Co-creation workshops on Food Contact Materials

Final report

Written by KANTAR PUBLIC in cooperation with RAMBOLL
For the Directorate General For Health and Food Safety
September 2023

DG SANTE

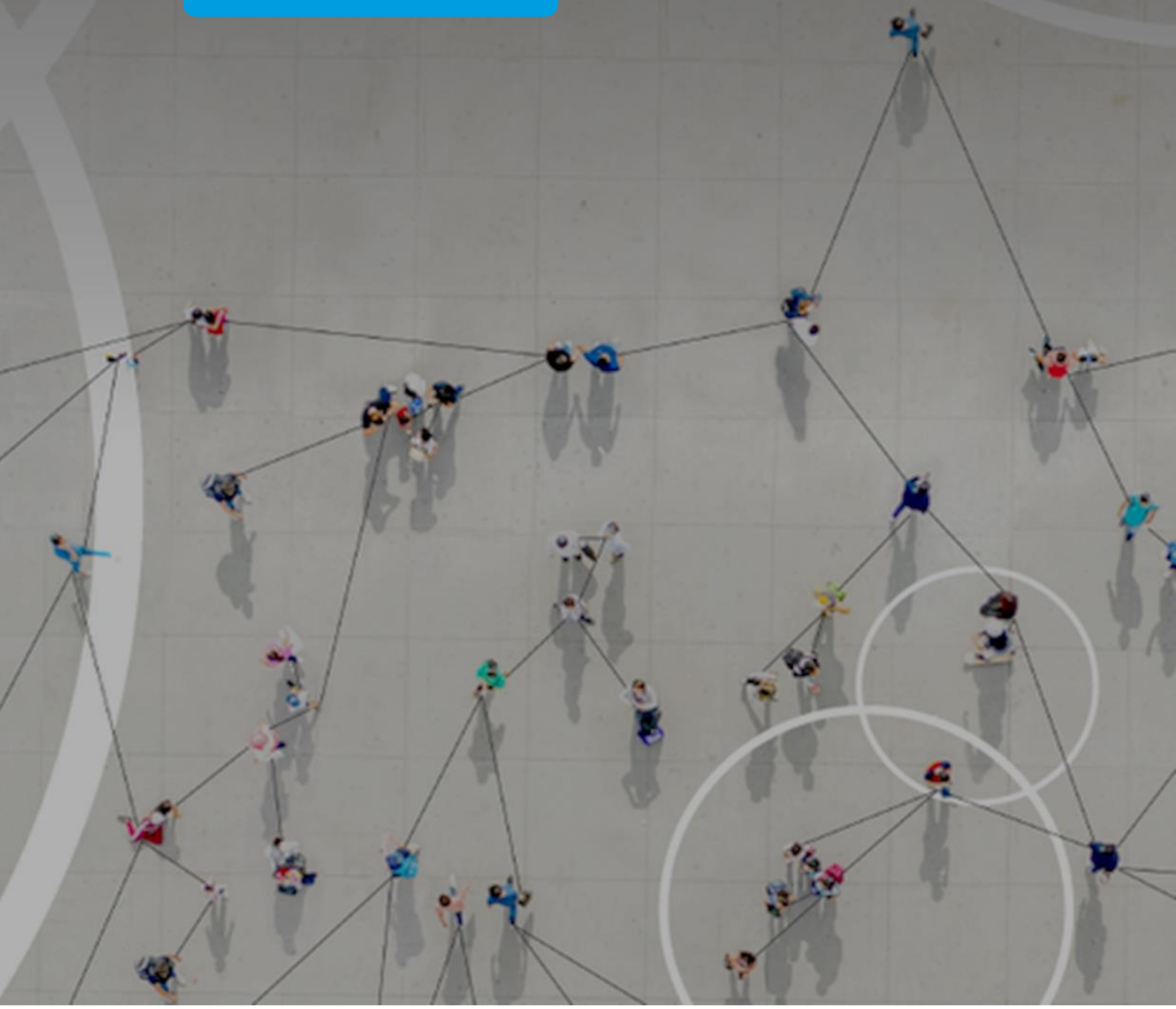
KANTAR PUBLIC

SANTE/03/2022/LOT 2

implementing framework contract
No. COMM/2020/OP/0020 - 2

In cooperation with:

RAMBØLL



EUROPEAN COMMISSION

Directorate General for Health and Food Safety
Directorate E – Food Safety
Unit E2 – Food Processing Technologies and Novel Food

Contact: Food Contact Materials Team
E-mail: SANTE-FCM-REVISION@ec.europa.eu

European Commission
B-1049 Brussel

Title: FCM citizen engagement study

EN PDF EW-05-23-366-EN-N ISBN 978-92-68-07890-7 DOI 10.2875/41315

Manuscript completed in September 2023

Luxembourg: Publications Office of the European Union, 2023

Table of Contents

1. Executive Summary

According to EU Regulation 1935/2004[1], food contact materials (FCM) are all materials and articles intended to come into contact with food, already in contact with food or likely to transfer their constituents into food under foreseeable conditions of use. EU legislation considers as food contact materials all materials that enter into contact with food throughout its lifecycle: from manufacturing, through distribution and retail to household handling. This study is concerned only with those food contact materials that consumers use at the point of purchase and in their household for food storage, preparation and consumption purposes.

This research was commissioned by the European Commission's Directorate-General for Health and Food Safety (DG SANTE). The study was conducted simultaneously with the Commission's public consultation on the revision[2] of the EU rules on FCMs to support the impact assessment and eventual legislative proposal. This study is therefore part of the stakeholder consultation activities that the Commission is undertaking in order to understand the views and positions of different parties on how to improve the current EU rules.

In this context, the purpose of this study is to understand:

- the current knowledge and understanding of citizens as regards food contact materials and the potential risks they represent;
- their preferences when it comes to trade-offs between safety-hygiene-sustainability;
- their experiences and use of FCMs;
- their information needs, preferences, and proposals for the information they would like to receive and how such information should be communicated, including alternative proposals to the current labelling scheme.

The study was designed in cooperation with the Joint Research Centre of the European Commission, competence centre on participatory and deliberative democracy. It was implemented through a series of nine co-creation workshops in nine EU countries. The countries covered were France, Finland, Germany, Greece, Ireland, Malta (pilot group), Poland, Romania and Spain. The workshops took place between 7 and 15 November 2022. In total, 90 EU citizens took part in the workshops. Participants took part in a short individual activity (home diary) five days before the workshops. The actual workshops lasted three hours and were designed using participatory and interactive techniques. Participants represented a diverse group in terms of gender, age (including young citizens between 18 and 25 years of age and senior citizens aged 65+), socioeconomic profile, education level, employment status, and food consumption behaviours (eating and preparing food at home, in restaurants, or takeaways). All groups also had at least two participants with health concerns that could impact their food consumption (allergies, pregnancy, endocrinological issues, cancer, etc.) and various dietary requirements (gluten-free, vegetarian, vegan, etc.). Finally, groups also included citizens that had different levels of awareness and knowledge about food contact materials.

