



IMPACTPapeRec: IMPACT - Introduction and Improvement of Separate Paper Collection to Avoid Landfilling and Incineration

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PP	Restricted to other programme participants (including the Commission Services)	
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D4.1 Innovation Node Working Group activity interim report

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IMPACTPAPE REC

Boosting separate paper collection



This project has received funding from the European Union's Horizon 2020 research and innovation

Date: 31st March 2017

Abbreviations

BG	Bulgaria
BPWG	best practice working group
D	deliverable
ESC	External Support Committee
FR	France
INWG	innovation node working group
Jan	January
PfR	paper for recycling
PL	Poland
RO	Romania
Sep	September
TBA	To be announced
TBD	To be determined
UK	United Kingdom of Great Britain and Northern Ireland
WP	Work package



IMPACTPAPER REC

Boosting separate paper collection



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1 Introduction

IMPACTPapeRec is a European project designed to boost the Circular Economy by further increasing the separate collection of paper for recycling (PfR) and promote appropriate schemes to avoid landfilling and incineration.

This work package WP 4 entitled “innovation node” is intended to create an innovative atmosphere within the project by supporting the innovation process within IMPACTPapeRec. There are three main objectives:

- Providing key tools and methods (innovation supporting activities)
- Identifying innovation needs and new ideas within the innovation node working groups (INWG)
- Boosting collaboration with other projects and initiatives.

This report is the first deliverable of this work package, covering the first year of the project from February 2016 till January 2017. The first part (chapter 2) gives a general introduction to the innovation process and creative problem-solving. It also includes a description of the applied tools and methods. The second part (chapter 3) describes the IMPACTPapeRec interactive working sessions and the first results from the innovation node working groups (INWG).



2 IMPACTPapeRec approach to innovation

2.1 General approach

The word innovation derives from the Latin verb *innovare*, which means *to renew*. Depending on the sector and the perspective, there exist numerous different definitions for the term innovation. The Innovation Union² explains innovation as follows [1]:

*“There is no one single definition. But innovation as described in the Innovation Union plan broadly means **change that speeds up and improves the way we conceive, develop, produce and access new products, industrial processes and services**. Changes that create more jobs improve people's lives and build greener and better societies”*

Innovation is therefore a process, carried out on purpose and resulting in a kind of change. The economist JOSEPH ALOIS SCHUMPETER describes three phases of the innovation process:

- Invention - generation of an idea
- Innovation - the realization of an untried idea
- Diffusion - widespread application of an idea. [2] [3]

All three phases are relevant for the innovation node of the IMPACTPapeRec project:

- Invention: The project will identify innovation needs, which are the starting point for new ideas.
- Innovation: The project might identify already existing solutions that are not yet in action.
- Diffusion: the project will identify already realized solutions that could be applied to other municipalities.

The third phase ‘diffusion’ corresponds largely with the main objective of IMPACTPapeRec – the identification of GOOD PRACTICES for paper and board collection. Already realized solutions will be identified and evaluated by the partners in WP2. The cluster groups in WP3 will discuss needs and barriers for their implementation. As the activities within WP4 should indeed support all three phases of the innovation process, it was decided that the innovation supporting activities (task 4.2) should be provided to all working groups within the project (Table 1).

² The Innovation Union is one of the seven flagship initiatives of the Europe 2020 strategy



Table 1: IMPACTPapeRec working groups

Work package	Working groups
WP2: Best practice identification and assessment	Best practice working groups (BPWG)
WP3: Validation of the models, standards, policies and incentives	Cluster groups
WP 4: Innovation node	Innovation node working groups (INWG)

2.2 Methodology

The creative problem-solving process of IMPACTPapeRec is divided into four parts:

1. Defining the problem
2. Generating ideas
3. Evaluating ideas
4. Deciding to implement ideas.

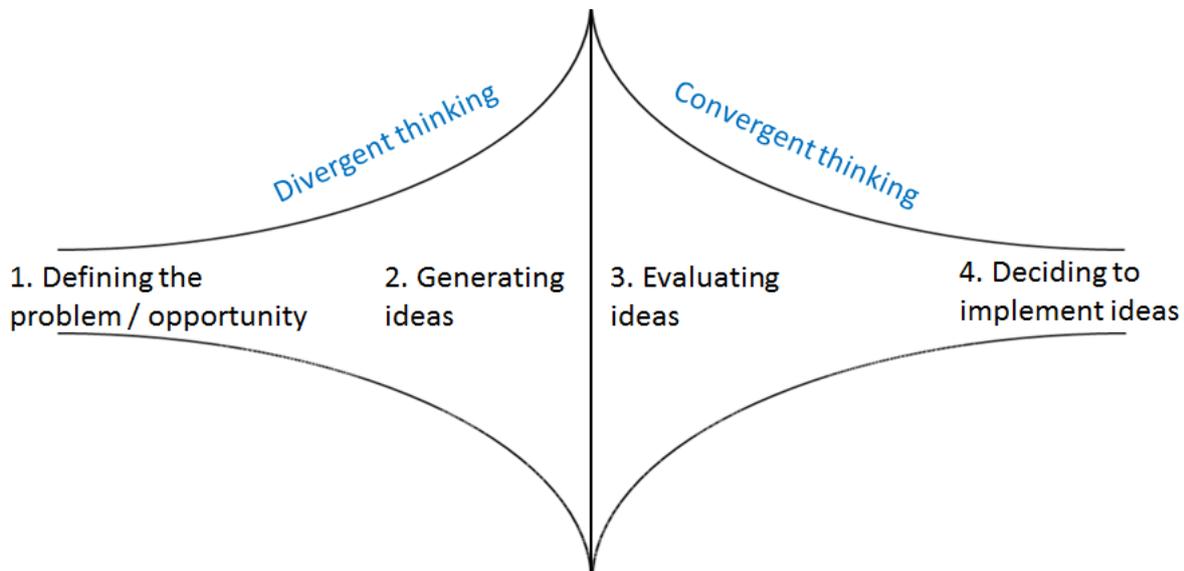


Figure 1: IMPACTPapeRec problem-solving process [4]

