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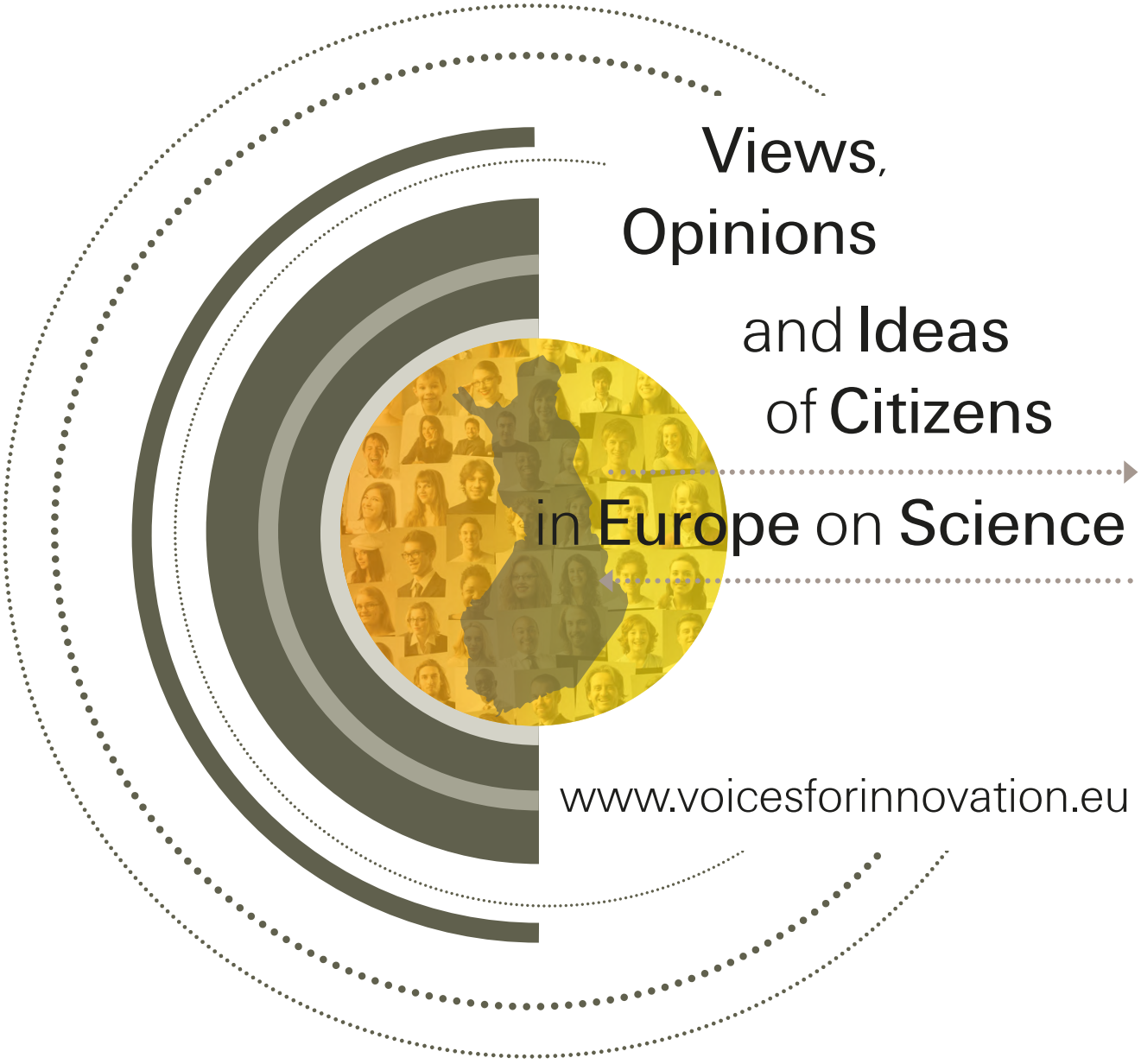

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Views, Opinions and Ideas of Citizens in Europe on Science

COUNTRY REPORT FINLAND

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For more information on the report, the results of the VOICES project, please contact Marzia Mazzonetto (mmazzonetto@ecsite.eu).

CONTENTS

1. Introduction

1.1 The VOICES project

VOICES (Views, Opinions and Ideas of Citizens in Europe on Science) is a year-long, Europe-wide citizen consultation exploring the concept of waste as a resource. It represents an innovative method of integrating public opinion into the 'Climate action, resource efficiency, raw materials' dimension of the Horizon 2020 Work Programmes beginning in 2014.

Funded by the European Commission and led by Ecsite, the European network of science centres and museums, the VOICES project is a response to the Science in Society 2013.1.2.1-1 call on citizen participation in science and technology policy. Citizens are invited to give input to the Consolidation Group that will define the priorities for the next work programme on 'Urban Waste' (call SiS.2013.1.2.1-2).

The main aim of VOICES is to yield valuable insight on methods and procedure for engaging citizen participation to help set the research agenda for Europe's Responsible Research and Innovation framework. The knowledge gained through VOICES will be put to use in similar participatory actions across Horizon 2020.

1.2 Citizen participation in social innovation

A national and European capacity-building initiative, VOICES unites science communication practitioners and academics, and, as such, will result in an effective method through which to consult the public on science and technology related issues.

Compared to many other consultation initiatives, VOICES represents a breakthrough because of its scale (covering all of Europe) and because of the methodological approach used on this wide scale: an approach which makes use of a qualitative methodology, which allows a harvesting and deep understanding of citizens' views, fostering real governance processes and social innovation.

VOICES is also very innovative in its commitment to formally include the results of the citizens' consultations in the main policy document that will shape the priorities of European research. Another unique element is that the knowledge gained with this pilot, in terms of methodology, infrastructure and results, can be used to organise similar participatory actions across Horizon 2020.

1.3 The process

One thousand European citizens participated in focus group discussions about 'Waste as a resource' using a structured VOICES methodology which spans training, implementation and analysis. The methods, infrastructure and results of VOICES are fully documented on an open access portal (www.voicesforinnovation.eu) designed for similar participatory actions occurring throughout Horizon 2020.

VOICES engaged citizens in 33 locations covering 27 EU countries. 28 Ecsite network institutions make up the Third Party task force which organised the 100 focus groups, with approximately ten citizens each, in their respective countries.

Ecsite Project Managers and researchers from the Athena Institute, VU University Amsterdam, were responsible for conducting the focus groups, analyzing public consultations, writing the country and synthesis reports and disseminating their outcomes at public events.

1.4 Structure of the report

In this country report on the VOICES outcomes from Finland, the VOICES research methodology is further detailed in the following chapter. In Chapter 3, some specific data is provided on the country's population, on national urban waste figures and on specificities of the participants of the focus groups. Chapter 4 presents the results of the citizens' consultation on waste management at household level, barriers and concerns experienced in prevention and management of waste, and ideas for research and innovation, policy, management and communication. The report ends with a summary and discussion of the findings.

2. Methodology

This section provides general information about the focus group method, and in particular about the VOICES approach. It also describes the structure of the VOICES focus groups and the process of data analysis.

As a qualitative research method, the focus group is increasingly used in political and social sciences, and can be defined as "a carefully planned discussion designed to obtain perceptions on a defined area of interest in a permissive, non-threatening environment".[1] An important advantage of focus groups in comparison to other research methods is that participants can respond to and build on the views expressed by the other participants. Because of this interaction, focus groups generate a large variety of opinions and ideas which provide insightful information, while maintaining a specific focus during the discussion. The method provides the opportunity to gain in-depth insight into ideas, values, wishes and concerns of participants and stimulates shared creative thinking. A specific characteristic of the focus group method is that it seeks understanding of a research topic from a particular perspective; in the case of the VOICES project, the perspective of European citizens.

2.1 The VOICES focus group approach

In the VOICES project, a total of 100 focus groups were held, each of them with approximately 10 citizens. Participants were selected by local recruitment agencies, according to predefined selection criteria. The selection criteria were applied in order to obtain diversity in focus group participants, and to represent society at large. General selection criteria with respect to demographic information included: sex (50% men and 50% women), education (low, medium and high levels of education)[2] and employment (employed, unemployed, retired and student). The focus groups were stratified by age using the following categories: 18 to 35 years of age, 36 to 50 years of age and 50+. Other criteria addressed elements relevant to the VOICES project's specific topic, including: participants from urban and non-urban areas[3], diversity of types of municipality (at least five different municipalities, including bigger towns and smaller villages), and diversity of housing situation (flat or house). These selection criteria were applied in all EU member states. Because of the local context and the availability of participants there are minor differences between member states in the resulting composition of focus groups.

In most EU member states, three focus groups were conducted, all in one location. However, all member states with a population of above 25 million (Germany, France, Spain, Poland, Italy and the UK) had two sets of three focus groups each in two different locations, resulting in six focus groups in total in these countries.

