

Good Practice in Selective Collection of Waste in Heritage City Centres		
Nº.	Section	Description
0.	<b>Title of the practice</b>	<i>Food Waste Selective Collection – Different strategies for the door-to-door collection</i>
1.	<b>Photograph</b>	<ul style="list-style-type: none"> <li>• Door-to-door collection in commerce – General locations</li> </ul>  

- Door-to-door collection in commerce – Ribeira



2.	<b>Proposers</b>	Municipality of Porto
3.	<b>Contacts</b>	Pelouro da Inovação e do Ambiente: <a href="mailto:pelouro.ia@cm-porto.pt">pelouro.ia@cm-porto.pt</a> +351 222 097 161
4.	<b>Useful links</b>	<a href="http://www.cm-porto.pt">www.cm-porto.pt</a>
5.	<b>Start date</b>	2008
6.	<b>Activities' state of the art</b>	Ongoing
7.	<b>Location</b>	Portugal, Porto, Heritage City Centre
8.	<b>Inhabitants in the area</b>	7000
9.	<b>Description of the practice</b>	
	<b>Origin:</b>	The Heritage City Centre is a very heterogeneous area regarding several aspects. In respect with

the building occupation and utilization, there are residences, restaurants, coffee shops and bars, other store types, hotels, etc. The urban structure is also very diverse through the entire area of the historic centre. All this factors depend on the location in the Heritage City Centre and reflects on the characteristics needed for waste collection system as well as in the potential for food waste collection.

At the moment we do the selective collection of commercial food waste in the entire city, through a door-to-door collection system. Although, different locations have different characteristics and different needs related with the waste management system. This kind of differentiation is present in the Heritage City Centre due to its heterogeneity. In order to respond to the different requirements of each area, overtime we have been adjusting the food waste collection system and developing specific schemes for specific areas in the Heritage City Centre. At the moment, we have a specific system for Ribeira, that we have already present and explained, and a slightly different system for the rest of the historic area.

**Development and Timescale:**

In order to recover the organic fraction present on the urban waste, in 2008 we started to collect selectively food waste in some commercial establishments that produced food waste. After the implementation phase, we began to expand the system intervention area throughout the city, including the Heritage City Centre. Once we realized that the standards we had developed for the system couldn't be applied in Ribeira, we started adjusting the system and developing different strategies for Ribeira's unique characteristics. The specific system for food waste selective door-to-door collection in Ribeira was implemented in 2015.

As well was explained in the case of the selective collection system, at the moment the food waste door-to-door collection systems are mature and completely operational. However, we are aware that there's still potential for expansion. Besides that, the behaviour of the waste production is changing continuously because of the city development, especially in the Heritage City Centre where the tourism patterns have been evolving drastically in the last years. Nevertheless, the goals associated with waste recovery are getting higher and higher. Therefore, we continue to develop studies in order to expand the system to new users and increase the system's coverage rate in the entire city.

**Actors involved:**

After the design and planning phases we started the implementation of the system. In order to ensure the operability of the service we had to involve the commercial establishments owners and employees. The first step was to explain them the changes that were about to happen in the systems and ask for their collaboration. We try to emphasize the advantages of this new system through intensive awareness, also involving the Parish Councils and owners of restaurants and bars. The system works based on the direct collaboration of the municipality and the commercial owners but also with the collaboration of Parish Councils.

**Legal framework:**

Beyond all issues related with the street cleanness, the satisfaction of the user's needs and the operational aspects of the waste management system, all the efforts we put in the improvement of the selective collection are moved by legal obligations imposed by the European waste framework legislation. In order to accomplish the goals established by the European Commission for the waste management in respect with waste recovery, reutilization and recycling, our action plan includes several actions to be developed and implemented until 2020. One of these actions is directly related with the work that we described: the expansion of the door-to-door food waste selective collection systems in the commerce sector.

**Financial framework:**

	<p>We can't be precise respecting the costs and revenues associated with the system. Nevertheless, we can be sure that no food waste was recovered before the implementation of this system and because of that it was thrown away with the unsorted waste. Therefore, the implementation of the system was responsible for decreasing the unsorted waste sent to incineration, consequently decreasing the waste treatment cost. On the other hand, once the operational requirements are higher the operation cost is increased.</p> <p>In respect with the financing model, since the expansion of the door-to-door selective collection system in commerce is addressed by the municipal action plan developed in the scope of the legal framework, the development of these actions is dependent on the approval of our application for Community Funds.</p> <p>The taxing model is the same for all users, regardless of the waste management model: the individual waste management fee depends on the water consumption.</p> <p><b>Use degree:</b> (%) or number of users (if possible):</p> <p>In Ribeira the coverage of the system is 100%, corresponding to approximately 100 commercial places served by it. The other door-to-door food waste selective collection system has a total of approximately 525 users in the entire city, 32 of them are located in the Heritage City Centre.</p>		
<b>10.</b>	<b>Results</b>		
	<p><b>Proven results (through indicators):</b></p> <p>With the door-to-door selective collection system in Ribeira we recover per year around 330 tonnes of food waste. In the users located in other places in the Heritage City Centre we estimate that the amount of waste collected is around 165 tonnes (we can't be precise about this value because the collection service is not exclusive of the historic centre, it includes several users outside the heritage area). Therefore, in the Heritage City Centre we recover a total of approximately 500 tonnes per year, which wouldn't be recovered at all if this system didn't exist.</p> <p><b>Possible success factors:</b></p> <p>By adjusting the food waste selective collection system to the urban characteristics and the user's needs we can ensure better results in terms of waste recovery and also better operational conditions. If the system is adapted to the urban characteristics, than its operation is easier and more efficient. If the system suits to the user's need, than the collaboration is better and the participation rate is higher.</p> <p><b>Main difficulties encountered:</b></p> <p>The main difficulty in planning an expansion of the door-to-door collection system is the perception of what will be the best strategy and the more suitable configuration to the system. Determine the critical aspects and the major struggles that may occur is a very complex and hard-working task.</p>		
<b>11.</b>	<table border="1"> <tr> <td><b>Main lessons learnt from the practice</b></td> <td>The performance of a waste collection system is directly related with its suiting to the environment where it operates. Each place it's unique in some way and the waste collection system has to be built on that uniqueness. The better a system fits in a specific place, the better the results achieved.</td> </tr> </table>	<b>Main lessons learnt from the practice</b>	The performance of a waste collection system is directly related with its suiting to the environment where it operates. Each place it's unique in some way and the waste collection system has to be built on that uniqueness. The better a system fits in a specific place, the better the results achieved.
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