NOTE RAPIDE

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MANAGING TOURIST WASTE: ELEVEN EUROPEAN CITIES PROVIDING INSPIRATION FOR THE PARIS REGION

THE MANAGEMENT OF WASTE PRODUCED BY TOURISTS IS A CHALLENGE FOR MAJOR EUROPEAN DESTINATIONS, EVEN THOUGH THE HEALTH CRISIS AND ITS CONSEQUENCES HAVE TEMPORARILY PUSHED THE ISSUE INTO THE BACKGROUND. IN THE FRAMEWORK OF THE EUROPEAN URBAN WASTE PROJECT, ELEVEN CITIES HAVE TESTED A RANGE OF MEASURES AIMED AT IMPROVING WASTE MANAGEMENT PRACTICES – MORE SORTING, LESS PLASTIC, DOGGY BAGS IN RESTAURANTS, ETC. – THAT CAN PROVIDE INSPIRATION FOR THE PARIS REGION AS THE WORLD'S LEADING TOURIST DESTINATION AND HOST OF THE 2024 OLYMPICS.

9.4 million
TOURISTS IN THE PARIS REGION FROM JANUARY TO JUNE 2020 (-14.3 MILLION COMPARED TO Q1 2019)

European cities are among the world's leading tourist destinations. While tourism has a significant social and economic impact on these cities, it brings with it a number of negative external issues, in particular high levels of non-sustainable consumption of resources and production of waste. Compared to other cities, tourist centres face extra challenges relating to the prevention and management of waste because of their geographic and climatic conditions, the seasonal nature of tourist flows, and the specific characteristics of the tourist industry and of tourists themselves as producers of waste. In the framework of the European Urban Waste[1] initiative, eleven European cities popular with tourists are piloting a number of measures designed to prevent and reduce tourism-related waste: Copenhagen (Denmark), the county of Dubrovnik-Neretva (Croatia), Florence (Italy), Kavala (Greece), Lisbon (Portugal), the Nice metropolitan area (France), Nicosia (Cyprus), Ponta Delgada (Portugal), Santander (Spain), Syracuse (Italy) and Tenerife (Spain).

To achieve these objectives, the pilot cities were supported through the different project development phases by seven universities (Aarhus, Copenhagen, Delft, Lund, Las Palmas de Gran Canaria, Uppsala and Vienna) and eight consultancy firms, associations and public agencies – including ORDIF – in Belgium, Spain, France, Greece and Italy. A total of 27 partners were involved in the project. The Urban Waste project took place in two stages between June 2016 and May 2019.

Cover
Crowds on the Champ-de-Mars waiting for a concert in front of the Eiffel Tower.

left : View of Dubrovnik.

right : View of Nice.

First, the work aimed to allow the target cities to gain a better understanding of the quantity of tourist-related waste being generated and to identify useful prevention and recycling solutions. This groundwork made it possible to collect information in order to help define measures that might be developed. This is the aspect on which ORDIF – the waste management department at the Institut Paris Region – focused.

Second, the pilot cities committed themselves to building several of these measures into their waste management plans, and their implementation was assessed via a number of indicators defined by the consultancy firm Ambiente Italia.

TOURIST INFLUX AND WASTE

The seasonality of tourist flows, measured according to monthly bed-nights, was analysed by the University of Vienna (Boku) in parallel with the volume of waste produced each month by some of the pilot cities between 2013 and 2015. In most cases, tourist influx increases in July and August, for example in Ponta Delgada, Lisbon and Santander. In Lisbon, it should be noted, there is also a peak period in April. In contrast, tourist inflow is relatively continuous in Tenerife, which hosts large numbers of visitors throughout the year[2] and where tourists account for 52% of the population (see graph on the next page).

The production of residual waste follows tourist inflows in Santander and Ponta Delgada, but the peaks are less pronounced. Where separately collected recyclable materials are concerned, there is almost no correlation with the number of bed-nights. In Lisbon, however, there is a significant reduction in residual waste in high season. Recyclable waste and organic waste present similar variations. One explanation for this is that a large number of Lisbon residents go on holiday in August. In Tenerife, the production of residual waste follows tourist inflow, although the curve is less pronounced. The same goes for separately collected recyclable materials.
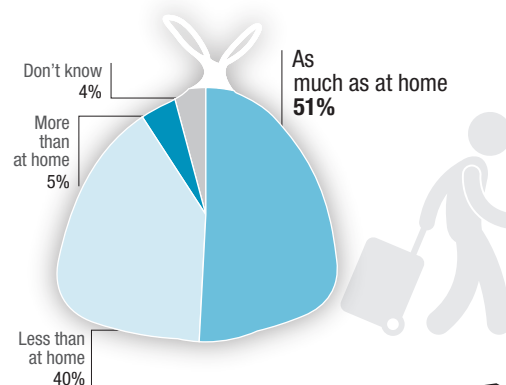
The 11 pilot cities

Copenhagen

Santander

Nice

Florence

Dubrovnik

Kavala

Lisbon

Ponta Delgada

Syracuse

Nicosia

Tenerife

12 participating countries   **11** pilot cities

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Source: URBAN-WASTE

Do tourists care about waste?