The focus groups lasted 3 hours and followed a semi-structured script consisting of an introduction, four main exercises and an evaluation part (see box 2.1). During the focus groups, specific attention was paid to keeping the environment noise-free and providing enough space to relax, walk around and engage in the conversation. Each focus group was led by a moderator, who was in charge of stimulating and guiding the discussion. The moderator's role was also to maintain the focus of the discussion by ensuring that key themes were covered, while managing group dynamics.

Moderators facilitated the discussion by following the focus group script, which was provided to them in advance and contained questions and exercises to guide their work and ensure equal individual input as well as group discussion. Because of their crucial role in the focus groups, all moderators involved in the VOICES project followed a specific 2.5 day training course. The training focused on specificities of the VOICES focus group script as well as on refining important competencies of the moderators' role, including interpersonal communication, process management and understanding of the topic addressed.

In order to capture the data generated during the process, audio and/or video recordings were made of all focus groups. A note taker was also required to be present for the entire duration of the focus groups, in order to record additional data and to assist the moderator. All visual data generated by the participants, for example, individual drawings or collective mind maps, were collected at the end of each focus group and photographed.

BOX 2.1 SUMMARY OF VOICES FOCUS GROUP SCRIPT

INTRODUCTION

The moderator introduces himself/herself, the note taker and any observers and asks the participants to introduce themselves. The moderator then explains the aims and topic of the focus group using a PowerPoint presentation.

EXERCISE 1

The goal of Exercise 1 is to raise the focus group participants' awareness of household waste and related waste management systems. It also identifies what people know and do with respect to their household waste. Participants are asked to draw on an A3 sheet of white paper how they think the waste streams are managed around their house. When they have finished, the papers are collected and taped to the wall. The moderator then asks the participants to explain their drawings and encourages them to elaborate.

EXERCISE 2
Exercise 2 aims to identify barriers and concerns of the participants with respect to current urban waste pathways (including prevention) and to go into more depth on the causes and underlying reasons for the reported barriers and concerns. The moderator shows the participants PowerPoint slides about the four most common pathways of waste and prevention. After this, participants are asked to think about barriers and concerns they experience regarding waste, waste management and prevention of waste and to write two examples of these barriers or concerns down on Post-Its. The Post-Its are collected and for each, the moderator asks the participants to explain what they wrote down and why.

EXERCISE 3
The objective of Exercise 3 is to stimulate creative ideas for improvement and solutions for problems and possibly to translate ideas and solutions into research topics or questions. The moderator introduces the concept of a 'zero waste society' to the participants using PowerPoint slides. The participants are then asked to work in groups and brainstorm about ideas for achieving the aims of a 'zero waste society', focusing especially on what research and innovation would be needed for this. Participants are then asked to present their ideas to the entire group, while the moderator uses a flip chart to list all concrete ideas for research and innovation suggested by the participants. The moderator then asks the participants to reflect further on possible futuristic technical solutions and 'wild' ideas regarding waste management and prevention.

EXERCISE 4
The aim of Exercise 4 is to attribute a level of priority to the research topics formulated in Exercise 3.
Participants are given three stickers, which represent money (1 million each) that they can spend on ideas written down during Exercise 3. They are asked to assign one or more stickers to the ideas that they feel should be prioritised because of the importance of the problem it addresses and/or the quality of the solution it provides. Once the participants have assigned their stickers, a plenary discussion is held to talk about which ideas got the most stickers and why.

EVALUATION
The moderator ends the sessions and asks the participants to share feedback on their experience taking part in the VOICES focus group. Participants are also asked to fill in an evaluation questionnaire.

2.2 The VOICES approach to urban waste

In the focus groups, citizens of Europe were consulted on the topic 'Waste as a resource'. Urban waste is defined as solid waste collected by or on behalf of municipal authorities and disposed of through the waste management system. Most of this waste is produced by households, although similar waste from sources such as commerce, offices and public institutions are included. Consumer products disposed of by citizens, like clothes, electronics and furniture etcetera, are also considered urban waste. Industrial waste is not considered urban waste and is outside the scope of this project. On average, each of the 500 million people living in the EU throws away around half a tonne of household rubbish every year.[4] This amounts to 70 million truckloads of household rubbish for the EU as a whole every year (one truckload is considered to be 3500 kg, the maximum weight for a truck). All this waste has a huge impact on the environment, resulting in pollution and greenhouse gas emissions that contribute to climate change, as well as significant loss of materials - a particular problem for the EU, which is highly dependent on imported raw materials. Current EU policy aims to reduce both the environmental impact of waste and the use of raw materials needed for production processes. Nowadays, the challenge of urban waste is approached from two perspectives; the waste hierarchy and the life-cycle approach. These combined approaches are the building blocks of the current thematic strategy on waste.[5]

In order for the results of the focus groups to be translated into outcomes which are relevant and beneficial for European research, the VOICES focus group design explicitly uses these same two approaches in presenting the topic of urban waste and in structuring the exercises. The vision of a 'zero waste society' is used as a

focus for the participants while thinking about possible innovations and the techniques and knowledge necessary to develop them.

The waste hierarchy is initially depicted as a pyramid with a wide base representing disposal in a landfill, a second layer representing recovery of energy through incineration, a third layer representing recycling, a fourth representing reuse and the top (and smallest one) representing prevention. This reflects the current situation of waste management in Europe. In order to achieve a 'zero waste society', this pyramid should be turned around and its top, prevention, should become very wide while its base, landfill, very narrow.

The five-step waste hierarchy can be used as a rule of thumb when choosing between options of waste management, with prevention as the most preferred and disposal in landfill as a last resort. However, all products and services have environmental impacts in various stages of their existence. To avoid shifting negative impact from one stage to another, the life-cycle approach is also considered. Life-cycle thinking involves looking at all stages of a product's life - from the extraction of raw materials for their production to their manufacture, distribution, use and disposal - to find out where improvements can be made to reduce environmental impacts and use of resources.

2.3 Analysis of the focus groups

After each focus group, a summary report was written by the moderators based on the note taker's notes and the information on the flip charts. A draft of this summary report was sent to the focus group participants who were asked to comment on it. Moderators collected any feedback and included it in the final version of the summary report as an annex. The audio recording of each focus group was transcribed word-for-word and translated into English for analysis. The translated transcripts were coded and analysed using MaxQDA, a programme for qualitative data analysis. For the analysis of the data, both structured analysis as well as open coding were used. Structured analysis was carried out by using a predesigned coding sheet based on preliminary research. This type of analysis allows for all relevant outcomes to be extracted from the raw data. Open coding runs parallel to the structured analysis and allows for insights unforeseen by preliminary research to emerge. The summary reports of the individual focus groups have been used to validate and complement the analysis.

2.4 Ethical issues

At the beginning of the focus groups, all participants were asked to sign an informed consent form providing information on the topic and aims of the focus group. It was explained that participation was voluntary and participants were free to withdraw at any time, without giving reason. The form obtained participants' approval for audio and video-recording of the focus group, for the use of the resulting data for research purposes, including the use of anonymous quotes, and for data storage for five years. All data were processed anonymously.

[1] Krueger R.A. (1994). Focus Groups: A Practical Guide for Applied Research. Sage: Thousand Oaks, California

[2] The typology of low, medium and high education level is based on the International Standard Classification of Education (http://en.wikipedia.org/wiki/International_Standard_Classification_of_Education)

[3] The urban-rural typology is based on the new urban/rural typology developed by the European Commission (http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/Urban-rural_typology)

[4] Questions and Answers, Thematic Strategy on the prevention and recycling of waste and the proposal for the revision of the Waste Framework Directive (Available at: http://ec.europa.eu/environment/waste/pdf/faq.pdf)

[5] Report from the Commission to the European Parliament, the Council, the European Economic and Social Committee of the Regions on the Thematic Strategy on the Prevention and Recycling of Waste, Brussels, 19.1.2011, COM (2011) 13 final; EU Waste Policy - The Story behind the strategy, 2006

FINLAND

3. Country relevant data - Finland

This chapter of the report presents relevant data about the country and local focus groups. This includes demographic data, data related specifically to local waste management and information concerning the setting of the local focus groups.

3.1 Demographic country data

In terms of population, Finland is one of the smaller EU countries with almost 5.4 million inhabitants. The inhabitants are spread over rural areas (43%) as well as intermediate areas (31%) and urban areas (27%).