Table 2 shows how all four parts are realized in the IMPACTPapeRec project. The work is carried out both individually by the responsible partners (shown in blue) and in group workshops (shown in orange).

Part 1 ‘definition of problems’ is already finished and the main results will be described in the IMPACTPapeRec report ‘D3.2 – Innovative models and best practices to be implemented in cities under study’. The remaining three parts of the process have already started and will proceed in parallel. Part 2, generating ideas for improved paper and board collection, has been part of the



internal workshops³. In addition, the *gallery on GOOD PRACTICES* collected ideas from the participants of the informative meeting in Barcelona.⁴ All ideas are documented in a frequently updated *GOOD PRACTICES list* and will be included in the *best practice handbook* (D2.3). This handbook will also include the results of the *GOOD PRACTICE analyses*. This evaluation of the collected ideas (part 3) is being carried out by the BPWGs. The methodology for the analyses was introduced in the *BEST PRACTICE workshop* in Budapest³. As there are quite a number of GOOD PRACTICES to discuss the analyses are done by each BPWG member individually. The results are then discussed in BPWG skype meetings. The third session of the internal workshop in Barcelona discussed the implementation of GOOD PRACTICES.³

Table 2: realization of the creative thinking process within IMPACTPapeRec

	 Defining problems	 Generating ideas	 Evaluating ideas	 Discussing implementation
First year (Feb 16 - Jan 17)	Study visits ✓ Survey ✓	↩		
	D2.1 and 3.1 ✓			
	Workshop Sep '16 ✓		Workshop Sep '16 ✓	
	Problem analysis ✓	GOOD PRACTICES list 1 st ✓	GOOD PRACTICES analyses ✓	↩
	Workshop Jan '17 ✓	Workshop Jan '17 ✓		
	Second year	D3.2	GOOD PRACTICES list 2 nd	GOOD PRACTICES analyses
		Workshop Sep '17		Workshop Sep '17
		D4.2 innovation need	D2.3 Handbook	D3.3

2.3 Key tools and methods

This chapter describes some tools and methods that are used for the IMPACTPapeRec innovation process.

³ The workshops took place in Budapest, September 2016 and in Barcelona, January 2017. See chapters 3.1.1 and 3.1.2.

⁴ The informative meeting took place in Barcelona in January 2017. See chapter 3.1.3.



2.3.1 Problem tree

It is helpful to visualize the problem analysis with a problem tree especially for complex problems (**Fehler! Verweisquelle konnte nicht gefunden werden.**). It provides an overview of all known causes and effects that are related to an identified problem.

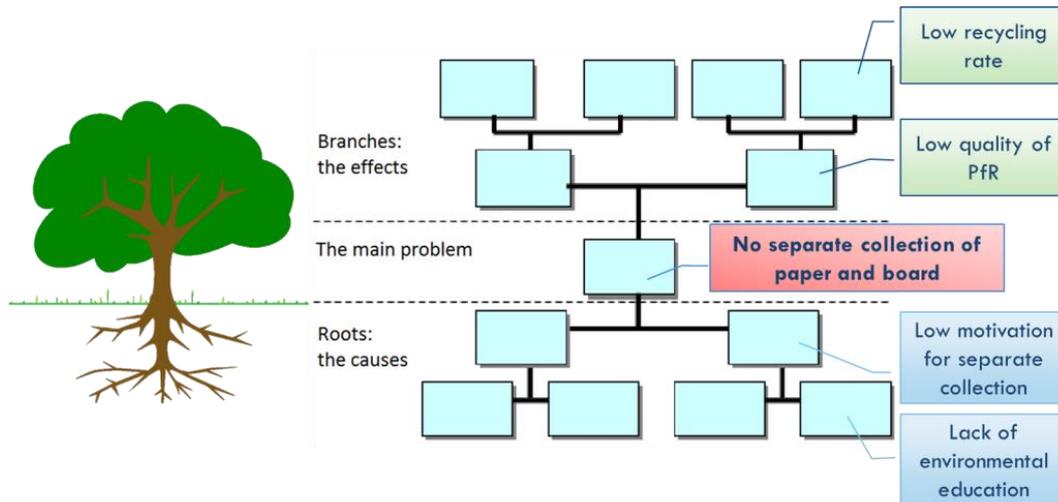


Figure 2: image of problem tree, including examples

The trunk of the tree represents the core problem, e.g. no separate collection of paper and board. The branches represent the effects and how they are interconnected. For example, the lack of separate collection results in low quality of paper for recycling and this leads to low recycling rates. The roots of the tree represent the causes of the core problem. Immediate causes of the core problem might have secondary and tertiary causes. For example, low motivation for separate collection might be the immediate cause, which in turn might be caused by a lack of environmental awareness (secondary), which might then result from a lack of environmental education (tertiary). This analysis should continue until the root causes are identified (**Fehler! Verweisquelle konnte nicht gefunden werden.**).

