs tourists about the waste problems on the island, in the sea and on the beaches of the National Park. Especially during the sea turtle breeding season (between May and October), the park staff are always present to inform guests about the code of conduct in the marine reserve.

They are asked to bring their beach waste to the hotel and dispose of it correctly. They are given paper bags to collect the waste for this purpose. This means that there is much less waste on the beaches of the national park than on other beaches. Guests do not leave waste on a clean beach. At the entrance to the beach, there are additional bins for separate waste collection. In addition, the National Marine Park of Zakynthos (NMPZ) organises year-round beach clean-up activities with local associations so that the beach sections for the newly hatched sea turtles remain free of rubbish and plastic waste.

NMPZ and WWF cleaning the beach for the sea turtles

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Hotel Petit Alaro, Mallorca

The small hotel with mainly nature and hiking tourists welcomes its guests in the open kitchen of the hotel and tells them about the water shortage of the island, about the hotel's waste avoidance policy, about how the waste is separated and how guests can help the hotel. The Petit Alaro sells local drinks in deposit bottles, beer on draught, wine from casks and asks guests to refrain from drinking bottled water and instead always fill a water bottle at the in-house filter system.

Municipal Waste Management Mallorca

Some municipalities in Mallorca are already using waste bins that monitor weight with intelligent chips. If hotels sort correctly and avoid waste, they pay less. On the other hand, the municipality also saves money because it has to pay fewer fees to the waste treatment plant. It is important not only to introduce customised systems for hotels in order to create incentives for correct waste separation and reduction. In two years' time, this system will be introduced on all islands.

Composting systems have already been set up in some places on the island of Mallorca. One service the municipalities offer is to train hotel employees (especially kitchen staff) in how to correctly separate organic waste. They explain which food leftovers are suitable and which materials may not be disposed of in organic waste under any circumstances. The organic waste is collected daily from the hotel by the municipality. The resulting compost is made available to the participating hotels for reuse (for example in the hotel gardens) or to the island's farmers. The system is not yet available on the whole island.

Futouris e.V.: "Plastic-free holidays" initiative, Balearic Islands

The aim of the current industry project of the member companies of Futouris e.V. in cooperation with the government of the Balearic Islands is to reduce and improve the recycling of plastic waste from tourism on the Mediterranean islands. Together with the participating tour operators, hotels, ministries, local NGOs and waste management companies, practical pilot measures will be developed and tested. Through the development and implementation of support materials for communication, holidaymakers are informed about the initiative and motivated to make their own contribution. After successful testing in the pilot companies, concrete recommendations for action, best practice examples and proposals for alternative, plastic-free products and processes are provided for the industry in order to popularise the solutions.

Alua Hotels and Resorts, Spain

The hotel group organises in-house activities such as beach cleaning to raise employee awareness about plastic pollution in the seas and to motivate them to avoid disposable plastics.

Hotel Luz del Mar, Tenerife

In the hotel complex of the tour operator Wikinger Reisen, no preportioned packs with shampoo or shower gel will be available in the guest rooms starting in autumn 2019. Guests will also no longer find "vanity packs" with combs and toothbrush sets in plastic packaging. Instead, there will be refillable dispensers with eco-certified products in both the baths and the sauna area to eliminate the possibility of microplastics.

The guests are informed about the waste avoidance policy of the hotel upon arrival, but also upon booking. The hotel asks guests who prefer to bring their own products to use returnable bottles to reduce plastic waste caused by tourists.

If guests still have disposable packaging in their suitcases, the hotel will ask the guests to take the packaging home again at the end of the trip, highlighting the poor recycling rate in Tenerife.

Hotel Sovrana, Rimini

Here, too, the hotel informs its guests about the quality of the hotel's drinking water. An investment was made in a water treatment system. The water dispenser in the restaurant is available to the guests so that PET water bottles are no longer necessary. In the outdoor and spa areas, the hotel has switched to returnable plastic glasses (for all drinks including wine, sparkling wine and water). The guests know what's behind the measure and are happy to participate!

Travel Without Plastic, International organisation

Founded in 2017, the organisation sees itself as a source of advice and information on how to avoid plastics in tourism. It supports tour operators and hotels with in-depth expertise and offers practical tools for avoiding disposable plastic and packaging. The aim of Travel Without Plastic is to protect the environment, but also to reduce costs and motivate guests and employees to participate. The organisation is already working with a number of companies, authorities and NGOs to stop the flood of plastic in the tourism sector.

2.5 So-called alternatives – possibilities and risks of substitution

Replacing disposable plastic products with other materials

Many hotels replace disposable plastic with disposable products made of other materials. This strategy is linked to legal requirements like the EU's Single-Use Plastics Directive (see section 1.2 EU legislation) as well as to the belief that other materials are generally more environmentally friendly than plastics.

There is often insufficient knowledge about the actual impacts of the materials on nature and the environment. Short-term measures are undertaken, which at first glance appears to improve the situation, but in the long run does not solve the waste problems and pollution.

Reduse – reuse – recycle

If the principles of the waste hierarchy are followed, the highest priority is to avoid using a resource. This applies equally to plastics and other materials such as paper, bamboo or wood as well as biobased or biodegradable plastics. A large number of renewable agricultural raw materials such as corn, sugar cane and potatoes are used for biobased plastics.

Especially in the case of items like disposable cups or pre-portioned packs for guest food services, there are many possibilities for avoidance. Other materials do not have to be used at all to replace single-use plastics.

If avoidance measures are not possible, some aspects must be taken into account when evaluating alternatives for packaging materials or disposable products. Various indicators play a role here, such as ...

» **The use of renewable raw materials:** a fossil raw material such as petroleum oil is replaced by a renewable raw material. This is the case, for example, with bioplastics or paper.

» **The use of recycled material:** materials from recycling, such as waste paper or recycled plastic, are used partially or proportionally. For many recycled materials, there are quality seals, e.g. EUcertPlast for plastics made from recycled materials at EU level[64] and the Blue Angel in Germany[65] and FSC Recycled[66] internationally for recycled paper.