Table. 3.1 Population Data[6,7,8]

		2011	
Population at 1 January		5 375 276	
Population as percentage of EU27		1.1%	
Gross Domestic Product (PPP)		28 800 Euro	
Population urban-rural typology	Urban	1 436 000	27%
	Intermediate	1 646 000	31%
	Rural	2 294 00	43%

3.2 Factsheet on waste

The amount of municipal waste generated and treated in Finland is slightly higher than the average amount of waste treated in the EU27. Finland ranks 13th on the EU27 ranking list on Municipal Solid Waste Recycling (MSW). Recycling has consistently remained at a level of about 35% of MSW generated during the whole period from 2001 to 2010. A significant effort would be required in order to meet the EU requirement on 50% MSW recycling in 2020.[9]

Table 3.2 Municipal Waste[10,11]

		Finland		EU27 average	
Municipal waste generated (kg per person)		470 kg		502 kg	
Municipal waste treated (kg per person)		470 kg		486 kg	
	Landfilled	212 kg	45%	185 kg	38%
	Incinerated	103 kg	22%	107 kg	22%
	Recycled (material recycling)	94 kg	20%	122 kg	25%
	Composted (organic recycling)	61 kg	13%	73 kg	15%

3.3 Composition of the focus groups

In Finland three focus groups (FGs) took place on the weekend of 23rd March 2013 in Vantaa at Heureka, the Finnish Science Centre. They were moderated by Siina Vasama, Event Producer at Heureka.

In total, 30 people (15 male and 15 female) participated in the three FGs. The age of the participants ranged between 20 and 68 years of age: 10 participants were aged between 18 and 34; 10 between 35 and 50 and 10 were 51 or over. Educational levels were diverse, with 8 participants with a high level of education, 10 a medium level and 12 participants with a low level of education. 22 participants had a job, while 2 were unemployed, 3 were retired and 3 were students. Of the participants, 14 live in a house and 16 in a flat. Details of the composition of these focus groups are presented in the table below.

Table 3.3 Composition of the Focus Groups

		FG1	FG2	FG3	TOTAL
Participants	Total	10	10	10	30
Gender	Male	5	5	5	15
	Female	5	5	5	15
Age	18 - 35	0	10	0	10
	36 - 50	10	0	0	10
	50+	0	0	10	10
Education	High	3	3	2	8
	Medium	4	3	3	10
	Low	3	4	5	12
Employment	Unemployed	1	1	0	2
	Employed	9	6	7	22
	Retired	0	0	3	3
	Student	0	3	0	3
Housing	Flat	4	5	5	14
	House	6	5	5	16

[6] Eurostat Statistics Database Online (http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/search_database)
[7] Eurostat Newsrelease (http://europa.eu/rapid/press-release_STAT-12-51_en.pdf)
[8] The urban-rural typology is based on the new urban/rural typology developed by the European Commission (http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/Urban-rural_typology)
[9] European Environment Agency (2013). "Managing municipal solid waste - a review of achievements in 32 European countries" EEA Report No 2/2013 (http://www.eea.europa.eu/publications/managing-municipal-solid-waste)
[10] Eurostat Newsrelease (http://europa.eu/rapid/press-release_STAT-12-48_en.pdf)
[11] The reported quantities of waste *generated* and *treated* do not always match exactly due to one (or more) of the following reasons: Estimates for the population not covered by collection schemes; Weight losses due to dehydration; Double counts of waste undergoing two or more treatment steps; Exports and imports of waste; Time lags between generation and treatment (temporary storage)

4. Results

This chapter describes the overall results of all focus groups held in Finland. The chapter includes three sections, which are structured according to the exercises of the focus groups. The first section provides insight into what people think and do with respect to waste management at the household level. The second section provides an overview of barriers and concerns of the participants about current urban waste prevention and management, and identifies underlying reasons for the reported barriers and concerns. The third section presents participants' ideas for research and innovation needed in order to achieve a 'zero waste society' including concrete information on the research category, the aim of the research, the proposed target group and the perceived priority of the research idea. Participants' ideas for policy, management and communication are included as well. Throughout the results, quotes of focus group participants are provided for illustrative purposes.[12]

4.1 How is waste managed at household level?

This section describes what people know and do with respect to household waste. It includes four parts. First, an overview is given of the types of waste that are generally collected separately and those that go in the general bin. The second part provides insight into how the waste is collected, while the third part describes what participants think happens to the waste after it is collected. The fourth part describes whether people deal with waste as they are supposed to and to what extent they think waste management is conveniently organised.

4.1.1 Waste separation

The vast majority of participants indicated they have to separate waste. The kinds of waste that are separated vary across municipalities. Some participants explained they have to separate glass, energy waste, paper, cardboard, newspapers and batteries whereas others explained there are only general waste bins in their municipality. Most of times, personal bins are used for collection of waste in detached houses and shared bins for collective housing. Most of the detached houses have their own compost heaps for the processing of biowaste whereas the flats or collective houses have a separate bin for biowaste.

As well as the types of waste mentioned above, various other types of waste were discussed. Participants talked about glass bottles that can be returned to the shops. In most municipalities, metals are not separately collected, but one participant explained that it is possible to make money by returning scrap metals to waste tips or recycle centres.

Housing situations influence the ways in which waste is separated and disposed of. In some housing corporations there are large bins (or containers) in the basement or close by where residents can dispose of separated waste. In private or detached houses, residents have private bins, or need to return their waste to collective bins at some distance.

[12] Abbreviations used in quotes: FG# = number of focus group, P# = number of specific focus group participant, PX = number of focus group participant unknown, M = Moderator.

4.1.2 Waste collection

Waste collection is quite different in each municipality: some participants explained that most of the waste streams are collected in or close to home whereas other indicated they have to take certain types of waste somewhere else, sometimes over long distances. For some participants, waste separation bins are on the premises while others indicated they have to take their waste up 500 metres away. When waste is collected close to home, it mostly concerns glass, paper, biowaste and mixed waste. Typically, batteries are taken either to schools or to grocery shops that have collection points for them.

Large waste, for example furniture or household appliances, has to be taken to the tip or to the recycle centre. For some of these objects, mostly electronic, people receive money when returning them. On the other hand, participants explained they have to pay a fee when they bring things to recycle centres or tips. The distance for these disposal sites differs greatly per municipality, as do the fees that have to be paid to bring waste.

4.1.3 Knowledge about waste pathways

The majority of participants either had no specific knowledge on waste pathways or explicitly stated their knowledge on waste management is limited or nonexistent. Some of the participants had heard about separated waste ending up in a landfill after collection. However, others explained that in Finland a lot of waste is brought to recycling centres, or is managed in a sustainable manner. One participant knew that glass and metals are melted and reused for other purposes.
One participant gave an interesting explanation for this lack of knowledge on waste management. In his opinion, problems with urban waste are not high on the public agenda, because citizens are not actively involved in waste management issues. Once in a while the waste is picked up and that is the last one sees of it:

> *"[...] I think that we've managed to distance ourselves from the problem of waste. Lorries usually take it away, at least from our place." (Finland FG2, P8)*

4.1.4 Waste management behaviour and convenience

The convenience of waste separation and disposal varied from one individual to another. Some of the participants were really pleased with the distance to disposal bins and the frequency with which they are emptied by waste management companies. Some participants, however, explained that some bins, for example for glass, are located too far away or that they do not know a closer location. Another reason mentioned for not dealing with waste correctly is that waste bins are often full, because they are not emptied often, and residents then have to put separable waste in the general waste bin.

4.2 Barriers and concerns regarding urban waste

This section provides an overview of the participants' views on barriers and concerns with respect to current urban waste and identifies underlying reasons for the reported barriers and concerns. The section consists of four parts. The first part, 'Waste prevention and production', focuses on barriers and concerns related to goods in the phase before they enter the household. The second part, 'Waste management in the household', addresses goods and waste in the phase while they are in the household. The third part, 'Waste disposal and pathways', describes barriers and concerns related to the phase in which waste is disposed. Relevant issues related to urban waste management that could not specifically be related to the three parts mentioned before are described in the fourth section, 'Other urban waste issues'.

4.2.1 Waste prevention and production

Within the cluster 'waste prevention and production', two main themes were discussed among participants. Firstly and most frequently discussed, was the production of cheap and low quality products. According to the participants, new appliances or other commodities are made to break down very quickly, so they have to be replaced quickly:

> *"I also had the same, the same concern. That the lifespan of appliances and electronics seems to be very short. It's just about the period of guarantee." (Finland FG2, P1)*

The second major theme concerned the ways in which modern goods are packaged. There is too much unnecessary packaging, especially when multiple materials are used to package one product. People also increasingly buy individual ready meals, which are all separately packaged. One participant explained that this unnecessary production of waste is forced upon the consumers. She felt like she has no control on these things:

> *"I feel that I've very few chances to influence matters, as I have to buy food anyway, and then I accumulate plastic and other things, more than I would wish." (Finland FG2, P8)*

A final topic that was brought up by a minority of the participants was the distribution of plastic bags. People have got used to receiving plastic bags at the shops so they stopped bringing their own bags them with them. Also, every shop hands over their goods in a new plastic bag.