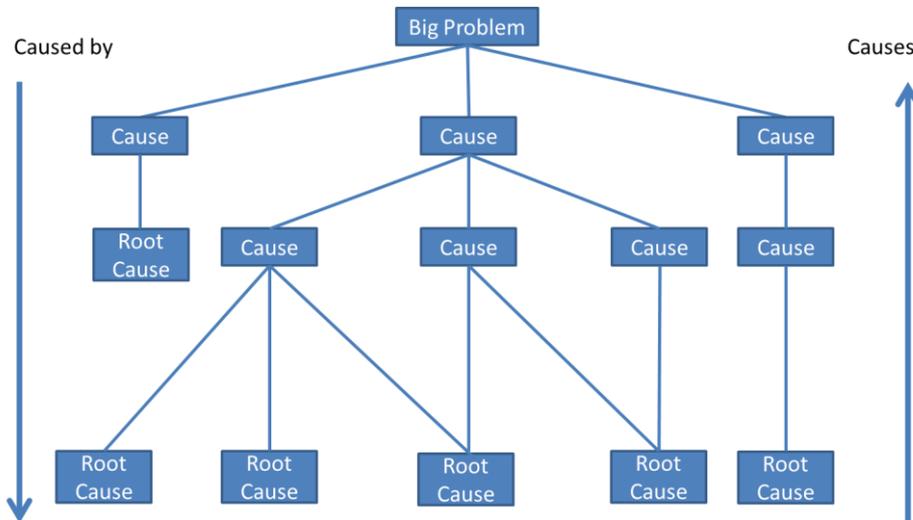


Figure 3: A cause analysis approach [5]

The analysis of causes is very important to reveal the whole complexity of a problem. Reversing the problem tree creates a solution tree. For example, a lack of environmental education generates greater knowledge about the environment. These challenges should be the objectives of the continued problem solving process. In the solution tree, the trunk of the tree represents the project goal and the effects become the outcomes.

[6] [7] [8]

2.3.2 Individual Brainwriting

Individual Brainwriting as a special type of brainstorming is used particularly in large groups to overcome language barriers, foster the generation of different ideas and involve more reticent participants in the idea generation process. For this purpose the process is separated into two main parts: first, all participants are given 10 to 15 minutes time to write down their ideas on the given question/problem individually on index cards or post-its (“Free Thinking”). Afterwards, the ideas are shared with the whole group, discussed, if possible sorted and ultimately evaluated. [9] [10]

2.3.3 World Café Method

The intention of a World café is to create interactive conversations by discussing a chosen question or a selected provocative assertion in a welcoming café atmosphere which encourages new ideas and solutions. The responsibility for a smooth and profitable procedure is carried by the café host, who implements the seven design principles for a successful world café to the participants. The selected question is discussed in small groups (up to five people each) in several rounds of conversations whereby the dialog partners constantly change after each round to connect the outputs and ideas of the different conversations to foster new ideas. Depending on the number of participants and the desired result, table hosts, which remain at the table after each round, can be used to steer the conversation. The world café at the event was realized with an overall café host instead of separate



table hosts. In the end the final results are shared with the whole group using different methods such as conversation, graphics and diagrams or gallery walks. [11]

2.3.4 Gallery

As one of the most versatile learner-centered activities the Gallery Walk encourages alternative solutions and multiple approaches to problems and can be used to encourage interactions between participants. Although mostly deployed as information-rich opening, closing or review activity this method creates a kind of an idea exhibition regarding a chosen topic. Large sheets of paper or pin boards are arranged on the walls of the rooms, each one labeled with a question, statement or overview of the selected topic. Participants walk randomly or in a single direction through the exhibition, adding their ideas to each topic or evaluating existing ideas by writing directly on the paper or on post-its, which get pinned to the boards. The walk can be linked to a subsequent discussion in small groups or with all participants. [12] [13]

2.3.5 Methods for prioritization

Prioritization methods help to focus on the most promising ideas or most important challenges. In general there are two different ways to select them:

- Choosing a favourite based on feeling
- Evaluation based on simple criteria.

Sticking dots

Scoring with sticking dots is a short and easy measure. Usually the participants are given a certain number of sticking dots to identify their favourite ideas (multi-vote). In the case of weighted votes the different coloured dots represents different scores, e.g. green for like, red for don't like. [14]

NUF Test

The NUF-Test is a method designed to check whether an idea is a creative solution to solve a certain problem. Three criteria are scored:

- New: Is it different from the things tried before?
- Useful: Does it solve the problem?
- Feasible: Could it be implemented in practice? [14] [15]

Criteria Matrix

Prioritization with criteria is somewhat more complex. The participants are asked to evaluate the level of different criteria, such as importance, impact, success, complexity and costs. [14] **Fehler! Verweisquelle konnte nicht gefunden werden.** shows an example used for the internal workshop in Barcelona in January 2017.