» **The improvement of resource efficiency:** packaging is designed in such a way that less material is required for the same purpose.

» **Recyclability:** packaging or other products are designed in such a way that as much pure material as possible can be recovered during sorting and recycling. The contents used do not negatively affect recycling.

» **The contents:** no additives or dyes harmful to the environment or human health are used.

» **The life cycle assessment indicators:** the ecological footprint can be determined for certain parameters (e.g. climate change, demand for raw materials or eutrophication). Within the context of a life cycle assessment, it is possible to determine in quantitative terms which of the packaging alternatives has a lower environmental impact for the individual parameters. One example of this is the life cycle assessment of beverage packaging.

If these indicators are used as the basis for an assessment, it can be concluded that even though a reusable cotton bag is made from a renewable raw material, the poor life cycle assessment of cotton production (water consumption) means that it only scores better as a shopping bag than a disposable plastic bag after about a hundred uses.[67]

A single-use beverage carton can score just as well as a returnable bottle in the life cycle assessment.[68] However, since wood is used, the wood fibres used for the beverage carton should come from FSC-certified forestry (see "Examples of certification schemes").

The assessment of packaging or products using these indicators can lead to conflicting objectives. Multilayer packaging, for example, can be efficient in terms of resources, but difficult to recycle. Bioplastics generally perform better in the life cycle assessment in the category of climate change than fossil-based plastics, whereas their performance in the parameter of eutrophication is often worse.[69]

The illusion of bioplastics

The term 'bioplastics' is generally used to refer to biobased and biodegradable, biobased and non-degradable plastics and for biodegradable plastics from fossil sources. What differentiates plastics is the degree to which they are biodegradable, as can be seen in the diagram below.

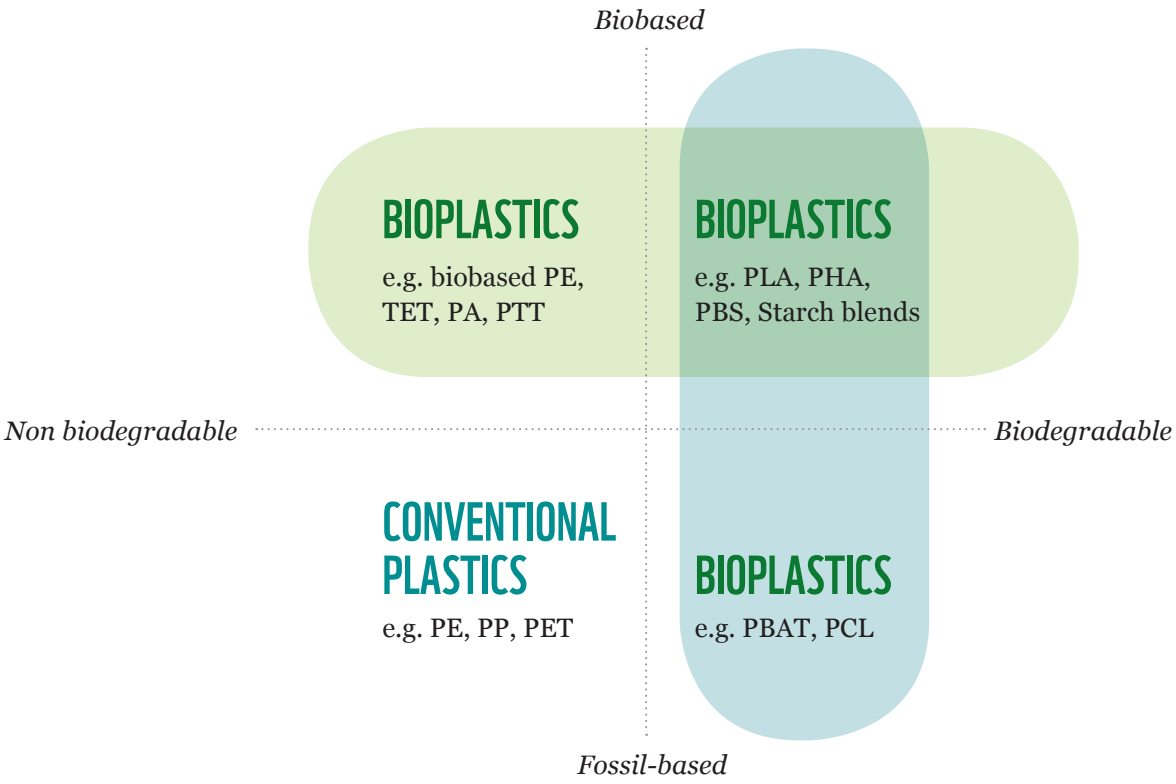

Figure 12:
Bioplastics and "conventional" plastics with examples[70]

As can be seen from the diagram, the origin of the raw material does not provide any insight into its degree of biodegradability. For example, in some cases, a fossil-based plastic is biodegradable and a plastic consisting of renewable raw materials is not. Unfortunately, the terms are also used synonymously. It is therefore important to clarify in advance which type of plastic is being referred to.

Renewable raw materials are substances that originate from living matter and are used by human beings for purposes other than food and animal feed.[71] Biodegradable materials can be produced from both renewable and fossil-based raw materials or from combinations of both.

Composting of bioplastics

The extent to which biodegradable materials are actually completely decomposed depends on general conditions such as temperature and humidity. Industrial composting takes place in the composting plant in controlled ambient conditions. Standards and quality seals certifying the compostability of a material refer in most cases to the ambient conditions of industrial composting.

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The physical conditions for composting in private households are not controlled, so that in some cases the conditions necessary for the decomposition of bioplastics (e.g. temperature) are not achieved.

When it comes to selling the compost, its quality plays an important role. The Bundesgüteverband Kompost, Germany's association for compost quality, is against disposing of bioplastics in the organic waste bin. One reason given is that bioplastics do not significantly benefit the compost, since bioplastics do not completely decompose and do not enrich the compost with humus and plant nutrients.[72] This also applies to household composting. In addition, the decomposition periods in German composting plants are too short for biodegradable plastics to completely decompose and it is very time consuming to sort non-biodegradable materials. In the composting plants, all plastics are removed and incinerated as residual waste.