4.2.2 Waste management in the household

Barriers and concerns regarding waste management in the household were sparse and were not further elaborated on. One topic concerned separation of waste. It takes up a lot of space in the house because of the various waste bins. Additionally, a minority of the participants explained that there is little information on what waste has to be sorted and where to bring it. Also, some packages are made of mixed materials, for example paper combined with plastic and iron staples, which makes it hard to separate. Other issues that arose included the costs of waste management, because in some municipalities waste taxes are included in rental agreements. Another problem came from one participant that described the difficulties she has with teaching her children how and when to separate waste. A final topic revolved around composting as some participants explained they did not know what materials are allowed on their private composter and because of this some compostable waste would inevitably end up in the mixed waste stream.

4.2.3 Waste disposal and pathways

The majority of barriers and concerns discussed in the focus groups involved the disposal of waste. The most frequently discussed topic was the distance that needs to be travelled to dispose of one's waste. For some of the participants the containers for certain types of waste, such as glass or paper, are more than a kilometre away. This results in people dumping those forms of waste in the general waste bin. Other participants expressed their concerns regarding distances for larger household goods and machines. They explained that for large household appliances you actually need a car to bring it somewhere, and most of the times you even have to pay for bringing it there. Other participants explained that the trouble with large distances, combined with other factors like costs to dispose of old furniture, results in people disposing waste illegally in the woods.

> *"... my own situation is good in the sense that some 10 kilometres away there's a so-called sorting station where people can take their stuff. And, you know, even sort those larger items, if one happens to have a trailer or is able to borrow one. But the down side is that they usually charge." (Finland FG2, P2)*

A second topic surrounded the collection times and dates of different types of waste. First, many participants explained there is a general lack of information on what waste is collected where and when. Therefore, participants do not know when they have to bring their waste to a pick-up point. Second, some participants disagreed with collection schemes. They explained that sometimes waste management companies come to collect bins that are still empty and that residents still have to pay for this. Additionally, the production of some types of waste varies by season. Biowaste, in particular, is produced in bigger quantities in the spring and the autumn. This is further complicated by the inflexibility of waste collection companies that are not prepared to skip one collection day in the case of an empty container or to come an extra time in case a container is full.

4.2.4 Other urban waste issues

In this category, three topics were discussed, the first of which was people's attitudes. Participants explained that people are generally lazy and disinterested in waste and waste management. Other people do not separate waste as they should and just put everything in the general waste bin. An explanation for this was a lack of information and awareness; the waste management problem is no longer seen as a problem of individual citizens.

Secondly, participants frequently discussed the way in which the world economy is structured. They explained that they live in a consumer economy, which stimulates people to buy more and more. The economy, according to the participants, is based upon the idea that economic growth stems from as much consumption of goods as possible. Moreover, it is not 'fashionable' to recycle or repair broken goods; consumers now replace all goods that don't fit their needs anymore without looking at more sustainable options. One of the participants explained that even if you want to get usable things from tips or recycle centres they cannot give it to you either because of costs or because of municipal legislation. In this way, a lot of raw materials are used and a lot of waste is produced. Consumerism, in turn, prevents people from actively recycling usable items.

A final topic, which was brought up also as a cause for the two problems discussed above, is the international nature of the waste problem. Some participants explained that it is hard to stay motivated and dispose of waste correctly if you know that people in other parts of the world pay no attention whatsoever to recycling. One person clarified:

> *"Especially the fact that people don't see what's so wrong with it. Well, in a way, people's perception on the matter and their opinion on it, it is shaped on the basis of what for example has been broadcast on China lately, that China is producing as much waste into the world as the rest of the world put together. Well, this encourages the tendency to think that nothing really matters. What am I saying? That in a way, one feels like a grain of sand in the Sahara." (Finland FG2, P3)*

4.3 Citizens' ideas on how to realise a 'zero waste society'

This section presents participants' ideas for achieving a 'zero waste society'. A distinction is made between ideas related to environmental sciences and technology, and ideas related to policy, management and communication. Below, these ideas are described separately in tables. For each idea in the table, the research category is mentioned as well as the aim of the research and the proposed target group. In addition, the priority of the research idea as perceived by the participants is indicated in the tables, using stars to indicate the number of stickers assigned to a specific idea by the participants. Only ideas that were prioritised by the participants are described in this section. Ideas that were not prioritised are included in the full list of research ideas which is provided in Annex 1.

4.3.1 Environmental sciences and technology

TECHNICAL, PHYSICAL, CHEMICAL, ENGINEERING

In the cluster 'technological innovations,' four future technologies were prioritised. Firstly, participants talked about a 3D printer that would enable them to print objects in their houses. One participant stated that such a 3D printer exists, but is not yet available for the larger public. The vision of the 3D printer was that it could print anything you need in the house, like a mobile phone, or even food such as pizza. One participant stated that this printer could also be used to print spare parts of broken machines. For machines, one participant explained, it could also be possible that you do not have to buy the product itself anymore, but that you purchase the designs of the product online and have your printer then print it.

> *"Yeah, but what I mean is that this is my vision that I would be able to print out the products that I make. And the scheme, the instruction for the printer showing how to print, that I could purchase it electronically." (Finland FG2, P3)*

The aim of this idea is that already recycled materials can be used as resources for this printer, so that fewer natural resources are needed for the production of new goods. Additionally, since the goods are now produced on-site, there is no need for transportation and packaging, which will lead to less waste production.

The technological innovation that was most discussed, but ranked as second, concerned waste management in the household. All such technologies referred to the separation and processing of waste at home.

> *"We thought of this sort of self-sufficient waste processing technology like these biopurification facilities, then in a way expanding them to handle different sorts of waste ourselves so that we don't have to take them anywhere but so we can process them then further in certain places so in certain connections." (Finland FG3, P5)*

As an example of such a technology, one participant introduced the idea of a machine that could be integrated in the kitchen. Waste can be thrown in this machine, one can specify what kind of waste it is, and then a kind of shaft would automatically take it to the waste management site where that specific type of waste will be processed and recycled. This shaft could take over the bins people usually have in their houses. The general aim of this technology is to make waste separation more convenient but, more importantly, make it easier to recycle waste and therefore encourage people to do so.

A third technology that was discussed involved a multifunctional multimedia machine for use in the home. Participants explained that this machine could fulfil the function of all household appliances, such as a washing machine and a TV. This machine would also enable multiple people to watch different TV programs or play video games simultaneously:

> *"But, hey, if they were intelligent walls, then you could put the telly there and if someone wants a game there, you could do that too." (Finland FG 1, P2)*

One participant added to this idea that the multifunctional machine would be connected to a broadband internet connection. In this way, all possible multimedia uses of the machine could be accessed via streaming, and no external data storage devices would be necessary. In this way, fewer natural resources would be needed to build household appliances, since everything comes from one machine.

The last technology discussed in this category involved filters for incineration of waste. At this moment, according to the participants, these filters are still not effective enough in reducing pollution of waste incineration. Future research should, therefore, focus on better and more effective filters that reduce pollution from waste incineration.

Table 4.3.1 Ideas within the category 'technical, physics, chemical, engineering' that received priority, ranked accordingly

Category	Idea	Aim	Target Group	Priority
Technical/ Physics/ Chemical/ Engineering	A 3D printer that could print anything you like all over the globe, for new goods, the designs can be bought online digitally	Less use of resources	Consumers	☆☆☆☆☆
	A household appliance into which non-organic waste can be put for the production of energy or other usable products	Effective use of waste	Consumers	☆☆☆
	A multifunctional machine that is all household appliances in one. The machine should also allow people to watch TV together while they watch different programs	Less use of resources	Producers/Consumers	☆☆☆
	Create filters that could better clean the smoke that comes from incinerators when dangerous materials are burned	Effect on the planet	Waste management companies	☆☆☆
	Invent an in-house machine that can degrade various sorts of waste and automatically bring it to disposal sites	Convenience	Consumers	☆☆☆

MATERIALS

Regarding materials, one innovation was discussed by the participants. Multiple participants in one focus group explained that materials for packaging these days often cause pollution and they are not biodegradable. Future research should aim to make better packaging materials that are less problematic for the environment and ideally biodegradable. In this way, illegal dumping of these materials would be less dangerous for the environment. Moreover, people could then throw the packaging together with other biological waste on the compost heaps.