Don't know
4%

More than at home
5%

As much as at home
51%

Less than at home
40%

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Source: URBAN-WASTE

Waste production and monthly bed-nights, 2013-2015

Santander

Waste production (tonnes) — Bed-nights

Ponta Delgada

Waste production (tonnes) — Bed-nights

Lisbon

Waste production (tonnes) — Bed-nights

Tenerife (Adeje, Arona and Puerto de la Cruz)

Waste production (tonnes) — Bed-nights

— Glass — Mixed metals and plastics — Organic Waste
— Paper and cardboard — Residual waste ▨ Bed-nights

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Source: URBAN-WASTE

HOW DO TOURISTS MANAGE THEIR WASTE?
It is widely believed that tourists on holiday are less careful about waste consumption and management than they are at home. How true is this?

As part of the project, a poll in the form of a questionnaire was carried out by the consultancy firm Consulta Europa and the Universities of Delft and Copenhagen in 2016 and 2017 in the eleven pilot cities, based on a sample of 617 tourists from 39 different countries. A majority of respondents – 51% – said that they behave just as they do when they are at home, and 5% even stated that they were more careful about waste when travelling. However, 40% said that they were less concerned about waste management and sorting when on holiday.

The results also show a mismatch between the intention to sort waste and the actual sorting of waste. When people were asked about different waste flows, they said they sort less when on holiday than at home, whatever the type of waste. And 17% of respondents even said they do not sort waste at all while on holiday (compared to 9% at home). The gap is widest where electronic, medical and organic

waste is concerned, which seems logical because these types of waste are less likely to be generated while on holiday. One of the reasons most frequently given for this failure to sort waste is the lack of information available on waste sorting procedures.

WASTE PRODUCTION IN THE PILOT CITIES
There are wide variations in per capita waste production that do not necessarily reflect the different geographical contexts of the pilot cities – the fact that they are on an island, in a coastal area, or in a highly built-up area.
Three groups can be distinguished. The first is comprised of Copenhagen, Kavala and Santander, which produce the lowest quantities of waste with less than 390 kg per capita. Nice and Ponta Delgada form the second group, with waste production close to the European average (480 kg per capita). The third group produces a larger amount of waste: 537 – 609 kg per capita. In parallel, Lisbon and more especially Copenhagen and Florence have high waste sorting rates: 13%, 18% and 25% respectively. These figures include waste produced by both full-time residents and tourists.

**TWENTY-TWO MEASURES IMPLEMENTED
TO REDUCE TOURIST WASTE**

During the initial phase of the project, the ORDIF suggested 22 measures relating to plastic waste prevention, improving sorting in tourist facilities, preventing food waste, organic waste management, and publishing multilingual guides to increase knowledge and awareness on sorting practices.

The measures were discussed in each pilot city in the framework of a participatory approach coordinated by the consultancy firm Consulta Europa, bringing together municipal authorities and their waste management departments, tourist professionals (travel agencies and tourist offices), service providers (hotels, restaurants and bars) and many other stakeholders into the «Communities of Practice» established in each pilot city.

The discussions took place in five rounds of conferences and workshops organised from May 2017 to May 2019. Each pilot city selected four to six measures to be implemented in the framework of a partnership agreement with local stakeholders. The final selection of measures was made according to their local value and their potential impact. They were implemented between May and September 2018, depending on the pilot city and the measures selected.

IMMEDIATE IMPACTS ON WASTE PRODUCTION[3]

To implement or improve waste sorting in tourist establishments, a total of 862 people were trained in 20 hotels and 121 restaurants in Lisbon, Nicosia, Tenerife (where waste production is high) and Ponta Delgada (which produces medium levels of waste).

Improved sorting made it possible to reduce residual waste by 12% in the three participating hotels in Lisbon. In Ponta Delgada, sorting led to the separate collection of 4,900 plastic containers, 4,471 paper containers and 5,300 glass containers in the 40 participating restaurants: all materials that would not have been recycled before.