In order to reduce the volume of microplastics that end up in the environment through compost, plastics, regardless of whether they are biodegradable or not, should never be put in the organic waste bin. But it's not allowed in plastic and packaging bins either! So it ends up in residual waste at a landfill or gets incinerated.

Biodegradable plastic ends up in a landfill or is incinerated

Conclusion: bioplastics do not belong in organic waste bins (which also exists in the Mediterranean countries). But it is also difficult in the case of the other categories. Currently, bioplastic may only be disposed of in residual waste bins. It then ends up either in landfills or is incinerated.

When considering life cycle assessment factors, however, incinerating bioplastics is preferable to composting. An IFEU study concludes that, with regard to the bioplastic PLA, incineration is preferable to composting or fermentation taking into account various life cycle assessment factors.[73] A study conducted by Carbotech AG (Switzerland) in which various biobased materials were investigated came to the conclusion that in seven out of eight materials examined, biodegradability did not lead to a significant ecological advantage. This is due to the advantage of generating energy by burning these materials and the non-existent advantage of supplying humus or plant fertiliser in the decomposition of bioplastics.[74]

The question of the sustainability of bioplastics is a controversial one. Issues here include the land required for farming raw materials, the use of genetically modified organisms and the various environmental impacts of agriculture, such as water consumption, the use of pesticides or fertilisers.

Certain testing and certification schemes have developed sets of criteria to take account of these factors and enable more sustainable production of raw materials from forestry or agriculture. These include the FSC for wood-based products or RSB or ISCC Plus for agricultural raw materials (see “Examples of certification schemes”).

It is not advisable to use other materials from renewable raw materials (such as paper, wood, corn, bamboo, etc.) or bioplastics as a future solution to avoid conventional plastics. Avoidance of packaging and disposable items must therefore be the absolute priority.

It only makes sense to replace plastic products under specific conditions if …

1. It is not possible to avoid a single-use item or packaging

2. It is not possible to replace it with a reusable solution

3. The production of the alternative material does not have a higher overall environmental impact (e.g. through the massive use of fossil fuels) than conventional plastics

4. The production of renewable raw materials has been inspected by an appropriate certification scheme (see “Examples of certification schemes”)

Correct disposal is guaranteed in accordance with the waste management systems of the respective countries. Certain countries ban biodegradable plastics in the organic category. Before introducing alternative materials, it is therefore necessary to assess which disposal method is the right one.

The goal cannot be to legitimise pollution with waste by using biodegradable plastics. This message is completely wrong and can have fatal consequences and even cause more plastic pollution.

Examples of certification schemes for more sustainable sourcing of renewable raw materials

FSC

FSC® stands for Forest Stewardship Council®. This is an international certification scheme for more sustainable forest management and can be used for packaging made of wood or paper. The wood comes from forests that are managed more responsibly. There are ten globally valid principles that must be complied with by all FSC standards in the various countries. FSC-certified forests and plantations are managed according to stricter environmental and social principles. This is intended to help ensure that the forests can be preserved in the long term.

Further information: fsc.org/en

RSB

The Roundtable on Sustainable Biomaterials (RSB) is a global, multi-stakeholder, independent organisation that promotes the development of a new world of bio-economy through sustainability solutions, certification and collaborative partnerships. It aims to contribute to achieving the UN's Sustainable Development Goals and has a global certification standard for sustainable biomaterials, biofuels and biomass production audited by experts.

Further information: rsb.org

Bonsucro

Bonsucro is a global non-profit organisation dedicated to promoting sustainable sugar cane production, processing and trade around the world. Bonsucro supports a community of more than 500 members in over 40 countries from all parts of the sugar cane supply chain, including farmers, millers, traders, buyers and NGOs.

Further information: www.bonsucro.com/what-is-bonsucro

ISCC Plus

ISCC-PLUS is a sustainability certification scheme for food and animal feed as well as technical and chemical applications (e.g. bioplastic) and bioenergy (e.g. solid biomass). ISCC-PLUS is applicable worldwide for all phases in the supply and production chain.

Further information:
www.controlunion-germany.com/en/iscc-plus-certification

Our goal: holidays without waste

Stop the flood of plastic

3.1 Recommendations for the tourism industry

3.1.1 Recommendations for hotels

Reduce – reuse – recycle

This basic strategy should be the top priority in your hotel.

Reduce: Many of the disposable products and packaging are not necessary to keep guests happy in hotels. Get rid of them. Avoidance has immediate positive financial and environmental consequences for the hotel.

Reuse: Follow the principle “multiple-use not single-use”. Plastic products are often hygienic, safe and easy to handle. In cases where plastic products or packaging offer clear advantages, you should rely on reusable items. Switching to alternative materials for single-use products does not reduce the volume of waste!

Recycle: Ensure that unavoidable plastic waste is collected and disposed of separately in your hotel to the extent possible. Make sure that the separated waste is actually recycled by the categories available in the region.

Create a waste inventory

A structured process ensures that waste is effectively avoided in the hotel. Only the people who know where disposable plastic products are used and how they become waste can systematically reduce the volumes produced.

Proceed systematically in all areas of your hotel and answer the following questions:

» What disposable products are purchased and what disposable packaging do you produce in the individual areas of your hotel?
» How are they used further and what happens to them?
» Which disposable products and packaging can be eliminated and which can be replaced by multiple-use alternatives?

Also implement the following measures:

» Record the plastics used and waste volumes as part of a monitoring process.
» Ensure that waste is separated and collected at a minimum by the categories available in the regional waste management systems.
» Establish an effective internal waste collection system to achieve the highest possible rate of waste separation.

Set goals for your hotel and monitor their implementation and success at regular intervals!