1.1 Current knowledge of and experiences with food contact materials

The position of participants in the research vis-à-vis food contact materials can be summarised as follows:

- Overall, food contact materials are not a key preoccupation for participants from the perspective of safety and hygiene. At first, when not prompted, participants are somewhat indifferent to the topic and, except for those who have clear health concerns stemming from understanding of certain risks they admit that they have not given extensive consideration to the question.
- When these materials are significantly taken into consideration, it is rather for reasons of sustainability. Indeed, a segment of participants are strongly concerned about minimising packaging so as to reduce their carbon footprint and pollution.
- However, when participants were prompted leading to a discussion, they expressed a range of concerns around food contact materials and the potential harm. The more they think about the issue the more curious they become and the keener they are for more information and clarification. When given factual information, participants seem to relate to the potential dangers and want to improve their experiences with FCMs for their own benefit. Furthermore, there was a degree of fear or risk-

[1] http://data.europa.eu/eli/reg/2004/1935/2021-03-27
[2] https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12497-Revision-of-EU-rules-on-food-contact-materials_en

aversion linked to potential leaching of substances that lead participants to get more engaged with the topic throughout the workshops.

- Participants also admit to a range of potentially harmful uses of food contact materials. During the workshops participants were shown examples of potentially harmful uses and when stimulated in this way many admitted doing them. Even when they are aware of the risks they still sometimes engage in such practices (notably microwaving plastic that is not designed for high temperatures). This is primarily done because of convenience: they reuse packaging that was not designed for heating food for storing and do not replace the food in another container to heat it.
- Passed the initial indifference respondents became interested in this issue as they were engaged in a discussion with others, and they were stimulated with examples. Once the initial lack of interest was overcome participants were interested in gaining a better understanding of what are and what are not safe uses of food contact materials. This interest was mostly aroused because of potential risks that participants were stimulated about using case studies and examples.

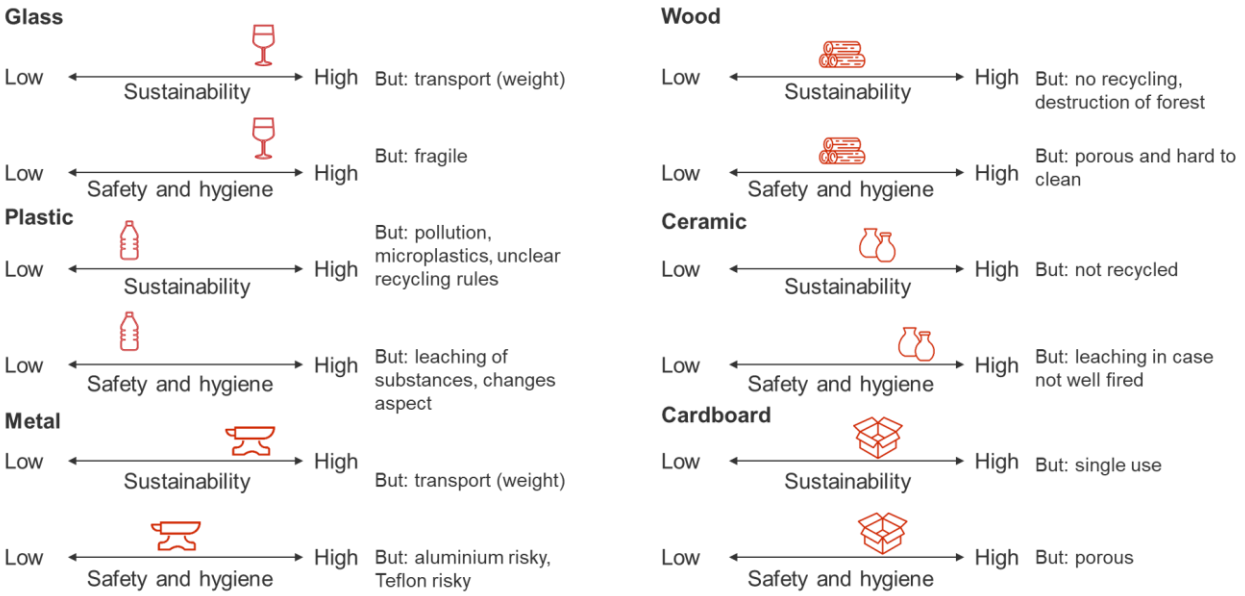
Participants commonly believe the standards regarding food contact materials should be harmonised across Member States and advocate common guidelines across the European Union regarding recycling and disposal practices for food contact materials.

As participants do not have any control over the type of packaging used to sell food in stores, they tend to assume that the organisations producing the food should be responsible for selling and packaging food in a manner that is safe and sustainable. They believe that all food should be made available in safe packaging or safe containers. In other words, they expect and mostly tend to trust that packaging and food contact materials at the point of sale are safe for the use for which they were initially intended. They do however understand that the use and reuse they make of food contact materials once in their household is partially their own responsibility and that not all risks can be avoided by producers and food manufacturers considering that participants use materials differently from the purpose for which they were initially intended.

Generally, participants were unlikely to buy food with visibly damaged packaging since they perceived the risk associated with this. There is a recurrent assumption that food safety and hygiene are jeopardized if food is consumed from dented, damaged, broken, or scratched materials.

1.2 Concerns, needs and preferences regarding safety, hygiene and sustainability of food contact materials

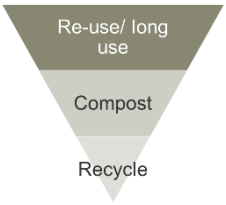
The chart below provides a summary of how participants perceive the different FCMs discussed in the workshops in terms of their sustainability, safety, and hygiene.



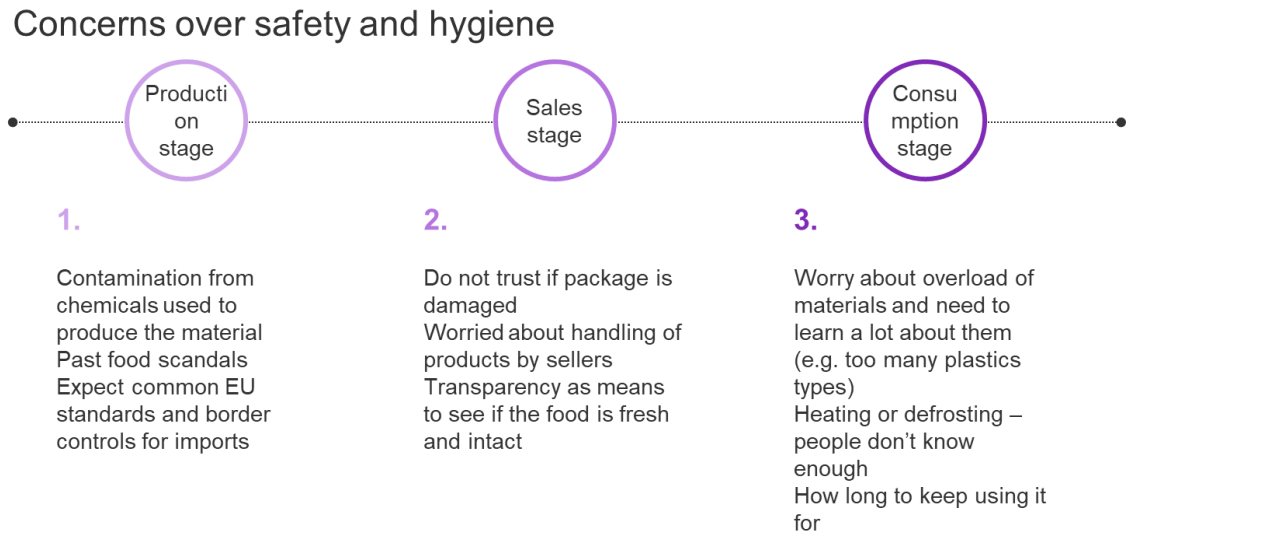
Participants discussed the following issues regarding FCM safety and hygiene:

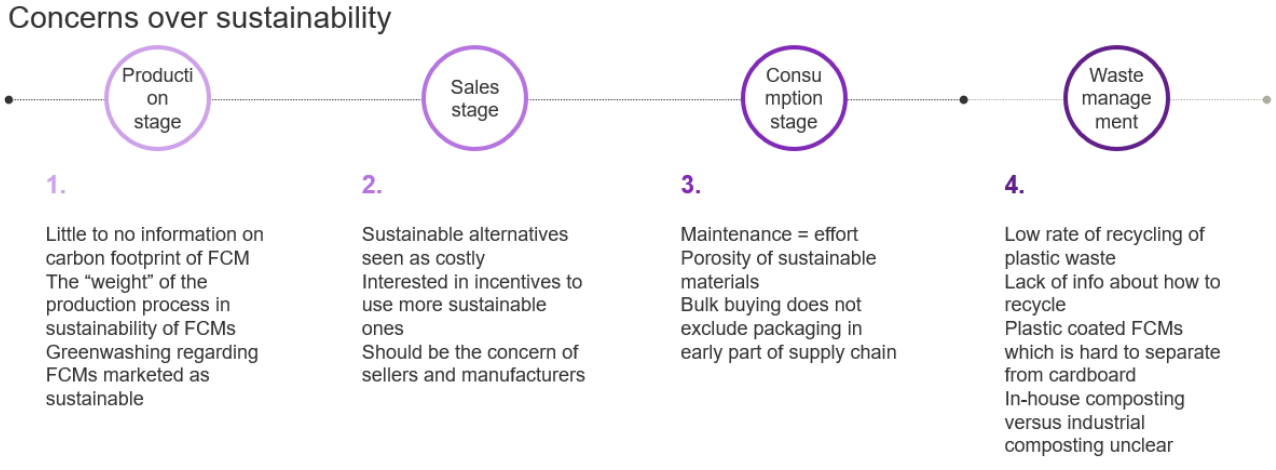
- Whether the material is synthetic (e.g., plastic, silicone) in which case participants perceive that there is a risk that some substances could leach into food. This is a strong area of concern as this threat is invisible and therefore participants feel ill equipped to discern it.
- Whether it is porous and can therefore be easily contaminated and difficult to clean.
- Whether it can be oxidated (e.g., rusting) and therefore leach into the food through the oxygenation process.
- Whether it can be easily damaged (scratched or broken) and thus leave traces in the food.

When it comes to sustainability, participants suggested a hierarchy of the characteristics of sustainable materials (shown on the left). Long use and reuse are seen as the key characteristics of sustainability. Composting, provided participants knew how and where to do it, is also highly appreciated. One area that participants were unclear about concerns materials that are synthetic, including those that are biobased or recycled. There was considerable confusion about the substances that are used to manufacture these materials. Overall participants consider that the danger from these substances could be higher than the benefits arising from avoiding traditional FCMs.



The extent to which participants trust or do not trust the FCMs available in their country is influenced not only by the manufacturing process (or rather what participants imagined it to be) but also by their own trust in institutions. The more they trust institutions and regulations, the less likely they were to express concerns. There were also discussions about the fact that a) there should be high and common standards regarding FCMs across the EU and b) the means that should be in place to ensure that imported FCMs comply with EU standards.





1.3 Information needs

The workshops show that there is a strong rationale and opportunity to communicate more and better on the topics of the safety and sustainability of food contact materials. Participants demonstrated limited knowledge and understanding of the risks involved in (re-)using different types of FCMs and they also have mixed levels of understanding as regards to which FCMs are sustainable and how to dispose of them. The current labels are familiar to participants (they took notice of them) but many are misunderstood. Participants do not spontaneously look for information about FCMs (except for the archetype of "health protector"), therefore proactive outreach is important to provide them with information. While participants do not have sufficient concerns to search proactively for information, once they are prompted with more information about FCMs they are interested in the topic and want to know more about it. They mostly recognise that both the safety and sustainability of FCMs are issues of which they should be aware and that they should take action accordingly.

The discussions also showed that there are limits on what can be achieved through labels alone and that other means of communication are needed to accompany a labelling system. There are several topical areas on which participants want to be informed when it comes to FCMs:

- whether to heat/freeze them and how (to what temperature, microwave vs. oven, for how long);
- composition of the FCM in particular regarding new types of materials;
- frequency of reuse or when to dispose of the material;
- how to dispose of the material;
- who is the source of the information (messenger) as a means for participants to determine whether the information can be trusted.

The list of items is potentially too long to be covered in one label even though the workshop participants did propose labels that would combine information about several of these aspects into one visual. However, any label would need to be accompanied by additional information campaigns which would help participants better understand the labels and what the symbols mean.

Overall, the workshops showed that:

- The labels and related information are better received when they are focused on actions (do's or don'ts).
- The labels have the advantage of being "at the right place in the right time" – in other words participants see them when they have the FCM in their hand ready for use (or reuse). This means that they need to be visible on the packaging and clearly legible also after certain time;
- At the same time labels are not sufficient as the information on them cannot cover all needs and often they are not entirely self-explanatory. There is a need for memorable and wide-reaching information campaigns so that the meaning of labels becomes more intuitive.
- Other supporting materials or educational tools should reflect what are the right touch-points when participants think about the (re-)use and disposal of FCMs. The materials should be visible or available to participants at the time they most need them – so either at the point of purchase or when they are in their kitchen making relevant decisions about FCMs.

However, the underlying expectations of participants are that:

- No materials that might pose a serious risk when reused should be available on the EU market. Participants are not willing to accept risks related to chemicals leaching into food because of production of FCMs or because of the way they reuse the FCM at home. They are not able to assess these risks and strongly believe that it is the responsibility of manufacturers and regulators to prevent these risks. These positions were driven by a certain degree of mistrust towards manufacturers and expectations that (trusted) public authorities have the power and responsibility to keep manufacturers accountable and to control them. The fact that participants feel unable to judge the risks is another driver of this attitude.
- Participants were willing to take some risks when it comes to hygiene, for example when buying from bulk, but these were situations where they can assess the risk themselves. In other words, they trust that they are able to identify the risks for themselves and subsequently to decide how important that risk is for them. The same applies in the case of allergies and possible contamination. Participants who are concerned about food allergies do have a preference for packaged products over ones

bought from bulk. These participants generally understand that it is their responsibility to ensure that they buy products that are packaged to avoid this risk, rather than expecting all bulk stores to manage this risk for them.

