COLLECTORS
WASTE COLLECTION SYSTEMS ASSESSED AND GOOD PRACTICES IDENTIFIED

D5.4 - Collection of the minutes and report with conclusions of the working group meeting

Summary of the RWG meetings

Jean-Benoit Bel, ACR+

Credits

Disclaimer

This project has received funding from the European Union's Horizon 2020 research and innovation program under grant agreement No 776745

Technical references

Grant Agreement N°	776745	**Acronym**	COLLECTORS
Full Title	Waste collection systems assessed and good practices identified		
Work Package (WP)	WP5 - Stakeholder involvement, communication and dissemination		
Authors	Jean-Benoit Bel, ACR+		
Contributors	Hanna Pikhola, VTT Lauri Kujanpää, VTT		
Document Type	Report		
Document Title	D5.4 - Collection of the minutes and report with conclusions of the working group meeting		
Dissemination Level (delete unnecessary options)	PU	Public	

Document history

Version	Date	Partner	Author
1	12/05/2020	ACR+	Jean-Benoit Bel
2	20/05/2020	ACR+	Jean-Benoit Bel
Final	26/05/2020	ACR+	Jean-Benoit Bel

Contents

1. Introduction

The COLLECTORS project aims to aims to identify and highlight existing good practices of waste collection and sorting. It focuses on three waste streams: paper and packaging (PPW), waste electrical and electronic equipment (WEEE), and construction and demolition waste (CDW). In particular, the objective of the project is to harmonize and disclose available information on different waste collection systems; to gain better insight into the overall performance of systems; and to support decision-makers in shifting to better-performing systems via capacity-building and establishing implementation guidelines.

The COLLECTORS project developed a participative approach, by involving external stakeholders in its activities in order to get their input and feedback on the project. In particular, four meetings bringing together representatives of local and regional authorities, public waste management companies, and extended producer responsibility organisations, were organised over the course of the project. These meetings aimed to present the project development, but also to get some hindsight from the organisations in charge of the coordination and practical organisation of municipal waste management. This helped the COLLECTORS consortium to better identify the challenges and expectations of local players, to ensure that COLLECTORS work reflects the complexity of local waste management and addresses the main challenges.

This report summarises the work achieved through these so-called “Regional Working Group” (RWG) meetings and their main conclusions.

2. Minutes and conclusions of the four RWG meetings

2.1 First RWG meeting

2.1.1 General information

Location: Treviso, Italy

Date: 21/03/2018

Participants:

Table 1: participants of the 1st RWG meeting

Organisation	Country
Southern Waste Region	Ireland
Oslo	Norway
Antwerp	Belgium
AMIU, Genova	Italy
Amsterdam	The Netherlands
ARC (Waste Agency of Catalonia)	Spain
Lipor, Greater Porto	Portugal
HSY, Helsinki	Finland
Warsaw	Poland
Contarina, Province of Treviso	Italy

Main objectives: the first meeting aimed to help defining "a key parameter set for waste collection systems", i.e. the list of data, information, and indicators, which are relevant to describe and assess the organisation and performances of local waste collection systems. These key parameters were then used for the data collection that took place during the first phase of the project.

2.1.2 Minutes

The first RWG meeting consisted in a working session, that started by a general presentation of the project, and further explanation of the RWG approach developed by the consortium. Most of

Figure 1: poster session during the 1ST RWG meeting

the RWG session consisted in a "poster session": different posters were displayed in the meeting room, focusing on the three waste streams targeted by the project: paper and packaging waste, WEEE, and construction and demolition waste. For each waste stream, several posters were displayed, listing the main parameters already identified by the COLLECTORS consortium and WP1 leader Ramboll through an exhaustive literature review. The posters presented different types of parameters: general parameters focusing on the characteristic and the context of local waste collection systems (e.g. population, density, type of housing, GDP, etc.), and waste-specific parameters describing the waste management organisation and performances (e.g. collection mode, collected quantities, etc.). The list of parameters also included specific "request" from COLLECTORS experts in charge of the analysis of waste collection systems (economic, social, environmental, and circular economy analyses).