Take advantage of every opportunity to communicate your measures. The more your staff, guests, suppliers and service providers know about your efforts, the more actively they can participate in implementing your strategy.

Avoid disposable plastics when purchasing products

Single-use packaging can be avoided in the entire procurement process. The alternatives are multiple-use containers and packaging-free products. Give priority to these products whenever possible. Avoidance, not replacement, should be the focus of your decisions when purchasing products.

Actively search for suppliers who offer multiple-use transport packaging. Whether plastic crates for unpackaged fruits and vegetables or drinks in deposit bottles – many disposable plastics can be replaced by reusable packaging.

Inform and train your employees

The employees of your hotel are not only needed for the implementation of the measures, they are role models and competent contacts for your guests.

Involve your employees in the development of the measures. Train them in the proper use of packaging and disposable products. Your hotel's avoidance strategy should be practised by all employees.

Play an active role with your hotel in campaigns, competitions and events on the subject of waste avoidance and reduction of plastics in your region. Your hotel, your employees and your guests can benefit from new knowledge and new skills.

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Inform and involve your guests

As a host to tourists from different countries and cultures, you have the opportunity to actively involve your guests in your waste avoidance strategy. Providing information about your efforts to reduce plastic waste in your hotel motivates your guests to actively contribute. Also inform your guests about the effects of plastic waste in your region and highlight the link between your efforts and a clean holiday destination. Well-informed guests are willing to accept measures and will not perceive them as a service downgrade.

Get actively involved in your region

Communicate your efforts to other hotel managers in your region. It has been shown that cooperation between hotels, tour operators, local tourism associations and NGOs can help to bring about larger projects in a region. With cooperation of this kind, regions can establish themselves as sustainable tourism destinations.

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Joining ranks with other stakeholders strengthens the influence on municipal and supraregional decision-makers if the structures for separate collection and recycling are lacking. Work actively to improve the infrastructure in your region. The same applies to asking suppliers to provide sustainable products and services. With information campaigns developed together in a partnership, you can reach a larger audience: more tourists and more people from the region.

3.1.2 Recommendations for tour operators

Require minimum standards for partner hotels

Tour operators can influence their partner hotels by setting certain minimum requirements for waste management and avoidance. This can focus hotels' attention on the issue of reducing and avoiding plastic waste and increase awareness and the willingness to implement measures.

Tour operators are important advisers and catalysts when it comes to the choice of measures. They can support their partner hotels in implementation, for example, in the selection of suppliers or the search for sensible multiple-use alternatives.

Tour operators can take advantage of expert external advice and pass it on to their hotel partners. For example, with regard to the correct choice of alternatives and implementation of the environmentally friendly avoidance hierarchy.

Inform your customers, raise awareness of employees and tour guides

Customer information: Even before the trip begins, the tour operator can inform customers about the waste situation, waste management and the most recent legislation in the holiday resort and also about what each individual traveller can do to improve the situation.

In travel catalogues, on websites or in the relevant travel documents, information on reducing plastic waste can be added and the various initiatives and measures already implemented by the tour operator can be highlighted (e.g. beach cleaning activities, plastic-free excursions and tours, water dispensers for guests in partner hotels, no disposable products in all hotel areas, etc.).

Employees: As with hotels, it is essentially the employees of tour operators and travel agencies who implement the corporate strategy and put this strategy into practice with customers and partners. In this case, too, integration, information and regular training are important.

Tour guides: The tour guides in the destination are an important mouthpiece and are knowledgeable about the holiday region. Tour operators can train their tour guides to explain the local problems caused by plastic waste to the tour group on the tour or at relevant informational events. Tour guides can also pass on important tips on waste avoidance to the guests and describe the activities of the tour operator and the hotel.

Exert your influence beyond your hotel and form strategic alliances

The local hotels need support and an influential and determined ally to implement medium-term improvements in waste management in the holiday regions.

Use your influence on local and national decision-makers to modernise the local waste infrastructure and maintain a sustainable and attractive tourism destination. Only in cooperation with hotels, tourism associations and local NGOs can strategically influential alliances be formed and changes brought about.

3.1.3 Recommendations for tourists

Choose responsible accommodation

By carefully selecting a trip, you as a guest can help to preserve the appeal of your travel destination. Choose accommodation that meets sustainability criteria. Your selection validates the efforts of the hotel operators and motivates other hotel operators to step up their commitment.

Find out about the waste situation at your holiday destination and your hotel's waste avoidance strategy

Ask your tour operator, accommodation provider, tour guide or local tourist information office about the regional waste situation of your chosen holiday destination.

In many Mediterranean regions, the waste infrastructure is overwhelmed in the summer months, landfills do not meet legal standards and recycling rates are very low. The result is litter on the beaches and in the water. So there are many reasons why guests should be particularly careful with waste and avoid producing it whenever possible.

When you arrive at your hotel, ask about the hotel's waste management concept and how you can help to support it.

Find out more about the quality of tap water in your holiday region

The most common plastic waste found on holiday beaches is disposable plastic bottles.

Drinking water is often offered in these bottles because guests are frequently suspicious of the quality of tap water in the Mediterranean countries. This is by no means the case everywhere. Find out about the quality of tap water and refill stations at the hotel or destination.

Avoid disposable plastics and unnecessary packaging during your stay: in the hotel, on the beach and on the go.

When certain products and services are not offered on holiday, this does not necessarily mean less comfort or a service downgrade. The greatest luxury on holiday are clean beaches and seas and an intact landscape. This is why you should consciously avoid single-use products such as water in single-use plastic bottles, drinking straws, pre-portioned toiletries, etc. Actively request alternative multiple-use items in your accommodations.

Avoid disposable plastics not only in the hotel, but also in the surrounding cafés, bars and shops and on the beach. Take your own bag with you when you go shopping. Give preference to unpackaged items and don't frequent fast food stands or restaurants that serve food and drinks only with disposable plastic dishes.

When visiting the beach, make sure that parasols, inflatable animals, beach toys, sun shelters and other "durable" plastic products are always protected from being blown away by the wind and do not leave these items unattended. If they are no longer needed after your holiday, make sure that they can be reused and are not thrown away immediately.