		Importance ⇄				
		1 Very Low	2 Low	3 Medium	4 High	5 Very High
Complexity ⇄	1 Very Low	Prio 3			Prio 1	
	2 Low					
	3 Medium	Prio 4			Prio 2	
	4 High					
	5 Very High					

Figure 4: An example of the criteria matrix used during the internal workshop in Barcelona

2.3.6 Networking activities

Dissemination events, such as the IMPACTPapeRec project conference and informative meeting in Barcelona (January 2017) and presentations of the project in other conferences, are part of the networking activities. The informative meeting used interactive activities (see chapter 3.1.3), thus providing the opportunity to interact with external experts. In addition to these face-to-face networking activities the LinkedIn group IMPACTPapeRec was created to enhance the networking impact.

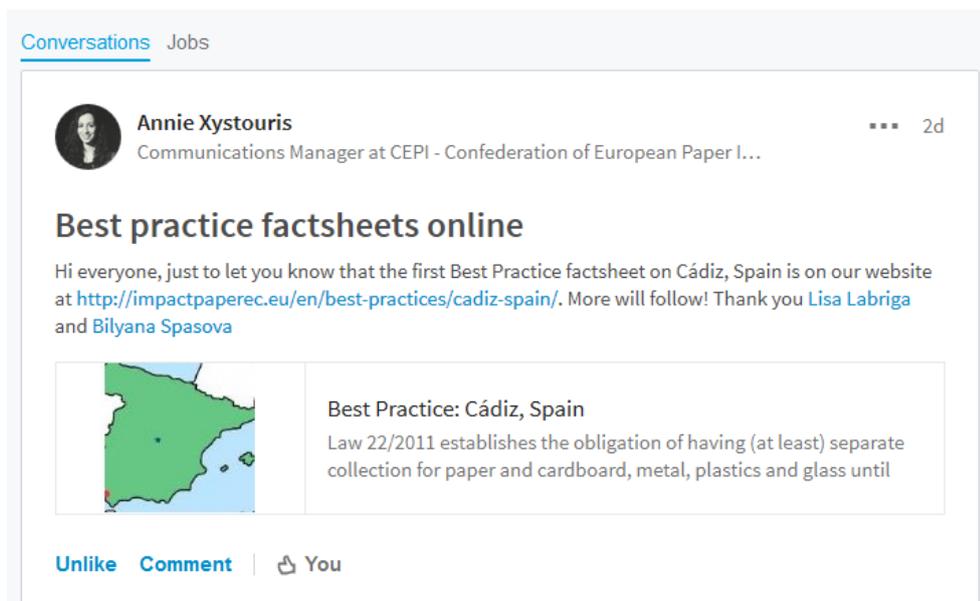


Figure 5: A linkedIn post in the IMPACTPapeRec group



3 IMPACTPapeRec innovation process

3.1 Interactive working sessions

Table 3 shows a schedule of working sessions within the IMPACTPapeRec project that are mainly interactive. In addition it is planned that some other dissemination activities, especially the municipality and citizen workshops, will use interactive methods. These will take place from summer 2017 until January 2018 and will thus be included in the next deliverable D4.2.

Table 3: schedule of interactive working sessions within the IMPACTPapeRec project

date	location	participants	method	topics	
Sep 2016	Budapest	internal	BPWG	workshop	Best practice analysis
			cluster groups	workshop	Problem analysis
Jan 2017	Barcelona	public	Informative meeting	world café	Standardisation, policy, incentives;
			Informative meeting	gallery	Best practices
Jan 2017	Barcelona	Internal+ ESC	BPWG/INWG	workshop	Innovation needs
			cluster groups	workshop	Problem analysis
Sep 2017	La Roche-sur-Yon	Internal+ ESC	INWG	workshop	Innovation needs
			cluster groups	workshop	Cluster analysis
Autumn 2017	Brussels	public	Informative meeting	TBD	TBD
Jan 2018	Brussels	public	Innovation workshop	TBD	TBD

BPWG – Best Practice Working Groups; INWG – Innovation Node Working Groups

3.1.1 Internal workshop in Budapest

The first internal workshop was held during the project meeting in September 2016 in Budapest, Hungary. It consisted of two sessions:

- Session 1 – cluster workshop:
 - Cluster groups: Bulgaria⁵, Romania⁵, Poland, France
 - Content: discussion about the outcome of D2.1 and D3.1; problem analysis
- Session 2 – best practice workshop:
 - Best practice working groups (BPWG)

⁵ As the situation within a country is very similar, the two Bulgarian clusters and the two Romanian clusters were combined in this first session.



o Content: discussion about GOOD PRACTICES

Wednesday 28th of September 2016	
Danubius Hotel Arena H-1148 Budapest, Ifjúság útja 1-3. (Hungary)	
Introduction	9:00 - 9:15
Workshop 1 - Cluster workshop: "Discussing the outcome of D2.1 and D3.1"	9:15 - 12:30 (Coffee Break 10:15 - 10:45)
• Introduction to the Methodology – Step 1, 2, 3 & 4 in workshop	9:15 - 9:30
- Step 1: List of problems in Paper Collection	9:30 - 9:50
- Step 2: Problem Definition and Analysis	9:50 - 10:15
- Step 3: Grouping and Relating	10:45 - 11:15
- Step 4: Create Insight Statements	11:15 - 11:45
• Presentation	11:45 - 12:00
Workshop 2 – BPWG workshop: "Discussing about best practice"	12:00 - 15:00 (Lunch Break 12:30 - 13:30)
• Step 1: Free thinking	12:00 - 12:10
• Step 2: Definition of best practices	12:10 - 12:30
• Step 3: Analysis (advantages and barriers)	13:30 - 13:50
• Step 4: Evaluation (KPIs)	13:50 - 14:20
• Presentation	14:20 - 14:40
Final Presentation: Outlook to "innovation workshops"	14:40 - 15:00