Each table had 4 columns:

- One presenting the parameter;
- One for participants to assess the relevancy of the parameter to document waste collection system, and regarding decision-making
- One for participants to assess the availability of local data and information enabling the calculation of this parameter;
- One for participants to add qualitative comments

Participants were given stickers and sticky-notes to share their feedback on the parameters. Red stickers indicated either the non-relevancy of the parameter or the unavailability of information at local level to document it, green stickers indicated high-relevancy and the availability of data, and orange one could be used to indicate a medium interest and partial information available.

The poster session also fostered discussions between COLLECTORS experts and RWG participants, which contributed to shed light on the expectations of local waste players, and the possible difficulties with local data.

After the poster session, a quick wrap-up was proposed to the participants to explain the following steps of the work.

2.1.3 Main conclusions

The first RWG meeting helped to narrow down the list of parameters, whose final version is presented in deliverable 1.1. The discussions helped to better understand the relevant parameters

for local players. They also revealed differences in interests and in the availability of local data. In particular, some parameters were regarded as relevant but not well or partially documented, such as the composition of mixed waste fraction, the outcome of sorted fractions for PPW, the illegal practices for WEEE and CDW, or economic information.

2.2 Second RWG meeting

2.2.1 General information

Location: Malta

Date: 25/09/2018

Participants:

Table 2: participants of the 2nd RWG meeting

Organisation	Country
Contarina, Province of Treviso	Italy
Balearic Islands	Spain
Epirus region	Greece
City of Lisbon	Portugal
City of Stavanger	Norway
Copenhagen Municipality	Denmark
City of Vilnius	Lithuania
City of Warsaw	Poland
Zagreb City Holding	Croatia
Wasteserv Malta Ministry of Environment	Malta

Main objectives: this 2nd RWG meeting aimed to discuss and list the key criteria to identify good practices in waste collection. These criteria were then used to identify relevant waste collection systems within the data collected by the COLLECTORS projects, so that they serve as the 12 case studies to be further analysed and described.

2.2.2 Minutes

During the working sessions held in Malta, several European public authorities members of the Regional Working Group, together with the local experts and project partners, discussed the criteria that should be used for identifying good practices from the database, for instance the

Table 3: picture of the 2nd RWG meeting

most relevant indicators that allows the identification of a well-performing system (such as capture rate…). Methods of multicriteria decision-making (MCDM) were applied for organising the data and collecting the feedback from the participants in a structured way. In addition to gathering feedback for the case study selection, the aim of the sessions was to exchange views on the importance of local characteristics for defining good practices in a specific context. The objective was to identify local contexts for which the identification of good practices is relevant, such as dense or remote areas, touristic cities… Altogether, close to 30 persons representing different European cities and regions participated in the three decision-making sessions that focused on each of the studied waste streams.

The discussions consisted in different sessions focusing on the different waste streams targeted by the project, where two types of criteria were discussed:

- Local characteristics and contextual information that may impact the organisation and performances of local waste collection systems (such as density, tourism, etc.)
- Indicators that help assess the performance of a local waste collection system and identify it as a good practice

For each type of criteria, a list of indicators were presented and each expert was invited to discuss its relevancy and weight its importance according to the SWING weighting method, where the most important criterion is given a value of 100 points and then the next most important criterion is given an importance of equal or smaller than 100 points, and so on.

It is important to note that the list of criteria had to be limited to the parameters for which sufficient data was available in the COLLECTORS database, e.g. that the information was available for a sufficient number of systems. Therefore, some relevant criteria could not be discussed due to little data availability. The main results of this session are presented in the following table:

Table 4: selected criteria by the RWG participants

Waste fraction	Main contextual criteria	Main performance indicators
PPW	Population density GDP	Total WEEE collected per inhabitants Share of WEEE in mixed residual waste
WEEE	Tourism and commuters Total municipal waste generation per capita	Capture rate for plastic Share of plastic in mixed residual waste
CDW	GDP per inhabitant Type of housing	Number of inhabitants per civic amenity sites Share of CDW in mixed residual waste

The results of these discussions led to the definition of case studies, presented in deliverable 1.3.

2.2.3 Main conclusions

The discussions held during the MCDM sessions clearly highlighted the challenges in comparing systems operating in different local conditions. One of the main challenges relates to available data and how it should be interpreted. Indeed, methods used to calculate many of the indicators that would be of interest for the comparison are often different. However, discussions also indicated that there is an interest and need for sharing information on different systems and how they are operating, even though their comparison can be complicated.