Use sun creams and cosmetics without microplastics.

If waste separation is not offered on the beach, take your waste back to the hotel for proper separation and disposal. Be a role model for other beach guests.

Lending station for beach cutlery for guests.

3.2 The role of sustainability certificates in tourism

The interest in certifications for tourism companies has increased considerably in recent years. For example, the number of tourism companies awarded the Austrian Ecolabel has steadily increased, while the number of accommodation establishments has risen by around 25 per cent over the past ten years.[75] More and more tour operators are recognising the value of quality certification. In the meantime, providers are actively asking for certified companies and flagging them accordingly in their catalogues. Booking portals are also increasingly flagging sustainable offers with a quality seal.

The independent Global Sustainable Tourism Council (GSTC) sets globally uniform standards with its criteria as guiding principles and minimum requirements for the assessment of sustainable tourism companies or destinations. The leading certification programmes for sustainable tourism adapt their assessment standards to these criteria and are audited and recognised by the GSTC.

The companies certified with a strict sustainability seal – ideally recognised by GSTC – are pioneers in sustainable corporate management and make a significant contribution to sustainable tourism development.

Certification requires companies to systematically engage with all sustainability issues and implement numerous measures. As a result, they have also made more progress in waste management and plastics avoidance than your average company. A study conducted by the Austrian Ecolabel has shown, for example, that companies that have implemented the ecolabel have reduced their residual waste on average by more than 15 per cent and plastic waste by almost 22 per cent.[76]

More specific requirements of certification schemes to avoid plastics

The issue of plastic avoidance is still treated very differently, and tourism certification programmes are not clear about requirements. In this study, the (publicly available) information from 15 environmental/sustainability certificates[77] was analysed with regard to plastic avoidance and potentially appropriate requirements. It found that almost all labels have requirements related to guest information, employee training and waste separation, which often include monitoring. However, these requirements are usually very general, and how plastic should be handled is rarely explicitly addressed.

Criteria for hotels to avoid single-use plastics and plastic packaging

The following proposals for the avoidance of plastic waste have been developed on the basis of lessons learned and the findings of the analysis. The criteria outlined here are to be understood as minimum requirements which should be included as mandatory or optional measures to be implemented in all certification programmes.

Monitoring and management of plastic waste

The hotel regularly collects the waste that accumulates and establishes quantifiable measures to reduce or avoid disposable plastic products and packaging. The hotel ensures that waste is collected and recycled separately in accordance with national or regional legislation, but at least in four categories. The separated waste is separated and recovered by regional/national waste facilities or (if not available) by private facilities.

Example Green Key:
Criteria 6.1 and 6.2[78]

6.1 In order to promote the reuse and recycling of waste, the establishment separates the waste [...] in a minimum of three categories.

Examples of the types of separated waste are paper, cardboard, metal, cans, glass, plastic, bottles with refund, organic waste, garden waste, cooking oil, etc. [...]

Besides the separation of waste, the establishment is encouraged to reduce the amount of waste, e.g. by having agreements with suppliers on the collection and reuse of material used for receiving food and beverage products [...].

It is strongly encouraged that the establishment ensures that as much as possible of the separated waste is recycled/reused. [...]

6.2 The separated waste must be handled separately by the local or national waste management facilities, by a private entity or by the establishment's own facilities.

[...] During the audit, the establishment presents the contract(s) with the public and/or private waste handling authorities regarding the handling of the waste in separate categories in connection with the pick-up and subsequent handling of the waste. [...]

Avoiding plastic when purchasing consumer goods and supplies

The hotel reduces or avoids disposable plastic products in the entire procurement process and switches to reusable or low-packaging products. If no reusable packaging is available, large containers are given priority. The hotel gives preference to certified cosmetic products without microplastics – if available.

Example GSTC:
Criterion and indicators D1.2[79]
Efficient purchasing
The organization carefully manages the purchasing of consumable and disposable goods, including food, in order to minimise waste.

(a) Purchasing favours reusable, returnable and recycled goods.
(b) Purchasing and use of consumable and disposable goods are monitored and managed.
(c) Unnecessary packaging (especially from plastic) is avoided, with buying in bulk as appropriate.

Staff training

All employees in the hotel are regularly trained in waste avoidance and separation, especially in the area of disposable plastics. They consistently practise the established measures.

Example EU Ecolabel:
Criterion 2[80]
"The tourist accommodation shall provide information and training to the staff [...] to ensure the application of environmental measures and to raise awareness of environmentally responsible behaviour in accordance with the mandatory and applicable optional criteria in this EU Ecolabel. In particular, the following aspects shall be included on the staff training: [...] waste reduction and separation actions in relation to disposable items and disposal categories;"

Raising guest awareness

The hotel informs its guests about how it reduces and avoids disposable plastic. Holidaymakers are encouraged through the hotel's activities and appropriate awareness-raising and communication measures to become active themselves and are encouraged to avoid plastic waste outside the hotel.

Example Austrian Ecolabel:
Criterion M06[81]

(a) Guests in tourist accommodation establishments must be informed [...] in particular of the following aspects: [...]

Waste (waste avoidance, waste separation, reusable packaging, elimination of small packages, etc.)

Regional activities

The hotel supports existing measures or, if necessary, initiates regional measures to reduce disposable plastic. The hotel ensures that the separately collected waste is sent to a regulated reuse or disposal facility and, if necessary, supports the establishment of a collection and recycling system. Disposal has no negative impact on the local residents and the environment.

Example Green Key:
Criterion 6.3[82]

To lower the environmental footprint and save money, the establishment can enter into cooperation with other establishments on joint transportation of the separated waste, if it is done without compromising the subsequent treatment of the separated waste. During the audit, the establishment [...] presents the standard operational procedure on how it is done safely and without compromising the subsequent treatment.