Plastic waste prevention was implemented via two measures: replacing disposable products in hotels; and promoting the use of tap water by distributing reusable bottles and a map of public drinking fountains for tourists. The latter measure was implemented in Nice and Florence, and was supported by a large-scale communication campaign in the local media (TV interviews with political leaders in charge of waste, radio announcements and articles in the press) and via social media. Single-use products were replaced at hotels in Ponta Delgada, where participating hotels replaced soap and shampoo miniatures with wall-mounted liquid dispensers.

In five months, the amount of plastic waste fell by 1,350 kg in Ponta Delgada in the three participating hotels, which have 213 rooms in all. In Lisbon, the participating hotel with 169 rooms reported a 19% reduction in residual waste.

Where food waste prevention is concerned, several measures were put in place, sometimes in combination, in participating hotels and restaurants in Copenhagen, Florence, Kavala, Lisbon, Nice, Nicosia, Santander and Tenerife.
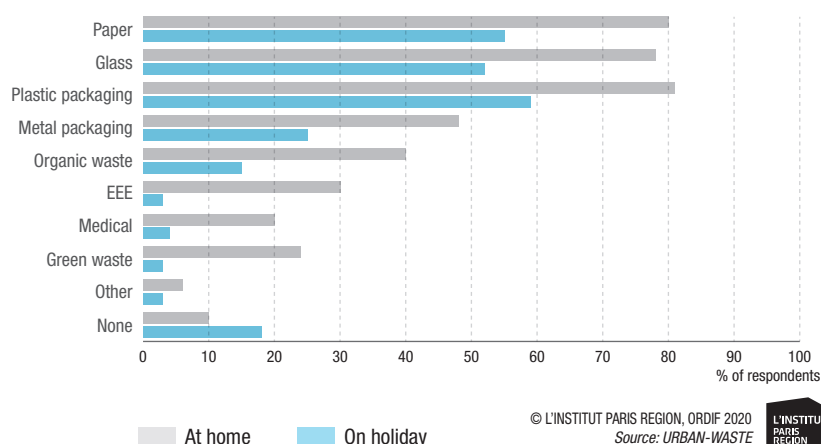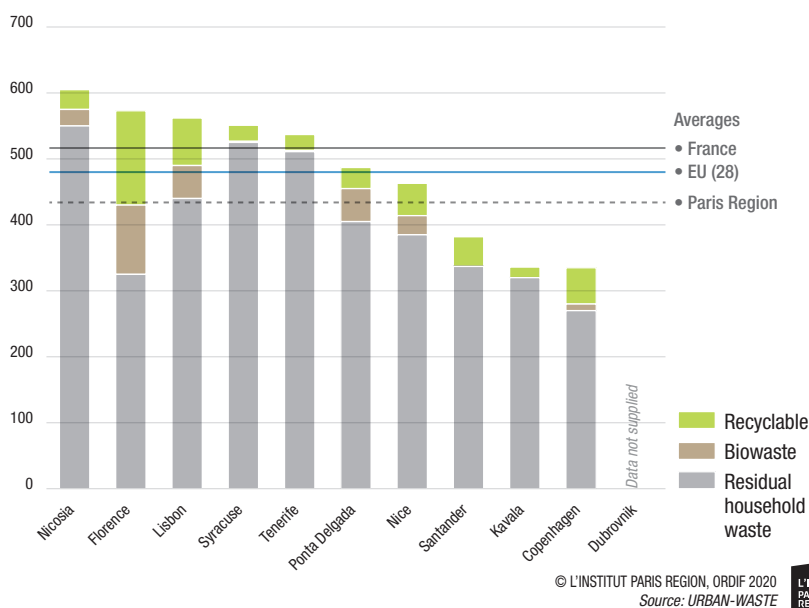
They first aimed to raise customer awareness by putting small information leaflets on tables and signs on buffets inviting guests to eat their fill. In parallel, diners were given small plates so that they would help themselves to smaller portions, with no limit to the number of times they could return to the buffet. Some buffet trays displayed on the buffet tables were convex in order to reduce the amount of food distributed while maintaining an impression of abundance.

Doggy bags in restaurants

In order to precisely quantify the effect of these measures on the reduction of food waste, some of the establishments installed electronic scales in their kitchens to record the weight and type of food

**Production of waste in 2015 in kg per capita (residents + resident-equivalent tourists)**

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Source: URBAN-WASTE

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Source: URBAN-WASTE

left: Doggy bag provided in a restaurant in Nice.

right: Scale for weighing food waste in a Lisbon restaurant.