- After discussion participants do understand that risks may arise from reusing FCMs at home for uses for which they were not intended. This is an area where more information and education are needed.

The workshops recommended different types of techniques to convey information about FCMs: layering of different types of information, colour coding, using verbal messages or a rating scheme.

1.4 Conclusions

1. Food contact materials are not a topic that most workshop participants think about spontaneously. When prompted about what they consider as food contact materials, they will name food containers, utensils, wrapping materials or food packaging. More rarely will they think about cooking tools. Related to this apparent indifference, they have limited knowledge about FCMs. However, there were different profiles of participants in the workshops. Three archetypes of people emerged from the discussions each being driven by different concerns and considerations: “ecological defender”, “unassuming consumer” and “health protector”.

2. Responsibility over potential risks stemming from food contact materials should be distributed as follows according to participants:
   1) It is the role of manufacturers and authorities to avoid any major risks and threats to health
   2) They accept that their own judgement and individual responsibility are activated when it comes to bulk purchases or purchases where there is potential risk of cross-contamination of different food products with allergens
   3) When it comes to reuse of FCMs in the household they understand that it is their responsibility to ensure correct use and thus avoid minor risks. But as noted above major health risks related to reuse should in their eyes be tackled by the manufactures and authorities.

3. There is ample room to improve citizens’ knowledge and understanding around the issues of the safety and sustainability of food contact materials. People have clear information gaps and current labels are ill-known or misunderstood.

4. Knowledge and understanding do not directly translate into behaviours. Even people who are aware that certain practices are potentially harmful admit that they occasionally use FCMs in that way (notably for heating food). Participants in the workshops reuse FCMs if these are convenient to reuse independent of their understanding of risks or their knowledge.

5. There are multiple drivers affecting people’s choice of FCMs of which the most powerful ones appear to be: convenience, social norms and past experience, as well as economic considerations and costs.

6. People tend to believe that FCMs are safe because of their stability, non-porosity or because of their robustness. Accordingly, they tend to trust more materials that do not change appearance such as glass or ceramics and trust less materials that do change aspect such as plastic, metal or even cardboard.

7. In terms of sustainability, FCMs raise many question marks. People have limited understanding of FCMs that are compostable or bio-based. They also believe that clarity over recyclability needs to be enhanced. Consumers also worry about the sustainability of the FCM production. People do have a preference for sustainable options provided these are not less convenient or not more costly than other mainstream options.

8. People expect dangerous/ potentially seriously harmful products to be out of circulation as noted above. Therefore the choices they make between sustainability and safety/ hygiene are mostly about: price, convenience/ availability about values.

9. There is a clear need and ample opportunities to boost the level of understanding citizens have of food contact materials and their safety and sustainability.

1.5 Considerations for improving the current EU rules

1. Review the current labelling to improve the understanding of intended messages. Harmonise labels across the EU. Include a wider breadth of information on the labels.
2. Accompany labels with other information campaigns (posters, flyers, advertising spots). People expect information about: contact with food; heating/ freezing; recycling; composition. This would necessitate combining multiple messages in a single label or indication.
3. Prioritise labels that focus on action: do's or don'ts.
4. Consider layering of information as well as colour coding accompanied with verbal information (warning messages)
5. Enhance trust by specifying that the label is guaranteed by a trusted body (for example the EU).
6. Test the understanding of messages on proposed labels
7. Focus information provision and campaigns on choices that are relevant for consumers: sustainability as well as safe (re-)use of materials. Other measures need to ensure potentially dangerous products are not in circulation.

2. Introduction

2.1 Background and objectives

2.1.1 Subject of the study

Food contact materials (FCM) are all materials and articles intended to come into contact with food. They include production machinery, filling lines, food packaging, containers for transport or storage, kitchen equipment, cutlery and dishes. Food contact articles can be made up of one or multiple different food contact materials - plastics, rubber, paper, cork, glass, textiles, metal, wood or alternatives.

EU rules on food contact materials apply throughout its lifecycle: from manufacturing, through distribution to its use, including on information and labelling. This study is concerned only with those food contact materials that participants use at the point of purchase and in their household to store, prepare or consume food. This means that professional production machinery and filling lines are outside of the scope of this study.

Because food contact materials and articles contain, and can release, chemicals into food, their manufacturing is regulated. FCMs can release chemicals from the packaging into the food matrix (migration), which can potentially have an adverse effect on human health. At EU level there are rules which define the requirements for manufacturing and quality control of food contact materials. These aim to avoid production and use of (potentially) harmful food contact materials. In this vein EU law provides for binding rules that business operators must comply with[3] in order to ensure the safety of FCMs and protect consumers' health, and to facilitate the free movement of goods. EU rules on food contact materials can be of general scope, i.e., apply to all FCMs or apply to specific materials only ('harmonised rules'). Harmonised EU regulations have been adopted for four specific materials: plastics including recycling of plastic, ceramics, regenerated cellulose (such as cellophane foil), and active and intelligent materials. The main EU measure on plastics include (1) authorised lists, (2) restrictions of use, e.g., specific migration limits (SMLs) (3) prohibition of use, e.g., Bisphenol A in plastic bottles – and certain phthalates in FCMs intended for use in products by children, infants, and young infants.[4] Requirements for other materials exist at national level without EU harmonisation.

At EU level, the regulatory framework consists of Framework Regulation EC 1935/2004 which lays down general requirements for all food contact materials. The Framework Regulation requires that materials do not (1) release their constituents into food at levels harmful to human health; (2) change food composition, taste and odour in an unacceptable way. The Framework Regulation sets out the general principles of safety and inertness for all FCMs, as well as rules on labelling, on compliance documentation and traceability. Indeed, the other area that is regulated at EU level is the provision of information about FCMs through labelling.

2.1.2 Study objectives and approach

This research was commissioned by the European Commission's Directorate-General for Health and Food Safety (DG SANTE). The study was conducted simultaneously with the Commission's public consultation on the revision[5] of the EU rules on FCMs to support the impact assessment and eventual legislative proposal. This study is therefore part of the stakeholder consultation activities that the Commission is undertaking in order to understand the views and positions of different parties on the current legal framework and options for changes thereto.

In this context, the purpose of this study is to understand:

- The current of knowledge and understanding of selected participants as regards food contact materials and the potential risks they represent;
- their preferences when it comes to trade-offs between safety-hygiene-sustainability;
- their behaviours and use of FCMs;

[3] https://ec.europa.eu/food/safety/chemical-safety/food-contact-materials_en
[4] European Commission presentation for Webinar on the Evaluation and revision of EU Rules on FCMs, 20 January 2021
[5] https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12497-Revision-of-EU-rules-on-food-contact-materials_en

- their information needs, preferences, and proposals for what information they would like to receive and how such information should be communicated, including alternative proposals to the current labelling scheme.