Annex

1 Acknowledgements

We would like to expressly thank the experts and hotel operators for their participation and their open and friendly willingness to talk. All participating interviewees expressed a lot of interest in the issue. Their resolute commitment underscored the responsibility for the interests of their respective destinations.

We were able to gain very helpful insights from the conversations and discussions we had.

Participating hotels and experts

Italy

1. Federation of Italian Hotels & Tourism Associations, Federalberghi (Roma)
2. ISPRA, Instituto Superiore per la Protezione e la Ricerca Ambientale (Roma)
3. COREPLA, National Consortium for the Collection and Recycling of Plastic packages
4. Gruppo Hera
5. Hotel Sovrana, Rimini

Spain

6. Directorate-General for Environmental Education, Environment and Waste Policy of the Balearic Islands
7. Save The Med Foundation, Mallorca
8. ALUA Hotels & Resort, Mallorca
9. Hotel Cala Santanyí, Mallorca
10. Petit Hotel Alaro, Mallorca
11. RIU Hotels & Resorts
12. Barceló Group
13. Ilunion Hotels
14. Accor Hotel Pullman Barcelona Skipper

Greece

15. Castelli Hotel, Zakynthos
16. The National Marine Park of Zakynthos (N.M.P.Z.), Zakynthos
17. Bitzaro Grande Hotel, Zakynthos
18. Atlantica Eleon Grand Resort and Spa, Zakynthos
19. Villa KaliMeera, ReNatour, Corfu

France

20. Riviera Marriott Hotel La Porte de Monaco, Nice

International

21. Travel without Plastic

WWF

22. WWF Mediterranean Programme
23. WWF Greece
24. WWF France
25. WWF Italy

2 Description of the interview method and process

The study included qualitative interviews with hotel operators, experts from NGOs, regional and local authorities and representatives of waste management companies from selected holiday destinations including Mallorca, Nice, Rimini, Zakynthos and Corfu. Guides with open questions were used to conduct the interviews.

Most of the interviews were conducted in personal phone calls and during on-site visits.

The semi-standardised interview form helps to compare the views of the interviewees. No strict sequence of questions was set during the interview. To ensure that the interviews could be compared, the interviewees were all asked the same questions. The interview form also made it possible to use ad hoc questions that arose from the respective interview situation. It was therefore also possible to capture special content and aspects that were not part of the guideline but were relevant for the research topic.

Deliberate sampling was applied to the qualitative research. This means that different hotel experts were selected according to criteria such as hotel size, affiliation with a hotel chain, activities in the environmental sector and target group in order to guarantee a sample with as much contrast as possible. In addition, expert interviews were conducted with a similarly broad range of stakeholders to shed light on the research topic from different perspectives.

One group interview was conducted with three hotel representatives simultaneously from Spain and the Balearic Islands, all other interviews were conducted in an individual setting. The interviews were conducted, collated and evaluated by employees of the Institute of Waste Management at the University of Natural Resources.

Selective transcription was chosen to document the data material. Only the sections relevant to the research topic were transcribed and not the entire interview. This procedure is already an initial interpretation of the data material. The qualitative content analysis method was chosen for data evaluation.[83] More precisely, content structuring analysis was chosen as the method to reduce the data for the evaluation of the interviews.[84] It became possible to compare the interviews by systematically categorising and summarising the transcribed passages.

3 Interview guide for hotels

Introduction and presentation. (10 min)

Welcome to the discussion of "Avoiding plastic waste: how can hotels contribute?" Today we would like to talk to you about how hotels can avoid plastic waste, which measures have already been implemented, which measures are still possible and what experience hotels have had in implementing these measures. However, we are also interested in where you encountered problems and obstacles during implementation and which measures you were not able to implement and why.

Introductions (name of the hotel, size, category, function, certification, clientele)

As a way to get started, I would like to ask you to discuss measures that are already being implemented in your hotel to reduce plastic waste. (20 min)

In which areas are measures already being implemented? What measures are involved and how are they implemented? What experience have you had with implementation (economic, workload, legislative, guest, employee)? How long have hotels been implementing measures, is there a trend towards more measures? Have there already been measurements or records, performance reviews? How do other hotels see the situation?

What prevents hotels from implementing waste avoidance measures? What hurdles have to be overcome? What strategies have hotels developed to overcome obstacles? (20 min)

Are there laws and guidelines that prevent the avoidance of plastic waste? What are the difficulties in collecting and separating waste? Are there any internal group guidelines or certification guidelines (e.g. stars?) that prevent or support the avoidance of plastic waste? Are there any measures that had to be reversed? What role do financial and labour costs play in the implementation of measures? What is lacking, what kind of support would you like?

Presentation of individual measure scenarios and discussion of their practicability. (60 min)

I would like to present to you some measures which we consider to be particularly useful. I would be interested to know what you think of these measures. Are these measures already implemented in your hotel and, if so, how? Can this type of measure be implemented and if not, why not? Would you consider a measure of this kind? etc.

A) Kitchen (preparation of meals)

» Use mainly regional and seasonal products for food preparation. Plastic packaging can be reduced due to the short delivery routes. Ask your direct supplier for unpackaged goods or find a solution for the return and reuse of transport containers. Local and regional dealers and suppliers can be more easily motivated to supply their products in returnable or reusable containers.

» Prepare dishes with fresh ingredients. Compared to convenience products, you can save large amounts of packaging waste.

» Also use beverages (except wine and spirits) in the kitchen mainly in reusable containers and try not to use disposable PET and composite packaging. If your supplier does not offer reusable containers, express your interest and request them more often.

Which measures have already been implemented and to what extent? Where do the difficulties lie? What products do suppliers offer? Are there ways of exerting pressure on suppliers through hotel partnerships? Can you think of any additional measures?

B) Housekeeping/rooms

» Avoid disposable packaging for toiletries in guest rooms (packaging of cotton swabs or shower caps, plastic packaging for bar soap) and pre-portioned packaging for hygiene products (shower gel, shampoo, conditioner, body lotion). Instead of single-use toothbrush cups or towels, offer reusable alternatives.