2.3 Third RWG meeting

2.3.1 General information

Location: Warsaw, Poland

Date: 25/06/2019

Participants:

Organisation	Country
Southern Waste Region	Ireland
City of Oslo	Norway
Interafval, association of Flemish local authorities	Belgium
Zagreb City Holding	Croatia
Federation of Intercommunity Development Associations (Romania)	Romania
UAB "VAATC" (City of Vilnius)	Lithuania
London Waste and Recycling Board	UK
City of Warsaw	Poland
City of Thessaloniki	Greece

Main objectives: the meeting focused on the environmental, economic, and social impacts of municipal waste recycling, and how these different parameters influence decision-making regarding waste management systems. The COLLECTORS consortium aimed to identify the most useful and meaningful indicators that can help decision-making to improve local waste systems, and how these different parameters can be taken into account for decision making.

2.3.2 Minutes

The exercise was organised around a fictive case study, the aim of which was to select a preferred waste collection strategy for a European region. Discussions focused only on paper and packaging

waste for this workshop, so that more in-depth discussions could be tackled. The fictive case region needed to improve its performance in waste collection and increase capture rates for all packaging waste streams. The case study exercise was built based on data selected from the COLLECTORS database and the 12 case studies prepared by the project partners.

Table 5: picture of the 3rd RWG meeting in Warsaw

During the day, the experts discussed the specific characteristics of the case region and devised proposals for improving the waste collection system. Multi-criteria decision making (MCDM) was applied for collecting and merging expert opinions in a structured way and for selecting the preferred waste collection strategy. During the discussions, participants looked at potential options for improving the collection system and increasing stakeholder participation.

Participants proposed actions to improve the performances (change in collection organisation, increase of the number of collection points, etc.). The participants identified the main challenges as:

- The low cost of landfilling
- The open access of collection points and waste bins, leading to possible contamination
- The lack of control of the collection system and identification waste producers
- The lack of incentives (such as pay-as-you-throw scheme)

Different actions were proposed, such as the progressive increase of a landfill tax, the diversification of bin size to encourage better sorting of recyclables, the adaptation of collection frequencies to motivate sorting, and the improvement of monitoring and controls of possible illegal behaviours such as backyard burning.

Criteria derived from the five PPW case studies of COLLECTORS were weighted using the SWING method, and additional criteria were proposed and weighted by the participants. “Capture rates” were regarded as one of the most appropriate indicators, due to their reliability and accessibility, compared to recycling rate that might be more challenging to assess due to lack of information, even though capture rate does not reflect the quality of sorted fractions. For decision-making, cost indicators are very relevant, and should include waste fee per inhabitant (which is very relevant to local decision-makers and elected representatives) and costs per tonne of collected materials and industry fees. Environmental indicators such as GHG warming potential was regarded as less used in decision-making, but it was noted that its importance should grow in the coming years. Other indicators were deemed important, such as the proximity of collection points, or the existence of feedback-gathering mechanisms.

Additionally, they discussed the necessary data and criteria related to describing the performance of a waste collection system, as well as the availability and importance of environmental, economic and social data and the specific needs related to decision-making.

The overall results are presented in deliverable 3.4.

2.3.3 Main conclusions

The findings from the workshop indicated that the number of criteria that can be effectively included in decision-making is limited. However, the availability of comprehensive background information describing the relevant economic, environmental, social and technical aspects related to the systems and their impacts was deemed to be useful.

2.4 Fourth RWG meeting

2.4.1 General information

Location: Thessaloniki, Greece

Date: 10/12/2019

Participants:

Table 6: participants of the 4th RWG meeting

Organisation	Country
City of Warsaw	Poland
Federation of Intercommunity Development Associations	Romania
Circular Economy Wales CIC	UK
City of Oslo	Norway
Brussels Environment	Belgium
SERIT, Region of Verona	Italy

Lipor, Greater Porto	Portugal
Municipality of Thessaloniki	Greece

Main objectives: The aim of the meeting was to discuss and to analyse the decision-making challenges related to improving waste collection systems at the local level. Besides, the first outlines of the COLLECTORS guidelines were presented and discussed.