"And another related point is more natural packaging methods, an attempt to use disintegrating recyclable material more, not plastic." (Finland FG3, P5)

Table 4.3.2 Ideas within the category 'material' that received priority, ranked accordingly

Category	Idea	Aim	Target Group	Priority
Material	Produce materials that are less polluting, biodegradable and generally use less packaging	Eliminate waste/Effects on planet	Producers	☆☆☆

4.3.2 Policy, management and communication

POLICY

Three topics emerged in the policy cluster. First and most widely discussed was the notion that local production and sales of food should be enhanced. Moreover, local production topics were prioritised highest by the participants. The general idea behind the importance of local production and sales was that it would substantially reduce the amount of packaging needed and less food would be thrown away since people could then buy as much as they need and are not forced to buy pre-packaged products:

"One idea was for municipalities to support local food and grocery chains where individuals could collect their bread and meat from local producers. The benefit of this is that the consumer will then buy beef or elk or pork, or whatever the producer happens to produce." (Finland FG 1, P 10)

Local production and sales of food could be increased using taxes to drive up the prices of pre-packaged products according to the amount of packaging used for those products or the total waste produced by the production of the product. It was also mentioned that a tax reduction could be implemented to make products using less packaging cheaper. In this way, as one participant explained, the market would become more supply-driven, instead of demand-driven, which is better for local production:

"Or a penalty tax, the more packaging material a product contains. Or in a product." (Finland FG 1, P2)

Participants discussed ways in which household goods could be made more sustainable, by means of taxes or policies that aim to influence consumer behaviour. This was discussed in relation to the earlier reported tendency of producers to make products that break down quite fast, so that consumers have to continuously replace them. This way, people would use the same household appliances for a far longer time, which decreases the necessary amount of resources needed to supply the population with these machines. Two ways in which this increase in sustainability could be enabled were discussed. First, participants explained that the prices of cheap and unsustainable machines should be increased to narrow the gap between high quality, sustainable goods and low quality goods. This way consumers would become more motivated to buy high quality goods since they will be cheaper on the long run:

"We were thinking that high quality goods will probably cost enormously, because people won't buy a new product right away when the old one breaks down. Then we would raise the price of these lesser quality products with such a tax, that someone would estimate whether the product is..." (Finland FG2, P6)

Participants explained that it is often cheaper to buy new products instead of repairing them. To counter this, some of the participants proposed that it should become more appealing to repair broken machines. One way to do this was that there should be a governmental compensation structure for materials that are used for reparation of broken machines.

Another prioritised idea was the notion that the consumer-driven economy should somehow be controlled: this way, fewer natural resources would be needed to produce all the consumed goods. Participants did not further elucidate this idea, but it was still perceived as the source of many problems and it was therefore highly prioritised.

Participants furthermore introduced the idea that the number of people on the planet should be limited with the use of policy measures.

Table 4.3.3 Ideas within the category 'policy' that received priority, ranked accordingly

Category	Idea	Aim	Target Group	Priority
Policy	By means of taxes, local production should be promoted and the market should become more supply driven	Local production/Less packaging	Producers	☆☆☆☆☆☆☆☆☆☆
	Controlling the market economy based on consumerism and find new market models where sustainability and economic growth can be synergetic	Other	Other	☆☆☆☆☆☆☆☆
	By means of taxing low quality goods, people should be encouraged to produce and buy high quality goods	Less use of resources/ Behaviour change	Producers/Consumers	☆☆☆☆
	There should be some reward system for repairing goods in the house	Less use of resources	Consumers	☆☆☆
	Promote local production so that less packaging is needed	Local production/Less packaging	Producers	☆☆☆
	Create tax deductions for products that use less packaging in order to change consumer behaviour	Less packaging/ Behaviour change	Consumers	☆☆
	Restrict the number of people on the planet, either by killing a lot or by restricting longevity. Additionally, limit the amount of things people can have	Less use of resources/Less waste production	Consumers	☆☆

MANAGEMENT AND LOGISTICS

In the management and logistics category, two topics were discussed. First, in one focus group it was considered important that recycling centres in Finland should be free for everyone and that refuse tips should be banned. This way, consumers have to bring old household goods to recycle centres. The idea was not further elaborated on.

Second, one participant suggested that food companies no longer should sell goods in pre-packaged quantities. Rather, consumers should be able to just take the amount needed, and pay the price for that weight. In this way, consumers would not throw away as much food:

"[. . .] that one could buy just the correct amount, of this raw material or whatever. Then people would not throw so much bad food away, then they wouldn't necessarily buy too much food." (Finland FG2, P6)

Table 4.3.4 Ideas within the category 'management and logistics' that received priority, ranked accordingly

Category	Idea	Aim	Target Group	Priority
Management/ Logistics	Cost-free recycle centres everywhere, and ban refuse tips	Convenience/Improve recycling	Consumers	☆☆☆☆☆
	Not to aim for a 'zero waste society', but for a less-waste society. Foods should be sold by weight or piece instead of in large and preset amounts so that people can buy exactly as much as they need	Less waste production/Less packaging	Producers	☆

COMMUNICATION AND EDUCATION

In this category, only one idea was prioritised. Participants suggested that in education and the upbringing of children, a behaviour change should be enacted, away from consumerism. According to one participant, this should start with teaching babies not to consume more than needed.

Table 4.3.5 Ideas within the category 'communication and education' that received priority, ranked accordingly

Category	Idea	Aim	Target Group	Priority
Communication and education	We should change the behaviour of consumers, starting with babies, to consume less and be happy with less, and that you are fine the way you are without all those new things	Behaviour change	Consumers	☆

LOCAL INITIATIVES

Various ideas proposed by the participants involved local initiatives. The highest prioritised idea was the creation of an online auction website, similar to eBay, through which you can sell and buy recyclable waste. The idea behind this is that things that are waste to one person can be valuable to others. There was no further elaboration on this idea in the focus groups.

The second prioritised idea concerned the recycling centres. Currently municipalities can decide whether or not one has to pay to bring waste to recycle centres. According to the participants, things should return to the old situation where recycle centres are places where old goods can be dropped off freely and others can pick things up for a low price or where people can swap goods. According to one participant, recycle centres are becoming businesses for profit; they are there to earn money.

> *"Now you take your stuff there, they have loads of space, people walk around, and very few buy anything. It should be a recycling centre, stuff should come and go." (Finland FG 1, P 7)*

Another idea, which was well received by participants proposed that communities should become self-sufficient again, meaning that people should start growing their own vegetables in their gardens or perhaps on rooftops. In this system, communities should function as closed, self-sufficient agricultural cells:

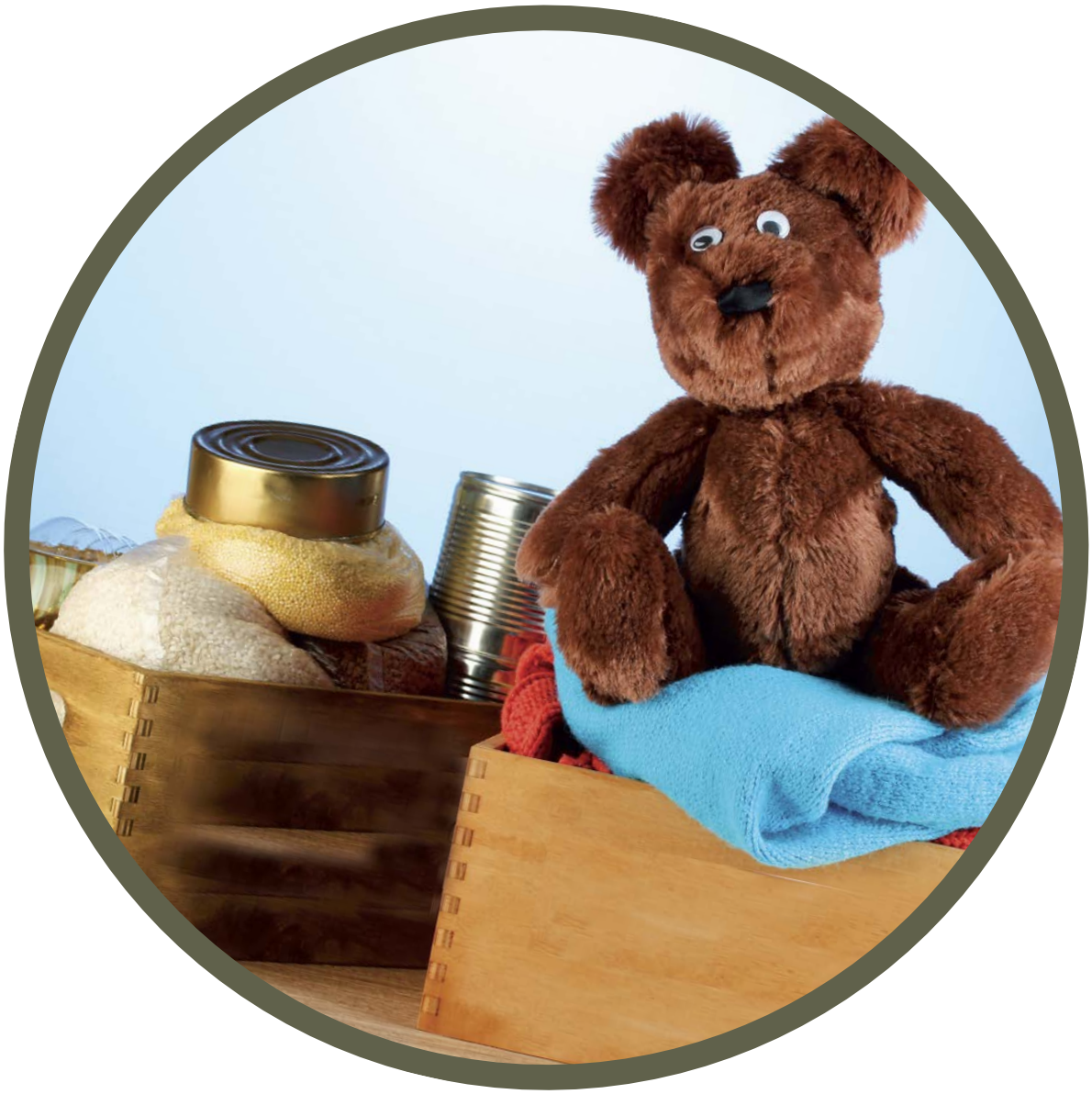
"It's a sort of closed system, that garden. For example, that there would be chickens pecking there and producing manure at the same time. And then, certain plants support each other in a way." (Finland FG2, P8)