The study used a purely qualitative design with participatory elements. The approach using co-creation workshops was selected so as to allow the research team to gauge the collective intelligence of participants, to activate their creativity and to go beyond individual's experience, attitudes and knowledge but to also allow them to interact and react on each-others' contributions. A qualitative design allows the research team to:

- See spontaneous and unprompted reactions of participants who are asked open-ended questions and thus not primed by a pre-existing set of answers;
- Explore issues that are not anticipated by the research team and therefore cannot be formulated in close-ended answers. Qualitative studies are particularly useful to explore "unknowns" and issues that are not well covered in previous literature and studies;
- Understand the details of participants' views and what is behind these views in terms of "why" and "how";
- Observe their non-verbal reactions. This includes their level of engagement with the topic, their interest in it as expressed by tone of voice for example or the emotions experienced when discussing the topics;
- Analyse how the views evolve throughout the discussion based on reflection and interaction with other participants in the workshops; and
- Identify different types of perspectives and explore patterns in how participants understand and perceive the issues at stake.

Given the qualitative nature of this research there are also some limitations that need to be born in mind when reading this report:

- The workshops were implemented in a selection of nine Member States (see below). Therefore, the fieldwork did not cover all EU countries with their national contexts;
- Each workshop brought together a small number of participants (10 persons per workshop) which means the study cannot generalise to the level of countries. Subsequently, the study report does not present country-level trends and countries are only mentioned when the reference to the country is needed to understand the example used or statement being made; and
- The study does not aim to present the magnitude or prevalence of issues identified given that the study was of qualitative nature. However, when trends were systematically present in the discourse and reactions of high numbers of participants and across countries this clearly stated. When findings stem from a small subset of respondents and therefore are likely to represent less frequent views and perspectives this is also noted in the report.

2.2 Study methodology

Considering the purpose of this study, the approach followed was qualitative and participatory. The study was implemented through nine participatory workshops covering nine EU countries.

The final selection of countries was Malta (MT) where a pilot group was undertaken, Germany (DE), Ireland (IE), Greece (EL), Spain (ES), Finland (FI), France (FR), Poland (PL) and Romania (RO).

Table 2.1 Overview of the methodology

These countries represent diversity in terms of:

- citizens' awareness of traces of materials that come into contact with food, e.g. plastic or aluminium in packaging (based on EFSA Eurobarometer study on Food safety[6]);
- citizens' concerns over food safety when buying food[15];
- considerations regarding minimal use of packaging (based on DG SANTE Eurobarometer on food sustainability[7]); and
- concerns over the use of pesticides for food, which is a proxy for citizens' concerns over food contamination more generally[16].

This country selection also represents a good mix between the different geographic dimensions of the EU with coverage of Nordic, Western, Southern and Eastern countries.

The co-creation workshops lasted for three hours each. Each session brought together ten participants. In total 90 citizens took part in the research. Participants were recruited to represent a diverse group in terms of the following characteristics:

- age (from 18 to 65+);
- gender;
- education level;
- economic activity (students, persons in employment, job seekers, people not working and not looking for a job);
- household composition.

Some participants in the workshops had preferences, conditions or specificities which made them likely to be more sensitive to issues related to food contact materials, such as allergies, special dietary conditions, being pregnant or breast-feeding or having other health conditions (cancer survivors, endocrinological issues).

[6] https://www.efsa.europa.eu/sites/default/files/corporate_publications/files/Eurobarometer2019_Food-safety-in-the-EU_Full-report.pdf
[7] https://europa.eu/eurobarometer/surveys/detail/2241

Intentionally the workshops did not include participants who mostly eat outside and do not cook at home, as such participants were less likely to be concerned about issues related to the use of FCMs in their household.

Participants also had diverse views and attitudes on these issues:

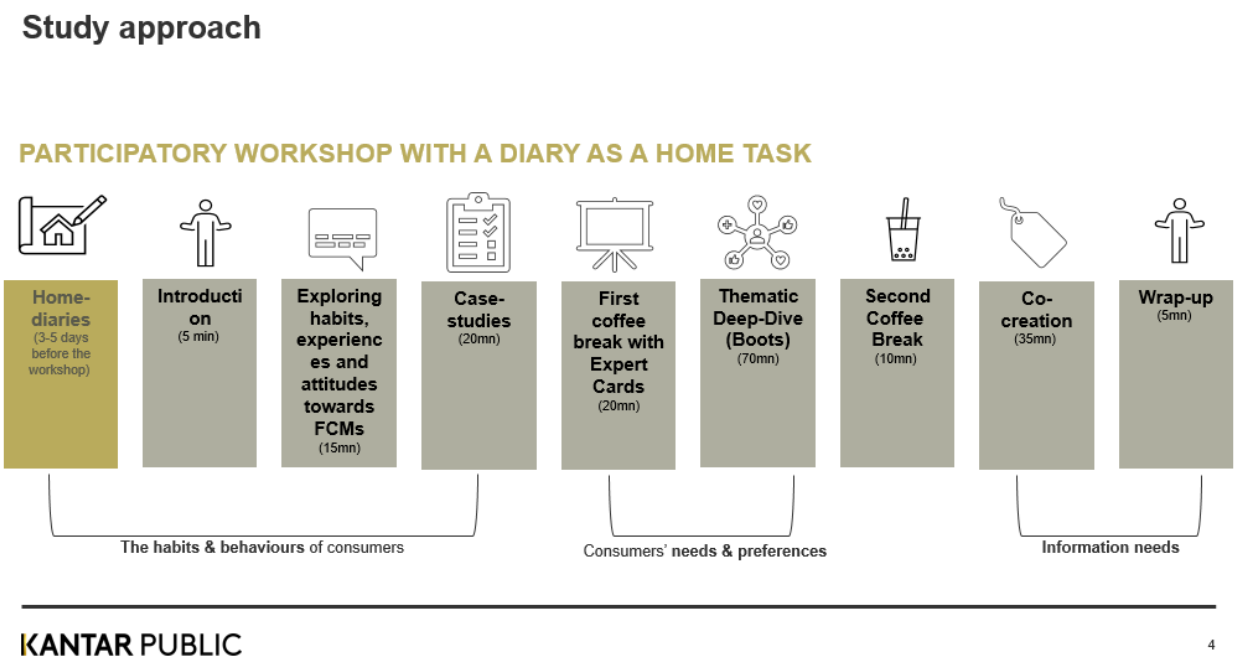
- concerns about potential materials that come into contact with their food, such as plastic or aluminium in packaging;
- worries about food security when buying food;
- considerations regarding minimizing packaging;
- concerns about the use of pesticides.

Annex 2 shows the quota achieved for participants according to the different characteristics.