Figure 6: schedule of the first internal workshop in Budapest, September 2016

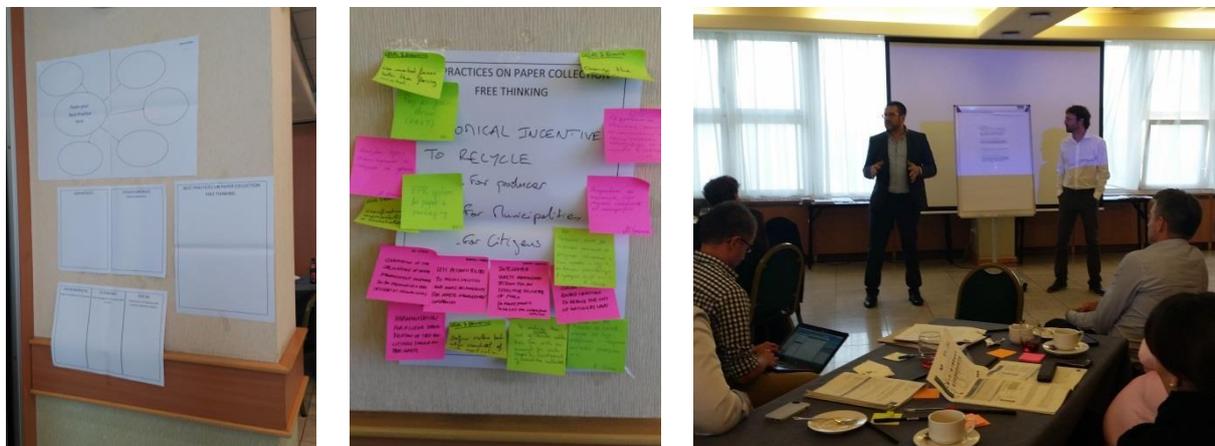


Figure 7: impressions from the internal workshop in Budapest, September 2016

3.1.1.1 Cluster Workshop

The goal of this workshop session was to define and analyse problems in paper and board collection. The work was carried out in four steps:

- Step 1: free thinking
'List problems in paper and board collection'
- Step 2: problem definition and analysis
'Choose one problem to work on. Write down aspects of the problem.'
- Step 3: grouping and relating
'Order the information acquired and detect patterns that may emerge'



- Step 4: creating insight statements
'Be more specific about the topics observed and start generating a mentality on how to solve them'

The participants were divided into four groups, focussing on different countries. At the end of the session, each group presented their main outcomes.

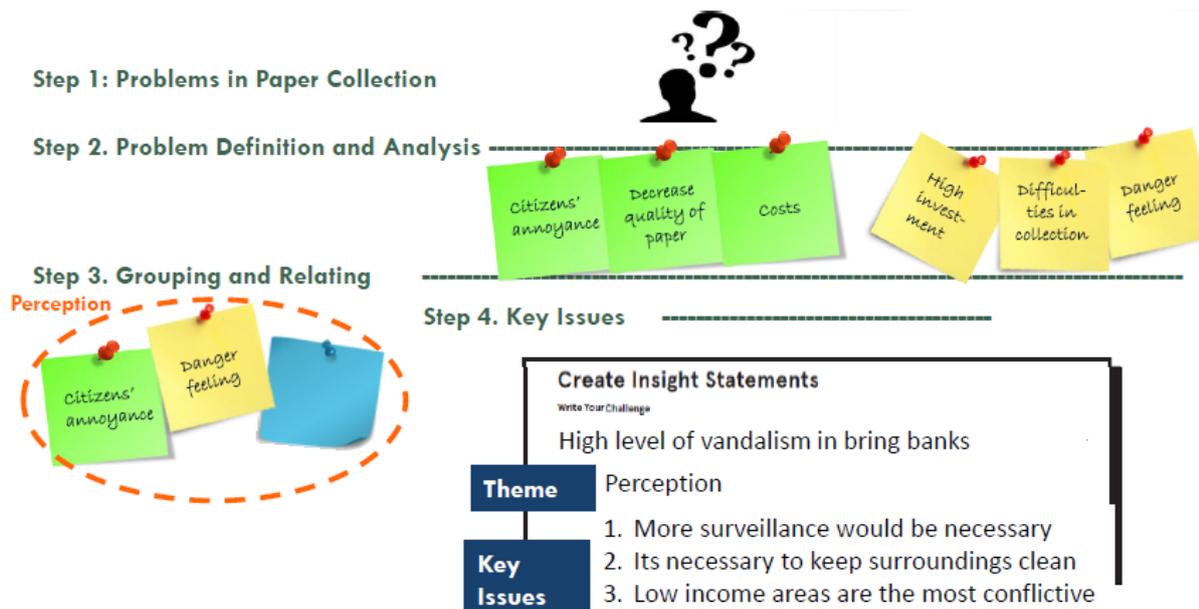


Figure 8: working procedure of cluster workshop 'problem analysis'

3.1.1.2 Best practice workshop

The goal of this workshop session was to identify and discuss GOOD PRACTICES for paper and board collection. The work was carried out in four steps:

- Step 1: free thinking
'Write down GOOD PRACTICES in paper and board collection.'
- Step 2: definition
'Select one example. Name conditions for the application of the GOOD PRACTICE.'
- Step 3: analysis
'Identify advantages of and main barriers to the GOOD PRACTICE chosen.'
- Step 4: evaluation
'Estimate the impact that the chosen GOOD PRACTICE might have if implemented.'