The aim of this idea is for people to produce less waste, because most things will be recyclable, for example leftovers from food can be used as compost for the next year. Moreover, there would be no need for packaging since the community shares all the produce.

In this category, three other ideas were prioritised that received only one vote each. First, one participant explained that recycling should be organised locally by, for instance, organising local recycling days. Second, design contests should be organised for the production of better materials or less polluting materials. Finally, waste should be dealt with in more creative ways, for example by making art out of it.

Table 4.3.6 Table 4.3.6 Ideas within the category 'local initiatives' that received priority, ranked accordingly

Category	Idea	Aim	Target Group	Priority
Local initiatives	An auction site, like eBay, where old waste valuable to others can be sold, or can be obtained for free	Effective use of waste	Consumers	☆☆☆
	It should become possible again to freely bring stuff to recycle centres and buy things there for a low price	Improve recycling	Consumers	☆☆
	Communities should become self -sufficient again by producing foods in gardens and on rooftops. Then no packaging is needed anymore	Local production	Consumers	☆☆
	Create recycling possibilities in small communities or within families for clothing and furniture	Improve recycling	Consumers	☆
	Organise design contests to make less polluting/ less waste producing goods	Less waste production/ Effects on planet	Producers	☆
	We should become more creative with recycling waste, for example by making art out of it	Effective use of waste	Consumers	☆



5. Conclusion, discussion and evaluation

This country report presents country-specific findings from citizen focus groups in Finland. It is part of a wider consultation process called VOICES, which involves almost one thousand European citizens across 27 EU member states in discussing the European research priorities for the theme 'Waste as a resource'. In most member states, three focus groups were conducted. The bigger member states had a total of six focus groups across two different locations. In Finland, being one of the smaller member states, three focus groups were held in total.

The overall aim of the VOICES project is to identify citizens' preferences, values, needs and expectations with respect to research priorities for the theme 'Waste as a resource'. This provides input for the Consolidation Group that will define the actual priorities for the next work programme on 'Urban Waste' (call SiS.2013.1.2.1-2). In addition, it provides the methodology, the tools, the know-how and recommendations that can be adapted and used in coming years for similar initiatives.

Below, we present the main findings of the focus groups in Finland. First, we focus on waste management, barriers and concerns. Next, we go into the ideas identified and prioritised by the focus group participants. We close with a short reflection on the methodology of the study.

5.1 Waste management, barriers and concerns

Finland ranks 13th on the EU27 ranking list on Municipal Solid Waste Recycling (MSW), in the middle section of the 27 countries. There is an average recycling level of 35% which demands increased attention to recycling in order to meet the required 50% MSW recycling in 2020. That recycling in Finland is slightly problematic was also stressed in the concerns and barriers discussed by the participants. They explained that bringing or buying things from recycling centres is often expensive depending on the municipality citizens live in. Interestingly, 96% of the Finnish respondents from the Flash Eurobarometer survey 'Attitudes of Europeans towards resource efficiency' indicated they separated at least some waste for recycling or composting. Moreover, 94% of the respondents indicated they would buy products that are made of recycled products. It can, therefore, be concluded that the generally low level of recycling in Finland is due to barriers experienced by citizens rather than their motivation to contribute to recycling.

Three major concerns regarding recycling and waste management were voiced by participants in the VOICES focus groups. First, it was frequently discussed that there is no national policy on waste management and recycling. In some municipalities, bringing things to recycle centres was free of charge and there were enough recycling possibilities close by whereas in other municipalities, recycle centres charged too much and/or were too far away. Second, collection of waste was not flexible enough. Some participants explained that there are seasonal differences in types of waste produced and that, in this light, waste collection should be organised according to the needs of residents. The third major concern revolved around the international nature of waste problems which is a consequence of the consumer oriented market economy. Because participants had the idea they could not individually change these problems, they felt like "a grain of sand in the Sahara", and thereby waste management became less of a relevant issue on a day-to-day basis.

5.2 Ideas for achieving a 'zero waste society'

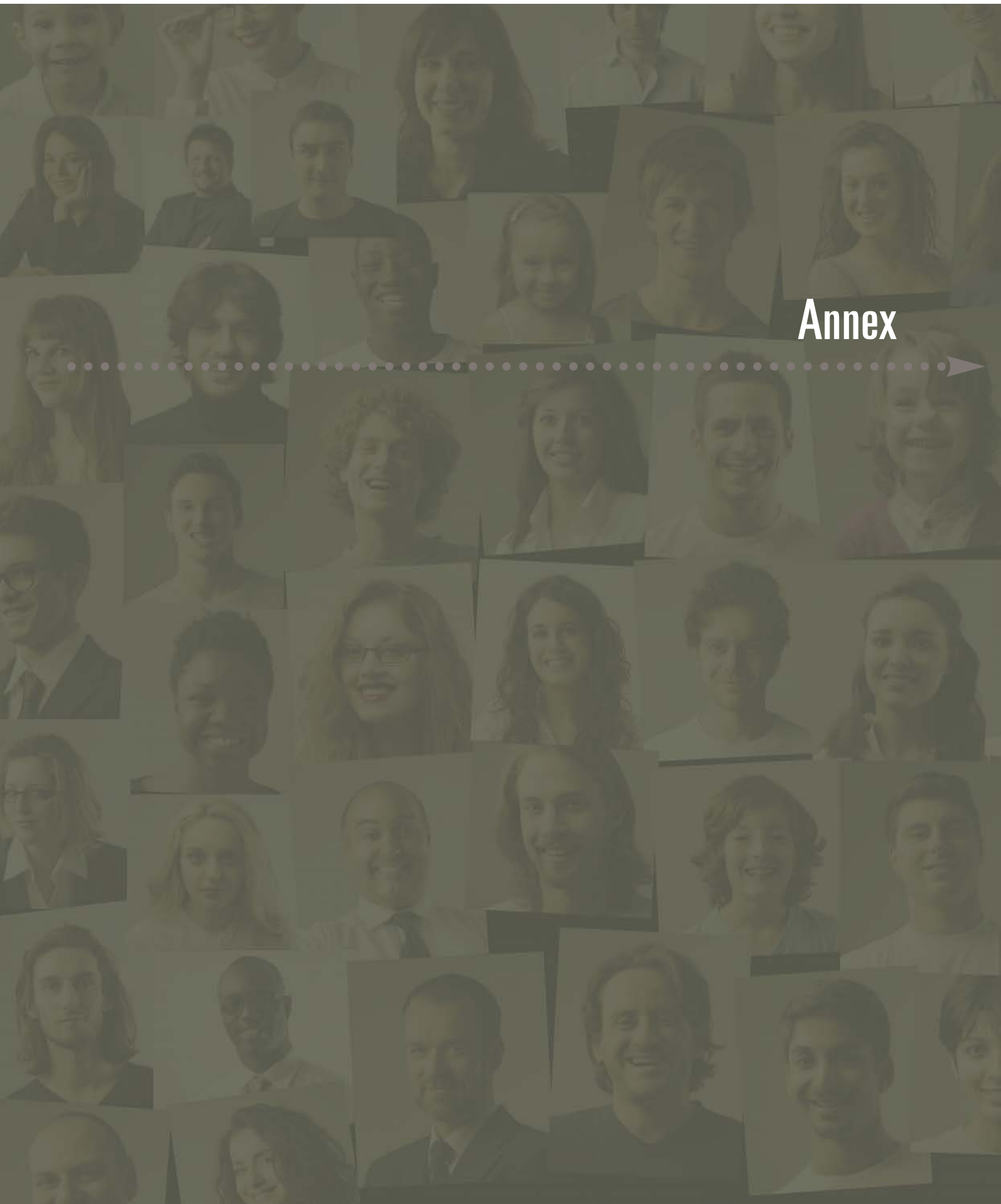
Two major research topics were discussed in the focus groups. Each of those topics consisted of several concrete research ideas. The first major research topic concerned using new technologies that would either produce less waste or technologies that could handle waste in a clean and convenient way. Examples were the integration of multiple household appliances in one or focusing on high quality appliances with a long lifetime. Participants would also like household appliances that could manage, separate and transport waste to desired locations or machines that could turn waste into usable products or energy.