The workshops were structured as follows:

- First, all participants were asked to undertake an individual exercise at home in which they were prompted to describe food contact materials that come to their mind and how they use them. This exercise was used to analyse how participants define food contact materials and what are the common uses that come into their mind. They were also asked to rate a number of food contact materials according to their perceived safety and sustainability.
- The workshops started with a discussion designed to explore participants' habits, experiences and attitudes with regard to food contact materials. During this slot the moderators also prompted them about specific areas of potential concern (leaching of potentially dangerous substances, recycling and what this implies for the use of recycled materials, etc.).
- The second slot was dedicated specifically to a discussion around examples of potentially harmful uses. This discussion was stimulated using case studies of potentially harmful practices and uses. The purpose of these activities was to understand the extent to which participants were aware of risks or whether they engaged in potentially harmful practices.
- During a coffee break, participants were provided with a number of expert cards to read, showcasing safe behaviours to adapt in situations where potentially harmful practices are also possible. This exercise aimed to give participants fresh knowledge and understanding of the risks associated with FCMs and what it means for their use of these materials;
- In the subsequent slot participants were divided into three groups, where each of the groups discussed in greater depth one of these topics: safety, sustainability, trade-offs between safety and sustainability.
- The final slot was dedicated to a creative activity during which participants were asked to reflect on their information needs, provide feedback on existing labels and put forward their suggestions for useful approaches to a new generation of labels.

Table 2.2 Simplified structure of workshop discussions



Annex 1 provides the workshop facilitation guide showing the full sequence of activities.

2.3 Contextual issues affecting responses

During the workshops several contextual developments were brought up as influencing how participants see issues related to food contact materials. The most notable examples are:

- Trust in manufacturing and retail chains. In some countries (notably Finland) participants demonstrated a high level of trust in any packaging that is put onto the market and sold to participants. Because of this trust they tend not to question any use that could be made of these materials. In other countries, however, trust in the food processing and distribution chain was much lower, thereby creating some distrust in FCMs.
- Influence of food processing scandals. Some participants were influenced by recent scandals that were covered in the media, where food was contaminated despite the existing food processing and packaging safeguards.
- Memories of times where plastic was much scarcer than today. Participants referred to situations where plastics were not abundant and where bags were frequently reused, or other materials were used. They also referred to the use of glass for bottles in earlier times before the omnipresence of plastic. This was particularly prevalent in Central and Eastern European countries.
- COVID-19 related restrictions which impacted bulk-sales. Several participants referred to the fact that as a result of these restrictions bulk sales were temporarily terminated. They also noted that they became more concerned about purchasing from bulk and potential contamination as a result of several participants touching the serving tools.

3. Current knowledge and experiences with food contact materials

3.1 Synthesis

The position of participants in the research vis-à-vis food contact materials can be summarised as follows:

- Overall, food contact materials are not a key top-of-mind concern for participants from the perspective of safety and hygiene. In other words, this is not an issue they frequently think about when making purchasing decisions or decisions regarding use or reuse of FCMs.
- When participants do give strong consideration to these materials, it tends to be more for reasons of sustainability. Indeed, a segment of participants are strongly concerned about minimising packaging so as to reduce their carbon footprint and pollution.
- However, when participants were prompted and a discussion ensued, they expressed a range of concerns around food contact materials and related potential harm.
- Participants also admit to a range of potentially harmful uses for food contact materials. Even when they are aware of the risks they still sometimes engage in these uses (notably microwaving plastic that is not designed for high temperatures) out of convenience.
- Participants demonstrated their interest in this issue when they were engaged in a discussion. Therefore, once the initial indifference was overcome participants were interested in gaining a better understanding of what are and are not safe uses of food contact materials.

Commonly, participants suggest the standards regarding food contact materials should be harmonised across Member States and advocate common guidelines across the European Union regarding recycling and disposal practices for food contact materials.

As participants do not have any control over the type of packaging used to sell food in stores, they do not spend time analysing whether the materials used are safe and/or sustainable. Participants assume that the organisations producing the food should be responsible for selling and packaging food. More importantly they believe that all food should be made available in safe packaging or safe containers. In other words, they expect and mostly tend to trust that packaging and food contact materials at the point of sale are safe for the use for which they were initially intended or even beyond. There is a strong expectation that no materials that are clearly unsafe or potentially harmful should be in circulation and that it is the responsibility of the manufacturers and regulators to ensure this is not the case. They do however understand that the use and reuse they make of food contact materials once in their household is partially their own responsibility and that not all risks can be avoided considering that participants use materials differently to the purpose for which they were initially intended.

Participants in the workshops spoke about how they reuse packaging in which food was purchased for other purposes at home – notably: storing, heating or freezing. Reuse of packaging after the initially purchased food was consumed appears to be rather common notably in the case of hard plastic, glass or ceramic materials.

Generally, participants are unlikely to buy food with visibly damaged packaging since they perceive the risk associated with this. There is a recurrent assumption that food safety and hygiene are jeopardized if food is consumed from dented, damaged, broken or scratched materials.

3.2 Methodological note

Current knowledge and participant's attitudes towards food contact materials discussed in this section have been identified by categorising and analysing how they interacted and engaged with the topics of the workshops throughout the workshop duration. Behaviours, behavioural triggers and consumer profiles presented in this chapter were constructed by grouping participants' spontaneous reactions, their experiences and habits shared during the workshops. Participants were prompted to share their thought process discussing different types of stimuli including information about uses and reuses of FCMs. These reactions also provided the research team with data to assess their behaviours concerning FCMs.

This chapters discuss emerging behavioural triggers and consumer profiles. Information to compile them was used from all parts of the workshop discussions, more specifically the home diaries, the section on exploring habits, experiences and attitudes towards food contact materials and the case study exercises.

The purpose of the home diaries was to collect information on what participants understood by food contact materials without any prompts. The homework was divided into different activities to be completed over two days, consisting of:

- keeping a record of food contact materials, where participants were requested to upload pictures of the FCM and explain how they used it at home, as well as how often; and
- a ranking activity with five proposed FCMs - paper wrapping or bag, plastic Tupperware, hermetic foil or wrapping, wooden cutlery and aluminium cans - with participants asked to rank them from the safest to the least safe, and from the most sustainable to the least sustainable.
- Explaining their experiences with food contact materials:
    - if they had reused any FCM mentioning why they had reused it:
    - if the use of an FCM had changed the quality of their food and how they reacted;
    - if they had noticed or experienced visible changes of colour/appearance of an FCM, describing their reaction to the change as well as why they think this change happened;
    - if they had come across any other drastic damage to an FCM
- Describing the information, they found on the label of those FCMs that they described in previous activities.
- Questions to an expert, where participants could submit any question they wanted in writing to a DG SANTE expert for an answer.
- Classifying sixteen FCMs around the idea of sustainability and safety, where the participants were asked to group the items and entitle the groups as they saw fit.
- Finally, they were provided with a leaflet about food contact materials to study before the workshop.

In addition to the home diary, the first section of the workshop explored habits, experiences and attitudes towards food contact materials. It included a group discussion about the food contact materials that participants had brought with them, as well as spontaneous associations with the phrase ‘food contact materials’.

In the second part of the workshop, the moderators discussed four case studies to gain insights into behaviours in potentially unsafe scenarios around food contact materials. The objective of the section was to understand the way of thinking of participants, as well as their level of concern in those situations.