2.4.2 Minutes

The session focused on different aspects. First, a session dedicated to the mapping of decision-making processes was organised. The aim of this session was to get a better understanding of the decision-making processes related to waste collection, in order to consider where and how MCDM methods would be most useful. The participants were asked to describe the main phases related to this process and to name the actors who are involved in each phase. In addition, they were asked to describe the main challenges related to the process.

Figure 2: photo of the 4th RWG meeting in Thessaloniki

The decision-making processes presented by the participants were related to different waste streams, ranging from PPW and biowaste to WEEE and CDW, basing their mapping on processes that they participated in. Thus, the focus of the workshop was slightly wider compared to the COLLECTORS case studies. Presented decision-making processes included for example the re-organising the collection of MSW and packaging waste and agreeing on the division of costs between the actors, the reorganisation of locations for urban composting in order to separate biowaste, the modification of PPW collection in order to increase recycling rates, or the introduction of a new fee for collection and treatment of municipal waste. Additionally, generic

descriptions of a typical decision-making process from the point of view of a WEEE PRO and a municipal waste management company were presented and discussed.

Participants mentioned European recycling targets as an important driver for modifying their WCS, thus most of the processes presented focused on the increase of capture or recycling rates. Costs and their distribution among the different local players were also mentioned. Other drivers, such as demand from inhabitants, or innovations from the waste management company, were also mentioned.

The participants also mentioned common challenges regarding decision-making. The definition step (e.g. understanding the situation, defining the problem to tackle, and establishing a common language among the local stakeholders) was mentioned as critical, and the lack of information, or the diversity of conflicting agendas among the local players were also highlighted as potential challenges. Other difficulties were also mentioned, such as stakeholder engagement, and monitoring the results.

Overall, the participants described decision-making processes behind important changes of WCS as long and complicated processes that requires consensus and acceptance by the different players. However, smaller changes and adjustment of collection systems were presented as more straightforward when decision falls under the responsibility of the waste management company. The decision-making process actually consists in various decisions, taken in more or less formal ways. This is also the case for the final decision and acceptance, which might be a less formal discussion or a budget decision.

The overall results are presented in deliverable 3.4.

Finally, the first outlines of the COLLECTORS guidelines were presented, and discussions were held on their possible content, and their format. The principle and first outlines of the guidelines were presented and discussed. Several discussions were conducted. The first one focused on the main elements of contents that seemed relevant to the participants. They were mostly interested in knowing how best performing territories manage their waste, and how territories sharing similar constraints to theirs do. Some elements received less enthusiasm, such as the environmental impact of waste collection, or how WCS fits in the circular economy.

Besides, the question of the format was also addressed. The need for translation was not particularly highlighted, as “simple English” was believed to be accessible to most local waste experts. Participants mostly highlighted the importance of short summaries and showed some interest to local workshops with direct presentations, that could be organised as follow-up activities of the project.

The overall results are presented in deliverable 4.2 (not public).

2.4.3 Main conclusions

The findings from the workshops indicated that it is important to consider the decision-making process as a series of connected events (that may take place in parallel), rather than one occasion. In addition, decision-making is a social process, in which challenges and needs related to cooperation and stakeholder engagement can be significant. One of the main challenges identified during the study related to lack of data. In the context of waste collection, decision-making seems to be often affected by lack of precise or comparable data. Filling in existing data gaps requires systematic efforts, implementing monitoring activities and cooperation (data exchange) between actors in the recycling value chain. This is necessary for improving all stages of the decision-making process in future.

Glossary

CDW: Construction and demolition waste

MCDM: multi-criteria decision making

PPW: paper and packaging waste

RWG: regional working group

WCS: waste collection system

WEEE: waste electrical and electronic equipment

COLLECTORS Consortium

PNO CONSULTANTS www.pnoconsultants.com	BIPRO www.bipro.de	VTT www.vttresearch.com
VITO NV www.vito.be	UNIVERSITEIT LEIDEN www.centre-for-sustainability.nl	ACR+ www.acrplus.org
EUROCITIES www.eurocities.eu	WEEE FORUM www.weee-forum.org	ZERO WASTE EUROPE www.zerowasteeurope.eu

COLLECTORS
WASTE COLLECTION SYSTEMS ASSESSED AND GOOD PRACTICES IDENTIFIED

www.collectors2020.eu

This project has received funding from the European Union's Horizon 2020 research and innovation program under grant agreement No 776745