The participants were divided into four groups, focussing on different working topics:

- Operational aspects
- Legal and economic instruments
- Monitoring and control
- Information and communication

At the end of the session each group presented their main outcomes.

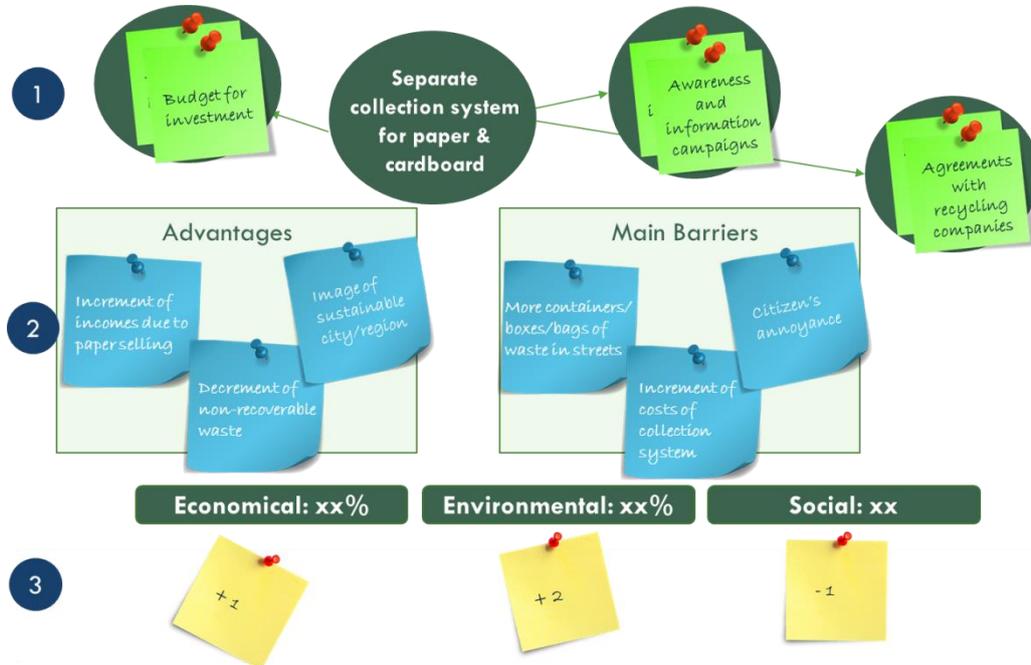


Figure 9: working procedure of the best practice workshop

The same working approach was used to analyse and evaluate the remaining GOOD PRACTICES by each BPWG member individually. The results were discussed in BPWG skype meetings.

3.1.2 Internal Workshop Barcelona

The second internal workshop was held during the project meeting in January 2017 in Barcelona. The members of the ESC were invited to join the sessions. Therefore representatives from some additional countries were present. To put this opportunity to good use, it was decided to have an additional 'mixed group' in the first session.

The workshop consisted of three sessions. Session 1 finalized the problem analysis and provided the basis for sessions 2 and 3.

- Session 1: cluster workshop
 - Cluster groups: Dupnitsa, Mezdra, Sfantu Gheorghe, Mihai Viteazu, Poland, 'Mixed'
 - Content: problem analysis - final discussion and prioritization
- Session 2 : best practice and innovation workshop
 - Best practice working groups (BPWG) and Innovation Working groups (INWG)
 - Content: idea generation for GOOD PRACTICES
- Session 3: cluster workshop
 - Cluster groups: Dupnitsa (BG), Mezdra (BG), Sfantu Gheorghe (RO), Mihai Viteazu (RO), Poland
 - Content: implementation of GOOD PRACTICES



Figure 10: impressions from internal workshop in Barcelona, January 2017

3.1.2.1 Cluster Workshop – problem analysis

A general problem analysis for paper and board collection was carried out based on the results of the cluster workshop in Budapest.⁶ The goal of this workshop session was to collect the feedback from the cluster territories. Based on the criteria ‘importance’ and ‘complexity’ the participants were asked to prioritize the identified CAUSES and CHALLENGES.

First, each participant was asked to answer a prepared questionnaire individually. Afterwards the ratings were discussed and the group agreed. As a result, the agreed prioritization of CAUSES and CHALLENGES was visualised with a matrix system. This work was carried out in three parts:

- Part 1: CAUSES for negative effects on paper and board collection
‘Please answer the questionnaire individually.’
‘Discuss your rating with the rest of your group. Find an agreement.’
- Part 2: CHALLENGES AND NEEDS addressing the identified causes
‘Please answer the questionnaire individually.’
‘Discuss your rating with the rest of your group. Find an agreement.’
- Part 3: sharing

The participants were divided into six groups, focussing on different cluster territories or countries. At the end of the session, each group presented their main outcomes.

⁶ The results of this problem analysis can be found in IMPACTPapeRec report D3.2 ‘Innovative models and best practices to be implemented in cities under study’.