The case studies were:

- case study A1: reuse of single-use items, including re-heating (in microwave or oven) and freezing of those items;
- case study A2: sustainability of plastic versus glass bottles;
- case study B1: bio-based label in relation to the meaning of biodegradability and composability;
- case study B2: absence of label or information on the FCM.

The participants were given the correct answers to the case studies during the coffee break on expert cards provided by the research team (see Annex 1: Expert card 4, Expert card 5, Expert card 6, Expert card 7).

The participants’ knowledge about food contact materials, their weak spots and the archetypes identified in this chapter have been drawn from the different topics debated in the participatory workshops. The behavioural triggers were discussed at different moments of the research.

3.3 Common knowledge and weak spots

The term food contact materials covers a wide range of products. Participants mostly associate with this term containers to store or transport cooked food, as well as utensils to cook and consume food. On the other hand, they rarely think about napkins and wrapping at the point of purchase, for example at a butcher’s.

As explained above the participants were asked to carry out a preparatory exercise (homework) in which they were asked to name and provide images of food contact materials, without any specific prompting. This section builds on the findings of that exercise.

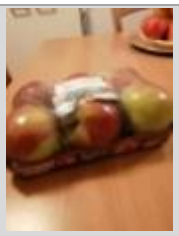
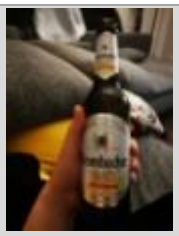
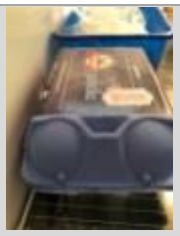
Participants were required to keep in their home diary a record of the food contact materials they used on a regular basis (see Table 3.1). There appears to be a clear understanding that containers to store food items at home or to transport food in plastic or glass are food contact materials. The participants use plastic containers, mostly for their practicality because they use them to store food in the fridge, freezer, or to microwave food, but also for their appearance of sturdiness and durability. Additionally, they mentioned plastic and aluminium wrapping films used to cover their food either for transport or for home storage.

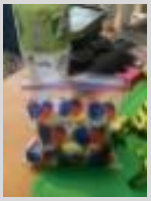
They also recognised the wooden, plastic, silicon and metal utensils used to cook and consume food, which are also FCMs. Dishes to put in the oven and cutting boards were also mentioned. Their use of wooden and silicon utensils encompasses mixing food in pans and pots, removing food from plates and dishes. They mentioned using plastic utensils, especially outside of their home, besides the metal cutlery they use at home. Alongside utensils, participants mentioned in their home diary the use of non-stick cooking pans as food contact materials.

Very few participants spontaneously mentioned napkins as an FCM, nor any type of wrapping at the point of purchase. Very few mentioned point of purchase wrappings. For instance, they kept the wrapping used on the meat bought at the butcher's and stored it in their fridge.

We also requested the participants to bring to the workshop one food contact material that they considered as relevant to the discussion. Across countries, at least one of the participants brought a plastic container or Tupperware, as well as a wooden spatula and a glass jar.

Table 3.1 Home Diaries – Record of food contact materials activity (typical examples covered)

Plastic containers	Ustensils	Wrapping films	Glass containers	Cardboard
				
				
				

Plastic containers	Ustensils	Wrapping films	Glass containers	Cardboard
				
				
				

Participants in the co-creation workshops had very fragmented knowledge of food contact materials and potential issues linked to these. Some potentially harmful practices were better known than others.

There appears to be a level of understanding around the potential toxicity related to aluminium in contact with food, especially when it is exposed to high or low temperatures. The participants mentioned high-profile media coverage of aluminium contamination of drinking water or contamination from its presence in cosmetics.

In most workshops, as well as in the home diary exercise, participants demonstrated that their main concern is about plastic. Most consider that plastic containers should not be put in the microwave or the oven. They were able to explain that this was potentially dangerous owing to the leaking of particles of plastic into food. They also mentioned that containers can melt when exposed to high temperatures.

When it comes to Teflon or non-stick pans, the participants expressed concerns about continuing to use pans when there are visible scratches or any other type of damage. The participants pointed out that it is possibly dangerous to use them because of a lack of knowledge about the materials used to produce the pans, as well as the leakage of these substances into food cooked in the pan.

On the other hand, very few participants demonstrated an awareness of the potentially harmful effects of wooden utensils and cuttings boards, especially if they are not cleaned properly. Wooden spatulas remain the preferred cooking utensil, that is used with all types of food items. Only a few participants in Germany expressed some concerns regarding wooden cutting boards. They explained that it would be preferable to have a cutting board for specific types of food (meat, separately from vegetables and fish) to avoid cross-contamination.

Knowledge and understanding that a practice is potentially harmful do not prevent participants from continuing with that practice. Most participants in the workshops stated that they used at least some of the potentially harmful practices that were explained or presented during the workshops

In the workshop activities the research team used cards and examples to explain the following potentially harmful practices:

- reheating food in ice-cream plastic boxes or plastic containers sold for storing food;
- freezing food in glass containers, plastic containers, aluminium foil, or supermarket wrapping (for meat and poultry);
- disposing of plastic bottles labelled as bio-based into compostable waste;
- washing in the dishwasher, freezing or heating food containers for which the label or sticker containing information has been lost.

As shown below participants admitted to:

- using ice-cream containers to freeze and reheat food, especially if the container looks sturdy;
- heating food in containers without a label, mostly in a microwave, not in the oven;
- most participants assume if warm food (takeaway) was sold in a plastic container, then this container can be reused for heating other food;
- freezing food in glass containers, as glass is considered to be the safest material;
- freezing food in containers without a label because the freezing process is less likely to cause damage to the food or the container, according to them;
- no participant would use aluminium foil or metal packaging to freeze food;
- washing plastic containers without a label in the dishwasher, since they discard the container only if it is visibly deformed;
- as the participants generally did not know the meaning of bio-based and the guidelines for disposing of containers labelled bio-based, they would mostly dispose of the packaging according to their own understanding of the recycling rules.

Table 3.2 Occurrences of harmful practices among participants

Practices	Occurrence
Freezing ice-cream container	
Reheating takeaway container	
Freezing in unlabelled container	
Using dishwasher to clean unlabelled container	
Unknowingly disposing of bio-based container	
Heating ice-cream container in the microwave	
Heating unlabelled container in the microwave	

Freezing in glass container	

The table above has been established on the basis of the transcripts' coding.

In addition to the practices that were prompted during the workshops, participants also raised these additional concerns about given FCMs:

- Mostly, participants would not consume food from a container that has a visible deformation or discoloration. However, some participants reported they would still drink water with a slight metallic taste from a reusable bottle because they are unsure of how harmful it is.
- Participants also mentioned concerns about reusing polystyrene containers received from takeaways. They explained that they would use these containers to store dry food in their homes, but not to reheat or freeze food.
- Also, participants who know that a given use is potentially dangerous admit to doing so from time to time out of convenience.