» Also offer drinks in returnable containers (except wine and spirits) in the rooms. If the quality of the drinking water allows, encourage guests to consume tap water by providing carafes and glasses in guest rooms. Alternatively, you can offer guests drinking water in returnable bottles in the rooms or install water dispensers with refillable water bottles in the public areas. Avoid PET bottles if possible.

» Do not use food in pre-portioned packs or disposable dishes in guest rooms. If disposable dishes cannot be avoided, use paper, cardboard or wood alternatives.

» Give preference to filter or sieve machines over capsule and pad machines to make coffee in guest rooms.

» Eliminate individually packaged consumer goods (give-aways, souvenirs etc.) in guest rooms.

» Replace plastic bags with reusable alternatives.

» Use alternatives made of fabric or paper instead of plastic packaging for the laundry service of your hotel.

Which measures have already been implemented and to what extent? Where do the difficulties lie? To what extent can tap water be used? Are there any concerns about guest satisfaction? Which products are offered in the rooms and why? Is there a mini-bar and how is it equipped? How is waste separated in the rooms? Has the composition of the waste in the rooms been analysed? What products do suppliers offer? Are there ways of exerting pressure on suppliers through hotel partnerships?

C) Service/bar/outside area/catering/administration

» Serve beverages (except wine and spirits) mainly in reusable containers and try not to use disposable PET and composite packaging. If your supplier does not offer reusable containers, express your interest and request them more often. If possible, provide guests with information about the quality of the drinking water. Encourage guests to consume tap water and install water dispensers with refillable water bottles in public areas. Offer tap water free of charge with meals.

» Use bulk food from large containers/dispensers instead of pre-portioned packs. If possible, purchase non-perishable food unpackaged or not individually shrink-wrapped (e.g. tea). Serve the coffee directly to guests or make filter or sieve machines available.

» Instead of disposable dishes, use reusable tableware or alternatives made of paper, cardboard or wood. Avoid disposable consumer goods such as straws, stirrers or coasters or use alternatives made of paper, wood or reusable goods.

Which measures have already been implemented and to what extent? Where do the difficulties lie? What products do suppliers offer? Are there any concerns about guest satisfaction? Which products are offered and why? Are there convenience products (e.g. snacks) that produce a lot of waste? Are snacks offered and in what form? Is the outdoor area (beach, pool) relevant? Do the hotels offer packed lunches for their guests and what do they look like? How relevant is the take-away area? How relevant are reusable alternatives in outdoor areas (pool and beach)?

D) Staff areas

» Switch from disposable to reusable dishes. Do not use disposable items such as straws, stirrers or coasters, or use only reusable alternatives. Only use reusable alternatives for other consumer goods for your employees.

» If you provide your staff with food and drinks, follow the criteria for your guests and do not use pre-portioned packs or disposable containers for your staff. Motivate them by providing a refillable beverage bottle, for example.

» Involve your employees in the implementation of the measures and train them on a regular basis. Implement all measures in these areas as well as in the guest areas. Monitor implementation and retrain if necessary.

Which measures have already been implemented and to what extent? Where do the difficulties lie? How do employees respond to new measures? What are the difficulties in training and implementing the measures by the employees? Are there any bonus programs for them? How are they involved in the development of new measures? Are there vending machines for drinks or snacks for the employees?

Finally, I would like to return to some aspects that have not been discussed much so far, but which are highly relevant for the avoidance of plastic waste in the hotel industry.

If not addressed:

» Is there a kind of waste inventory, waste management concept in your hotel? Are there any regulations or requirements for hotels that make a waste management concept mandatory?
» How is waste collected, separated and disposed of?
» How important is the spa/wellness area in the hotels and what does it look like? Which waste is produced here?
» In which hotel areas does plastic outer packaging still accumulate?
» How are guests informed about and involved in the measures?
» Does littering play a role?

Feedback round. (5 min)

Thank you for the time you have taken today to participate in this discussion. We will evaluate the information we collected anonymously. If a hotel would like to be mentioned by name as an example of best practices, I would like to ask you for a short e-mail indicating your consent.

Now I would like to give you the opportunity to provide some brief feedback and ask questions.

If you have any other questions or would like to add something, please do not hesitate to contact me.

4 Questionnaire for interviews with destination experts

I General questions about the situation in the destination

1. Please describe the major difficulties with waste and disposable plastics (whether packaging or products) in your region.
Please also describe the problems caused by littering.

2. What are the impacts on nature, the Mediterranean Sea, ecosystems and species?

3. What are the main causes of the problems?

4. What role does the tourism industry play? Waste management in the destination? Unregulated landfills?

5. Does the pollution also affect the tourism industry?
(i.e. polluted beaches and landscapes)

6. Does the government or the local municipality take action and, if so, how?

II Questions about the hotel sector

7. Today, high safety and hygiene standards have to be met in the hospitality industry. In addition, hotels try to make their guests as comfortable as possible during their stay. The use of disposable packaging and disposable plastic products is on the rise. From your point of view, which products and packaging most often make their way into the natural environment?

8. What can hotels do to prevent plastic waste from ending up in nature and the environment?

9. What measures are most commonly implemented by the hotel sector?

10. What do you think of these measures? Do they have any positive impacts on nature and the environment? Which measures do you think are most effective in reducing the use of single-use plastic products?

11. What obstacles do hotels face in the avoidance of plastic waste?

12. Sometimes regulations, laws and directives discourage hotel businesses from taking measures to reduce plastics and plastic waste. Are there any regulations or laws that require the use of disposable plastics?

13. Do guests have expectations that hotels have to meet?

14. How can guest be involved in the communication and implementation of correct waste separation and collection?

15. What would be necessary to increase willingness to implement measures in hotels?

III Questions about the local waste management system and policy in the destination

16. The local waste management system plays an important role in the reduction of waste. Do hotels practise waste separation by category? Are there gaps or shortcomings in this system?