Evolution of average monthly waste production (in litres) in restaurants providing doggy bags in Nice

© L'INSTITUT PARIS REGION, ORDIF 2020
Source: URBAN-WASTE
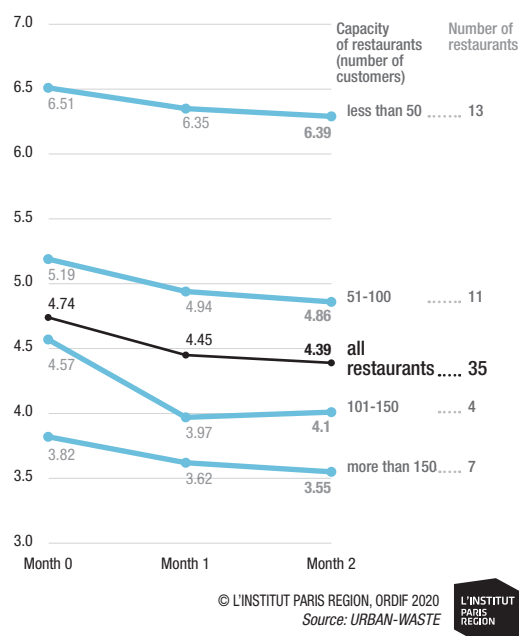
being thrown away. This not only made it possible to precisely quantify food waste; it also made it possible to measure how much waste is generated by different menus.

For example, applying these measures made it possible to reduce food waster by 29%, 43% and 46% in the Eden, El Tope and Marte hotels in Tenerife respectively over a five-month period.
The cities of Nice and Florence also chose to distribute 4,000 doggy bags in 39 restaurants and 8,900 doggy bags in 128 restaurants respectively.

In Nice, the effects of handing out doggy bags on residual waste were measured for three months in 35 restaurants by counting the number of bin bags and their volume in litres, as well as the number of customers, thus indicating waste per customer in litres.
The results were immediate, as shown in the opposite graph: the average reduction in volume of waste was 7%, with a larger reduction (-12%) in restaurants with a capacity of 100 -150 customers and a more modest reduction (-3%) in restaurants seating fewer than 50. The results thus show that the greater a restaurant's capacity, the less waste is produced per customer.

Waste produced (in litres)

Average number of customers	month 0	month 1	month 2	%	Number of restaurants
≤ 50	6.51	6.35	6.29	- 3	13
51-100	5.19	4.94	4.86	- 6	11
101-150	4.57	3.97	4.01	- 12	4
>150	3.82	3.62	3.55	- 7	7
All	**4.74**	**4.45**	**4.39**	**- 7**	**35**

WHAT CAN THE PARIS REGION LEARN FROM THIS?

The management of tourist waste in large cities seems less urgent now that the Covid-19 pandemic has caused world travel to collapse. But it will become sharply relevant once more as soon as the crisis is over, with cities eager to regain their tourist clientele. With 50 million visitors in 2018, the Paris Region was the most popular tourist destination in the world before the crisis. Our region will host the Olympic and Paralympic Games in 2024, which will bring in a massive influx of visitors over a short

AIMS OF THE PRPGD[4] IN THE PARIS REGION

- It aims to make the Paris Region a leader territory in the field of waste prevention, especially via communication and awareness-raising campaigns targeting tourists in particular.
- Its goal is to reduce per capita household and food waste by 10% by 2025.
- It envisions an action plan whose aim is to cut food waste by 60% compared to 2015 by the year 2031.
- By 2025, new waste sorting stations will be installed in leisure venues (sports facilities, concert halls, etc.), streets, parks, gardens, public spaces and public transport. Colour codes used in sorting instructions will be harmonised.

period. The quality of information on correct waste sorting procedures is the main variable that explains tourist behaviour. It is thus crucial to provide clear instructions in different languages.

Measures requiring relatively little effort on the part of restaurant and hotel owners are rapidly effective, such as replacing single-use products or making food portions smaller. It is vital to put in place a system to measure the evolution of waste production in order to communicate the results to staff of tourist establishments and highlight their actions. The staff training phase must begin during the low season, in winter or early spring. Staff mobilisation and motivation are essential to the implementation of waste prevention and reduction measures. All staff levels, from managers to employees, must be involved in order to obtain tangible results. Maintaining a stable, well-trained team may however turn out to be difficult because of the high staff turnover that is common in this sector.

Last but not least, local authorities and their political representatives are a key factor in mobilising, monitoring and supporting the people involved, especially during the phases involving awareness-raising, monitoring results and communication in the media.■

Maxime Kayadjanian, research analyst
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1. "Urban strategies for Waste Management in Tourist Cities", funded by the Horizon 2020 programme.
2. This situation is comparable to that in the Paris Region, but here tourist footfall is more linked to business tourism and the many trade fairs organised in and around Paris.
3. This note only presents a few examples of measures relating to plastic and food waste, as well as waste sorting.
4. Plan régional de prévention et de gestion des déchets/Regional Waste Prevention and Management Plan.