The second major topic concerned a decrease in the production of waste. Participants voiced multiple ways to accomplish this goal. A lot of weight was attributed to stimulating the production and sales of local goods. In this way, according to participants, a lot less packaging is needed to preserve food products. In addition, using various taxing methods cheap and disposable food products can be made more expensive according to the amount of waste produced. In this way, consumer behaviour can be steered towards a more sustainable economy. This second notion, taxing products according to the amount of waste produced, was also found in the Eurobarometer where 66% of respondents said they would like to see costs for waste management integrated in the product price.

Of the three most highly prioritised ideas, the first is that local production should be promoted by means of taxes and the market should become more supply driven (11 stickers). The second involves controlling the market economy based on consumerism and find new market models where sustainability and economic growth can be synergetic (8 stickers), followed by a 3D printer that could print anything you like all over the globe, for new goods, and the designs can be bought on line digitally (5 stickers).

5.3 Reflection

Participants expressed their contentment with participating in the focus groups. They explained it was fun, interesting and they voiced the hope that waste management issues will become a more highly prioritised issue in society.



Annex 1: Full list of ideas for research and innovation, policy, management and communication

This table includes all ideas for research and innovation, policy, management and communication that emerged from the focus groups. For each research idea the research category is mentioned, as well as the aim of the research and the proposed target group. In addition, the priority of the research idea as perceived by the participants is indicated in the tables, using stars to indicate the number of stickers assigned to a specific idea by the participants.

ENVIRONMENTAL SCIENCES AND TECHNOLOGY

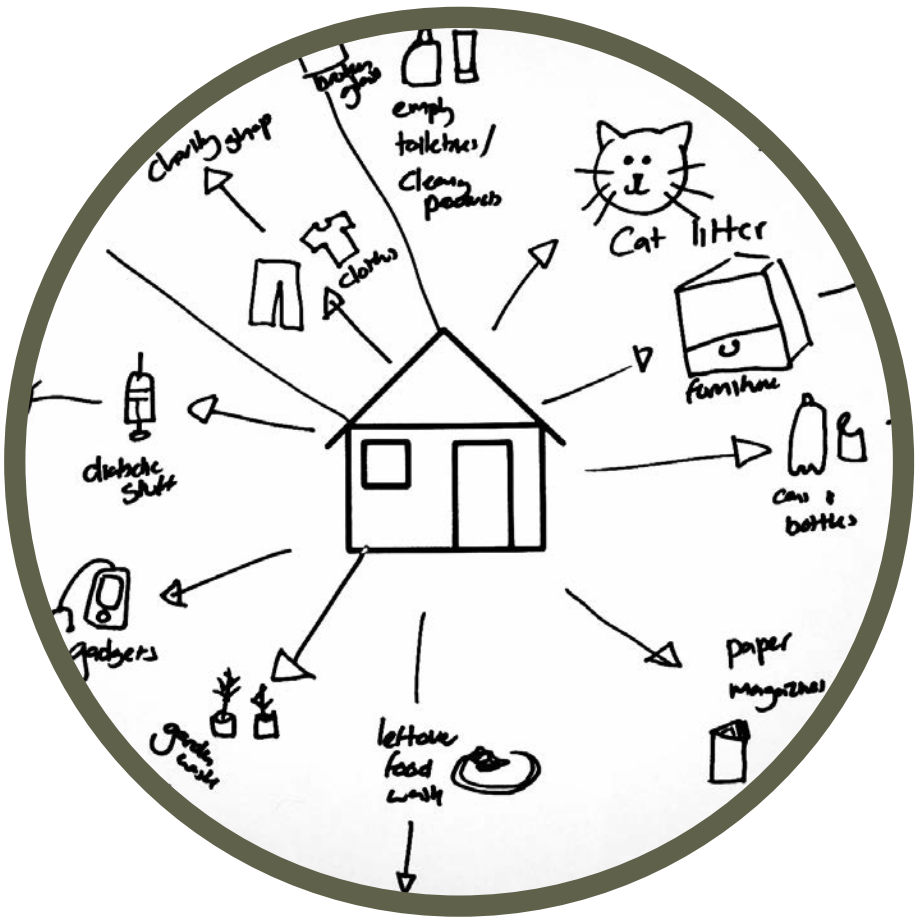
Category	Idea	Aim	Target Group	Priority
Technical/ Physics/ Chemical/ Engineering	A 3D printer that could print anything you like all over the globe, for new goods, the designs can be bought online digitally	Less use of resources	Consumers	☆☆☆☆☆
	A household appliance into which non-organic waste can be put for the production of energy or other usable products	Effective use of waste	consumers	
	A multifunctional machine that is all household appliances in one. The machine should also allow people to watch TV together while they watch different programs	Less use of resources	Producers/ Consumers	☆☆☆
	Create filters that could better clean the smoke that comes from incinerators when dangerous materials are burned	Effect on the planet	Waste management companies	☆☆☆
	Invent an in-house machine that can degrade various sorts of waste and automatically bring it to disposal sites	Convenience	Consumers	☆☆☆
	The already exisiting technology to transform waste in fuel should be further developed and more exploited in the country	Effective use of waste	Waste management companies	
	Shoot the waste to Mars, other planets or into space	Eliminate waste	Other	
	Invent materials that can be transformed, by some form of technical device, into others. Together with that they should be able to beam-transport them everywhere, so you don't need to buy new stuff all the time	Less use of resources	Consumers	
	Use the space in furniture as recycling points	Convenience	Consumers	
Material	Produce materials that are less polluting, biodegradable and generally use less packaging	Eliminate waste/Effects on planet	Producers	☆☆☆☆
	Materials used for household goods should be sustainable and last longer	Less waste production/Less use of resources	Producers	
	Intelligent clothes: textiles of which the colour, pattern and texture can be changed somehow, so that you don't need to buy new clothes all the time	Less use of resources	Producers/ Consumers	
	More biodegradable materials should be created for packaging, this will prevent a lot of waste and pollution in the forests	Effects on planet/Less packaging	Producers	
	Materials that do not lose quality and characteristics after they have been reused	Less use of resources	Consumer/ Producers	
ICT	Create a internet program that makes local recycling of products possible and easy	Improve recycling	Consumers	

POLICY, MANAGEMENT AND COMMUNICATION

Category	Idea	Aim	Target Group	Priority
Policy	By means of taxes, local production should be promoted and the market should become more supply driven	Local production/Less packaging	Producers	☆☆☆☆☆ ☆☆☆☆ ☆☆
	Control the market economy based on consumerism and find new market models where sustainability and economic growth can be synergetic	Other	Other	☆☆☆☆☆ ☆☆☆
	By means of taxing low quality goods, people should be encouraged to produce and buy high quality goods	Less use of resources/Behaviour change	Producers/ Consumers	☆☆☆☆
	There should be some reward system for repairing goods in the house	Less use of resources	Consumers	☆☆☆
	Promote local production so that less packaging is needed	Local production/Less packaging	Producers	☆☆☆
	Create tax deductions for products that use less packaging in order to change consumer behaviour	Less packaging/ Behaviour change	Consumers	☆☆☆
	Restrict the number of people on the planet, either by killing a lot or by restricting longevity. Additionally, limit the amount of things people can have	Less use of resources/Less waste production	Consumers	☆☆
	Producers should be made to use as much recyclable materials as possible for new products	Improve recycling/Less use of resources	Producers	
	Prices of new goods should be so high they are affordable for everyone, but that they promote repairing old goods	Less use of resources	Consumers	
	Producers should be forced to produce more durable goods that last longer. This could also be done by creating incentives for buying more durable products	Less use of resources	Producers	
Management/ Logistics	Cost free recycle centres everywhere, and ban refuse tips	Convenience/Improve recycling	Consumers	☆☆☆☆☆
	Foods should be sold by weight or piece instead of in large and preset amounts so that people can buy exactly as much as they need	Less waste production/Less packaging	Producers	☆
	There should be central places where, on regular basis, household appliances will be picked up for free	Convenience	Waste management companies/ Consumers	
	Old furniture should be taken by the transporter upon delivering new ones, for free	Improve recycling	Producers	
	Local authorities should be in charge of local production and local waste management policy so that waste management stays in the locality of where the waste is produced	Local production/ Improve recycling	Consumers/ Producers	
	Waste sorting has to be done, maybe by a machine that is able to sort it. But this machine should also see what materials are no longer fit for reuse	Improve recycling	Waste management companies	
	Companies should be made to reuse more old materials, as a way of recycling, and thereby use less raw materials	Less use of resources	Producers	