17. Policymakers can effectively contribute to reducing single-use plastics and plastic waste. Policymakers can ban products or impose fees for certain products. Have these kinds of measures been tried and, if so, do you have any insights? What has been your experience with these measures?

18. What would be necessary at the political level to make the implementation of measures more attractive?

19. How can the tourism industry in the region contribute?

20. How can local and regional waste management systems be improved or what additional services from waste collectors and recyclers would be useful?

21. What is your biggest concern about plastic waste and plastic waste reduction in your region?

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Glossary

Amenities Products in hotels for guests such as pre-portioned shampoo bottles or body lotion, etc.

Avoidance hierarchy See waste hierarchy

Biobased plastics Plastics made entirely or partly from biomass like corn or sugar cane. The biobased content can be determined in polymers and products through testing and expressed as a percentage. The standards used are CEN/TS 16137 for polymers and EN 16785-1 for products.

Biodegradable plastics Biodegradable plastics decompose under certain conditions leaving only CO_2 and water. Biodegradation is heavily dependent on environmental conditions such as temperature and humidity. Standards such as EN 13432 have been defined for biodegradability and compostability.

Bioeconomy Economic system that uses biological resources and knowledge about biological systems for processes, products and services across all fields of application and economic sectors. Also describes transformation from a petroleum-based economy to a market economy in which fossil resources are replaced by various renewable resources.

Biofuels Fuels produced from renewable resources such as biodiesel or bioethanol.

Biogenic waste Organic waste, e.g. bio- or green waste from households and gardens.

Biomass production Generally speaking: the totality of all living things, including dead material. Energy use: all organic substances of vegetable or animal origin used as energy sources.

Bioplastics PLA A bioplastic made of polylactic acid (PLA) from renewable raw materials.

Decomposition periods Defined period of time that starts when waste begins to compost until it is completely composted.

Eutrophication The accumulation of nutrients in an ecosystem such as the “overfertilisation” of rivers with nitrogen or phosphorus.

EU Waste Framework Directive Directive of the European Community, which creates the legal framework for waste legislation in the Member States. It entered into force on 12 December 2008.

High-quality recycled materials Materials that can be processed and reused for many purposes. A high-quality material would be, for example, used plastic packaging that can be reused for food packaging after it has been cleaned (such as the PET bottles from the collection of deposit beverage bottles in Germany)

ISO 14040 This standard defines requirements for the creation of life cycle assessments. By setting standards for how life cycle assessments are conducted, the aim is to ensure that life cycle assessments meet equally high standards and are comparable with one another.

Landfilling The deposit of waste into a landfill, a distinction is made between unregulated landfills ("illegal dumping") and regulated waste landfills that meet certain environmental standards (e.g. base and surface sealing). In Germany, all waste and waste mixtures with organic content of more than five per cent must be treated in accordance with the provisions of the Deponieverordnung (German Landfill Ordinance).

Landfilling, unregulated Dumping of waste that does not comply with the standards for regulated landfills, such as existing base and surface covers or fences.

Landfill tax Tax for the disposal of waste that is assessed according to certain criteria (waste classification, weight). The landfill tax is often intended to provide certain incentives.

Life cycle approach to the assessment of environmental impacts Method for evaluating the environmental impacts of a product or service. The environmental impact of a product is captured and assessed starting from the extraction of raw materials through to its production and use all the way to the disposal of the product and the production waste.

Life cycle assessment Quantitative collection of data to assess the environmental impact of products or services. Life cycle assessments are used to compare different product systems such as beverage packaging. The ISO 14040 standard was created for life cycle assessments.

Material recycling facilities (MRFs) Facility in which waste or waste categories are further sorted and partially processed.

Microplastics Solid, water-insoluble plastic particles that are five mm and smaller. Microplastics are also divided into primary and secondary microplastics: primary microplastics refer to microplastic particles specially produced in small sizes and used in products. Secondary microplastics are produced by breaking down larger plastic parts, e.g. wear and tear from tyres, microplastic fibres that come loose from synthetic clothing (e.g. polyester) during washing or disintegration of plastic packaging or bottles.

Municipal solid waste (MSW) Solid waste from local communities. Municipal waste is waste from private households and similar establishments (such as waste generated in hotels).

Multilayer packaging Composite packaging consisting of several permanently attached layers of different materials.

Oxo-degradable plastic Plastics that quickly fragment after use. Metal ions are added to conventional polymers for this purpose. These plastics are not completely biodegradable.

"Pay as you throw" tariff A system of waste fees based both on the polluter and on the volume and weight of the waste

PET Thermoplastic plastic (polyethylene terephthalate – PET) from the polyester family. This plastic is often used, for example, for beverage bottles.

Polystyrene Transparent or foamed white plastic which is used for many purposes, e.g. as packaging material. Also abbreviated as PS.

Recyclate Processed plastic with defined properties that has already undergone one processing step in its lifetime.

Recycling Recovery processes to turn waste into products or materials.

Secondary market Market for raw materials originating from recycling of waste components.

Tetra Pak Beverage cartons, Tetra Pak is one of many manufacturers of beverage cartons. Beverage cartons usually consist of a layer of cellulose fibres and plastic on the inside, often an intermediate layer of aluminium is inserted.

"Vanity packs" Also vanity kit: small packaged cosmetic articles for hotel guests in their rooms. The small packages usually contain cotton swabs, cotton pads, nail files, etc.

Waste components Components of waste resulting from a waste separation process and assigned according to certain criteria, e.g. "biowaste" as a component of compostable waste or "packaging waste" as a component of used packaging.

Waste hierarchy The waste hierarchy describes a five-step process for how waste is handled. The order is 1. reduce; 2. reuse (e.g. by repair); 3. recycle; 4. other reuse such as for energy generation from incineration; 5. disposal such as deposit in a landfill.

Water treatment plant Facility where water is treated to meet special requirements. Chemical, physical and mechanical processes can be used for this purpose. Water treatment plants are used for both fresh water and wastewater.

Why we are here
To stop the degradation of the planet's natural environment and to build a future in which humans live in harmony with nature.

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