1 Individual rating – 10 min

- Is the cause **not** relevant for your cluster?
→ **Please tick '0 (Not relevant)'**
- How important is the cause for your cluster?
→ **Please rate 'Importance'!**
- How difficult will it be to find a solution?
→ **Please rate 'Complexity'!**



#	Cause	0 Not relevant	1 Very low	2 Low	3 Medium	4 High	5 Very high
i	...		x				
		Importance					
		Complexity				x	

2 Discussion & Sticker Placing – 20 min

- Discussion in each Cluster Group
→ **Discuss your rating with the rest of your group!**
- Agreement for each cause
→ **Please find an agreement and place sticker for each cause on the wall poster!**



Importance ⇄

	1 Very Low	2 Low	3 Medium	4 High	5 Very high
1 Very Low					
2 Low					
3 Medium					
4 High					
5 Very high					



3 SHARING – 30 min

Results from each group – each 5 min



CAUSES

Importance ⇄

	1 Very Low	2 Low	3 Medium	4 High	5 Very high
1 Very Low					
2 Low					
3 Medium					
4 High					
5 Very high					

CHALLENGES

Impact ⇄

	1 Very Low	2 Low	3 Medium	4 High	5 Very high
1 Very Low					
2 Low					
3 Medium					
4 High					
5 Very high					

Figure 11: working procedure of cluster workshop 'problem analysis'

3.1.2.2 Best practice and innovation workshop

The goal of this workshop session was to name and discuss additional GOOD PRACTICES, focussing on those CHALLENGES prioritized during the first session. The work was carried out in three steps:

- Step 1: free thinking
'Write down ideas that address the prioritized CHALLENGES.'
- Step 2: sharing
'Discuss the ideas with your group.'
- Step 3: prioritization
'Give green dots to your favourite ideas. You can give two sticking dots per CHALLENGE.'



The participants were divided into five groups, focussing on different working topics:

- Operational aspects
- Legal and economic instruments
- Monitoring and control
- Information and communication
- Informal sector

Group 5 held a special discussion the topic *informal sector*, focussing on the Bulgarian case. The chapter 3.3.2 gives a summary of the results.

At the end of the session, each group presented their main outcomes. The results are integrated in an updated list of GOOD PRACTICES and will be further analysed by the BPWGs.



Figure 12: some results of the best practice and innovation workshop in Barcelona, January 2017

3.1.2.3 Cluster Workshop – implementation of GOOD PRACTICES

The goal of this session was to discuss the needs for and barriers to the implementation of GOOD PRACTICES. A GOOD PRACTICES list was prepared based on the results of the first internal workshop in Budapest (session 2). According to the CHALLENGES that were prioritized by each cluster group (session 1), the corresponding GOOD PRACTICES were chosen for this session.

The work was carried out in three steps:

- Step 1: prioritizing GOOD PRACTICE
'Please evaluate each GOOD PRACTICE regarding the criteria impact and feasibility'⁷
- Step 2: discussing implementation (starting with prioritized)
'Do you already know this GOOD PRACTICE and is it used in your region?'
'What would you need to implement the GOOD PRACTICE?'
'What are the barriers to its implementation?'
- Step 3: sharing

⁷ As a variation of the NUF Test (see Fehler! Verweisquelle konnte nicht gefunden werden.)



Date: 31st March 2017

The participants were divided into five groups, focussing on different cluster territories or countries. At the end of the session, each group presented their main outcomes.

3.1.3 Informative meeting in Barcelona

The first informative meeting of IMPACTPapeRec was held in combination with the project conference in Barcelona in January 2017. The meeting consisted of different interactive sessions to maximize the input from the public audience:

- ❖ Part I: World Café
 - Session 1: Incentives
 - Session 2: Policy Making
 - Session 3: Standardization
- ❖ Part II: GOOD PRACTICE Gallery

World Café – incentives, policy making, standardization

The goal of this first informative meeting was to gather initial views, ideas and opinions on how to improve paper and board collection. Part I focussed on the three topics incentives, policy making and standardization. To enable fruitful discussions in small groups, it was decided to use a modification of the Word Café method. The topics were discussed in three successive sessions. The participants were divided into groups of 4-5 people, working in parallel on the same topic and changing the table after each session. Each session consisted of three steps:

- Step 1: introduction (key notes by the 'host')
- Step 2: free thinking, writing on post-its and sharing
- Step 3: prioritizing



Figure 13: impressions from the world café in Barcelona, January 2017

For each topic, the groups had two specific questions to work on:

Incentives

1. What incentives for paper and board collection do you know?
2. Could you imagine other incentives that don't exist yet?



Policy making

1. *What do you think about the above policy recommendations?*
2. *Do you have any other proposals for policy recommendations?*

Standardization

1. *Which new challenges do we have to face within the Paper for Recycling industry and can standardization play a key role in promoting the implementation of these new solutions?*
2. *Are there aspects (e. g. country-specific guidelines, laws, etc.) which inhibit EU-wide uniform standards?*

Gallery on GOOD PRACTICES

The second part of the informative meeting was the ‘exhibition’ of the current GOOD PRACTICES list. Each GOOD PRACTICE was displayed with a description and picture. The participants were asked to walk through this ‘gallery’ and give a feedback: select ideas they like, show which they don’t consider to be GOOD PRACTICES, add critique, comments and other ideas.



Figure 14: Impressions from the GOOD PRACTICE gallery in Barcelona, January 2017

3.1.4 Best practice handbook sessions

One of the main outcomes of the IMPACTPapeRec project will be a *BEST PRACTICE Handbook* for paper and board collection. To ensure that this guideline addresses the key aspects and is easy to use, the partners are periodically asked for their feedback. During the project meetings in Budapest and Barcelona, the participants were asked to share their comments and ideas by writing them on post-its:

- Budapest, September 2016
‘What do you expect from the handbook?’
- Barcelona, January 2017
‘How could you benefit from the handbook?’