Management/ Logistics	Put recycling centers in a convenient place for residents	Convenience	Waste management companies	
	Companies should have spare parts for reparing broken machines and they should be cheaper	Less use of resources	Producers	
Communication and education	We should change the behaviour of consumers, starting with babies, to consume less and be happy with less, and that you are fine the way you are without all those new things	Behaviour change	Consumers	☆
	Consumers should be enabled to inspect household appliances better, and be able to compare. Also, when a product is bad, you should be able to return it. This will force producers to produce better products	Other	Producers/ Consumers	
	An online application that would real time show you when your bins are emptied. After that, you can find information where the waste goes, how and by what company it's processed, linking to other websites with more information about your waste	Awareness	Consumers	
	Sort of TV commercials called "information attacks" about waste related topics, for example about recycling and such	Awareness	Consumers	
	In nurseries there should be more attention for waste, waste management and recycling. Then, the children could also help their parents with certain things for example batteries are collected at schools	Behaviour change	Consumers	
	Open information sharing of production lines and waste processing lines. Where companies can also compete so that consumers can make informed decisions	Awareness/Behaviour change	Consumers	
	Provide commercials only in digital form (not on paper)	Less use of resources	Other	
	At schools, children should be taught how to repair basic household things. This will also bring about behaviour change, that repairing and recycling becomes normal	Behaviour change/Less use of resources	Consumers	
	There should be a system where people can look up what to do where with what waste	Awareness of possibilities	Consumers	
	Label plastics in such a way that people know which can be incinerated and which cannot	Awareness of possibilities	Consumers	
	We need ethical advertising, that does not tempt towards vanity and consumerism, but more educational. To teach us what we are buying and why, it should also include more about production and raw materials	Awareness	Consumers	
	Repair manuals should be freely available for all household goods	Awareness/Less use of resources	Consumers	
	Distribute leaflets about waste management to local residents	Awareness	Consumers	

Local initiatives	An auction site, like eBay, where old waste valuable to others can be sold, or can be obtained for free	Effective use of waste	Consumers	☆☆☆
	It should become possible again to freely bring stuff to recycle centres and buy things there for a low price	Improve recycling	Consumers	☆☆
	Communities should become self-sufficient again by producing foods in gardens and on rooftops. Then no packaging is needed anymore	Local production	Consumers	☆☆
	Create recycling possibilities in small communities or within families for clothing and furniture	Improve recycling	Consumers	☆
	Organise design contests to make less polluting/less waste producing goods	Less waste production/Effects on planet	Producers	☆
	We should become more creative with recycling waste, for example by making art out of it	Effective use of waste	Consumers	☆
	At housing corporations there should be a waste manager to whom residents can turn for information	Awareness of possibilities	Consumers	
	There should be more active involvement of waste management companies to raise awareness. They could go door by door to inform people about waste collection dates and places for example	Awareness/Behaviour change	Waste management companies/ Concumers	



Annex 2: Attitudes of citizens from Finland towards resource efficiency

The data in this annex is based on the Flash Eurobarometer No. 316 – The Gallup Organisation (2011). The primary objective of the Flash Eurobarometer survey 'Attitudes of Europeans towards resource efficiency' (Flash No. 316) was to gauge EU citizens' perceptions, attitudes and practices concerning resource efficiency, waste management and recycling. In detail, the survey examined:

- citizens' perceptions of Europe's efficiency in its use of natural resources
- the amount of waste EU households produce and whether they separate that waste for recycling or composting
- preferred actions to improve EU households' and communities' waste management
- citizens' views on how to pay for waste management
- EU households' food waste production and preferred ways of decreasing that waste
- citizens' perceptions of the importance of a product's environmental impact when making purchasing decisions
- citizens' willingness to buy second-hand products and products that are made of recycled materials.

The survey obtained interviews - fixed-line, mobile phone and face-to-face - with nationally representative samples of EU citizens (aged 15 and older) sostituire con "living in 27 Member States. The target sample size in all countries was 1,000 interviews. Below we give the results from Finland.

Question	Answer	%	EU27 Average
Do you think Europe could be more efficient in its use of natural resources?	Yes	85%	87%
	No	10%	5%
	DK/NA*	5%	8%
Do you think that your household is producing too much waste or not?	Yes	49%	41%
	No	50%	58%
	DK/NA*	1%	1%
Do you separate at least some of your waste for recycling or composting?	Yes	96%	89%
	No	4%	11%
	DK/NA*	0%	0%
What initiatives would convince you to separate (more) waste?	More and better drop-off points for recyclable and compostable waste	76%	76%
	Improve separate waste collection at your home	58%	67%
	More information on how and where to separate waste	59%	65%
	Legal obligation to separate waste	53%	59%
	Taxes for waste management	29%	39%
What initiatives would improve waste management in your community?	Better waste collection services	78%	70%
	Stronger law enforcement on waste management	58%	65%
	Make producers pay for collection and recycling of waste	51%	63%
	Make households pay for the waste they produce	32%	38%
Which one would you prefer: to pay taxes for waste management or to pay an amount related to the quantity of waste your household generates?	To pay taxes for waste management	15%	14%
	To pay proportionally to the quantity of waste you generate	79%	75%
	DK/NA*	6%	11%

Which one would you prefer: to pay taxes for waste management or to include the cost of waste management in the price of the products you buy?	To pay taxes for waste management	26%	25%
	Include the cost of waste management in the price of the products you buy	66%	59%
	DK/NA*	8%	16%
Can you estimate what percentage of the food you buy goes to waste?	None	8%	11%
	15% or less	77%	71%
	16% to 30%	13%	13%
	More than 30%	1%	4%
	DK/NA*	1%	1%
What would help you to waste less food?	Better estimate portion sizes (how much food you cook) to avoid excess food	59%	62%
	Better information on food product labels, e.g. how to interpret "best before" dates, information on storage and preparation	43%	61%
	Better shopping planning by my household	58%	58%
	Smaller portion sizes available in shops	49%	58%
How important for you is a product's environmental impact - e.g. whether the product is reusable or recyclable - when making a decision on what products to buy?	Very important	22%	39%
	Rather important	51%	41%
	Rather not important	20%	12%
	Not at all important	5%	6%
	DK/NA*	2%	2%
Are you willing to buy second-hand products?	Yes	86%	68%
Base: all respondents, % of yes			
Would you buy the following products second hand?	Furniture	78%	56%
Base: all respondents, % of yes	Electronic equipment	50%	45%
	Textiles (clothing, bedding, curtains, etc)	64%	36%
What reasons prevent you from buying second-hand products?	Quality/usability of the product	71%	58%
	Health and safety concerns	46%	50%
	Less appealing look of the product	38%	25%
	Afraid of what others might think	3%	5%
Would you buy products made of recycled materials?	Yes	94%	86%
	No	5%	11%
	DK/NA*	1%	3%
What would be the most important factors in your decision to buy products made of recycled materials?	Quality/usability of the product	61%	51%
	Environmental impact of the product	20%	26%
	Price of the product	17%	18%
	Brand/brand name of the product	1%	2%
	DK/NA*	1%	3%
What prevents you from buying recycled products or products containing recycled materials?	Health and safety concerns	31%	44%
	Quality/usability of the product	53%	42%
	No clear consumer information on the recycled product	40%	32%
	Less appealing look of the product	37%	17%
	Afraid of what others might think	7%	5%

*Abbreviation DK/NA = Don't know / No Answer

NOTES

NOTES

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VOICES, CITIZEN PARTICIPATION IN SOCIAL INNOVATION

VOICES is a Europe-wide citizen consultation process, led by Ecsite, the European network of science centres and museums, which helps set the agenda for the environmental research dimension of Horizon 2020 - the European Union's strategy to advance research and innovation.

VOICES represents a valuable insight on methods and procedure for engaging citizen participation to inform Europe's Responsible Research and Innovation framework. Focus groups, academic analyses of public consultations and dissemination of results will lead to an effective method through which to consult the public on science and technology related issues.

VOICES is engaging citizens in 27 EU countries through science centres and museums - all of which are expert, impartial and powerful partners in public engagement with science as members of Ecsite.

One thousand European citizens have joined VOICES focus group discussions on innovative uses and solutions for urban waste. The outcomes of this European consultation process are presented in the VOICES Reports Collection.

VOICES for innovation

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