'Which is the most important part for you?'
'Which important topics do you miss in the proposed structure?'



Figure 15: impressions from the 'handbook session' in Budapest, September 2016

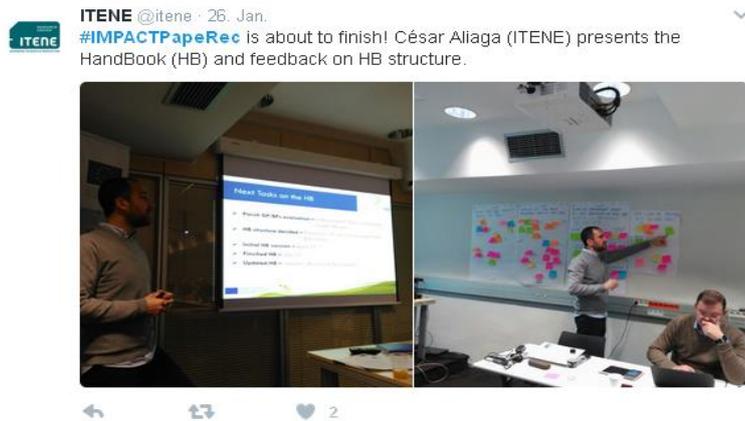
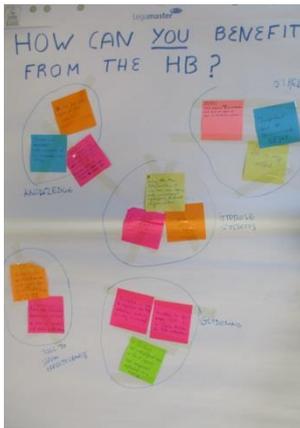


Figure 16: impressions from the handbook session in Barcelona, January 2017

3.2 Innovation node working groups (INWG)

To avoid too much confusion with the different kinds of working groups, a decision was taken to let the best practice working groups (BPWG) also act as innovation node working groups (INWG):

- Operational aspects (INWG 1)
- Legal and economic instruments (INWG2)
- Monitoring and control (INWG 3)
- Information and communication (INWG 4)

However, additional groups can be formed to work on specific topics if necessary.



3.3 First results

3.3.1 INWG 1 to 4 – smart solutions

During the ‘best practice and innovation workshop’ in Barcelona, January 2017, several ideas were generated that could be summarized as ‘smart solutions’. Most of the solutions mentioned are already available on the market. However, most of these innovations are still in the diffusion phase.

Table 4: some ideas from the internal workshop concerning ‘smart solutions’

challenge	idea	type
make sufficient volume available	Automatic sensors that measure the filling level of the containers	Smart bins and containers
	optimization of collection routes	Smart logistics
	book collection slots to predict necessary volumes	Mobile phone app
Increase convenience for citizens	Reminder for the day of collection	Mobile phone app
Provide instructions on how to separate	interactive instructions at bin (LED screen, QR code, talking)	Smart bins and containers
Ensure the transparency of the system	Publish data on waste and recyclables management system	Open government

3.3.2 INWG5 - Informal Sector

At the beginning of the problem analysis session, the activities of the informal sector were identified as a specific topic of innovation need. [16] Anne Scheinberg, an informal sector expert, was invited to give a presentation in the project conference and to join the ESC of IMPACTPapeRec. As Anne Scheinberg took part in the internal workshop in Barcelona this INWG had an initial discussion and brainstorming session about the problem and possible solutions. The results of this group work show that innovation in this field could be enabled mainly by policy making, standardization and incentives. Therefore, the corresponding tasks within WP3 should continue to work with the ideas.

Jurisdiction

The system for the recovery and recycling of paper & board and other fractions of packaging waste in Bulgaria is currently managed by recovery organizations (EKOPAK, EKOBULPAK, BULEKOPAK and EKOCOLLECT). Municipalities only have the obligation to make a contract with a recovery organization in order to enable primary selection of packaging waste. They have no influence on the collection system (selection of bins, bring banks, etc.), on the selection of companies that will collect recyclables nor on how material will be processed and sold.



Possible solutions:

- Empower municipalities to take full responsibility for paper and board collection and sales. Every municipality should make own decisions regarding the selection of appropriate bins, bring banks, companies that will provide collection services.
- Enable municipalities to identify and apply incentives to include the informal sector in the collection process (using ID cards and micro-routes).
- Any decision on the final sales of paper and board must be in the hands of the municipalities. This way, municipalities' representatives will have ability to make decisions and closely monitor all aspects of the process.

Standardization

There is no standardization in Bulgaria regarding the education, validation or regulations concerning the collection of paper and board by the informal sector.

Possible solution:

- A clear description of the "street collector" as an occupation, with standardized trainings on rules, regulations and safety aspects, followed by certification. Standardization should be adopted at the national level.

Incentives

One of the greatest problems with the informal sector is their avoidance of paying taxes, social contributions, etc. That makes it even more difficult to include them in the official system.

Possible solution:

- Greater motivation for their inclusion in the system can be achieved by providing an incentive, whereby all the money informal collectors have paid in taxes will be refunded to them plus some bonuses for conducting business by the law.



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