> *I would microwave a cardboard box if I don't have an option, if I am on the road or something, but if I am at home or the workplace, I would put it on a plate. It is only for the meal experience.*
>
> *Finland, Woman, 31-60*

> *It depends, if the container was expensive, I might hand wash it, but if I didn't care about it then I would risk it and put it in the dishwasher.*
>
> *Ireland*

> *When it becomes too difficult, you cannot be bothered to try. At least I don't want to have 50 different recycling bins at home, and where would I put them.*
>
> *Finland, Woman, 31-60*

Finally, there was an underlying expectation the main responsibility for managing risks regarding FCMs lies with the public authorities (regulators) and the manufacturers. Participants expect that no dangerous food contact materials should be in circulation no matter their use or reuse recommendations. In other words, a material that is at risk of being dangerous when heated, frozen, scratched or in other conditions should not be in circulation. It should not be the responsibility of consumers to make sure they avoid such risks.

Participants' understanding of responsibilities when it comes to FCMs

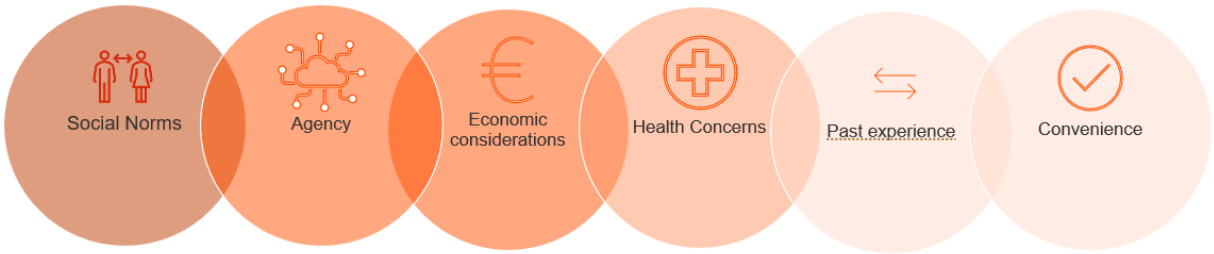
- → Participants strongly believed that materials that could cause harm because of leaching of substances into food should not be put on the market. They expect to be fully protected by a legal framework from leaching of dangerous substances into foods when they purchase a product. Before the point of purchase, producers and retailers should be held responsible for ensuring safety.
- → They understand that they have some responsibility when it comes to choices made at the point of sale. Their preference for sustainable materials (such as no packaging or use of porous materials) could lead to contamination with allergens. Depending on their situation and risk-awareness participants are more or less willing to take such risks but they understand this is a responsibility for them to assume.
- → Finally, they understand that the use of food contact materials that they make [or 'use'?] at home, post-purchase, is under their responsibility.

3.4 Behavioural triggers for the consumption of food contact materials

This section examines the most salient drivers when it comes to consumer experiences, practices and use of food contact materials in their everyday lives. While participants understood that the category of food contact materials is quite broad and encompasses many different types of items, most of the discussions evolved around FCMs used for storing food (this includes reusing packaging for storing), those used for preparing,

heating or freezing food or packaging used to protect food at the point of purchase. There was substantially less focus on items such as tableware.

The workshops identified the following six triggers motivating behaviours:



Overall, the most common trigger identified across all countries is convenience. Practicality, ease of use, transportation, and cleaning drive the behaviours and consumption choices of participants as regards food contact materials.

3.4.1 Convenience

The choice of food contact material is motivated mostly by how convenient and accessible its use is for the consumer. The time and effort the participants will have to invest in changing their habits or switching to a more sustainable or safer material should not disrupt their current practices.

Participants recognised that although glass was the safest food contact material, according to them, it is heavy to carry especially in the case of buying from bulk. Consequently, though they perceive plastic containers as less environmentally friendly, they are lighter to carry and to transport.

Subsequently, there is the element of availability of a new material in their usual shops and supermarkets. The idea of having to change their habits to purchase more sustainable containers can be a barrier in this process. The case study of the reusable container and supermarket deposits can be used to illustrate this point. Participants would prefer not to sanitise containers themselves; instead, out of convenience, they prefer the option of retrieving a cleaned container at the supermarket directly.

> *"We have grown up with plastic containers, so it takes a change of generation to start using [new materials]. And I think that just general availability is a pretty big thing, because it is a lot more difficult to find, in a shop, something like bamboo utensils compared to plastic spoons.*
>
> *Finland*

3.4.2 Economic considerations

The cost is an important consideration when selecting and purchasing food contact materials. It is perceived as a barrier, as well as a driver of consumer behaviour regarding FCMs. This trigger is usually linked to convenience. participants are more inclined to choose the cheaper option, if they believe the products can be used interchangeably.

In order to promote more sustainable food contact materials and encourage participants to purchase such materials, it is generally believed that new FCMs should be cheaper than the more traditional ones. Additionally, there is a consensus across countries that the authorities and the supermarkets should provide monetary incentives to encourage the correct disposal of packages made of biomaterials.

Furthermore, the participants consider that the more expensive the container is, the safer it should be. There is a clear correlation made between well-known brands such as Tupperware and safety. The participants explained they are more inclined to purchase more expensive containers because they last longer, are more practical and have a wider range of uses.

> *"The main thing that I think about is health, but sometimes you also consider your wallet. If one product is much more expensive than another and they are identical, then most times you will buy the cheap one because it's a bargain. It may not be good for your health, but you're concerned with the present moment.*
>
> *Greece, Man, 18-25*

> *"I would like to buy like that, in a paper bag, those kinds of dry ingredients. Is it just because we are not used to it? Is that why it is weird?*
>
> *Finland*

3.4.3 Social norms

Social norms empower potential shifts towards safer or more sustainable behaviours and materials. Informal and unwritten rules tended to motivate participants regarding their choices of food contact materials.

Participants tend to mirror the behaviour of people around them and therefore reuse food contact materials that might not be safe or hygienic. This was quite perceptible in Greece for instance, where people reuse plastic bottle to store olive oil, wine, and ouzo.

Consequently, this trigger is also a barrier when encouraging new consumption habits, such as buying from bulk. In some countries, participants mentioned that they would not be inclined to buy from bulk as it is not yet a usual consumption practice.

> *It [glass] is tried and tested, it has been there before plastics and everything. It is going back hundreds of years really when you look at it.*
>
> *Ireland, Man, 65+*

3.4.4 Past experience and/or habit

Past experiences drive the behaviour of most participants with regard to FCMs. They mostly rely on the knowledge that has been passed down and shared among members of their inner circles and communities.

This element is particularly prevalent among older participants who associate their consumption habits and uses with the idea that systems in the past were safer and more sustainable. This view is also shared to some extent by middle-aged participants who believe that health risks have increased with the use of new food packaging materials.

3.4.5 Health concerns

Health concerns are another common trigger identified by the study, especially among participants with specific conditions. They often choose FCMs based on their beliefs and perception of what is the safest food contact material to use, and at what temperature.

> *I've worked in the restaurant industry, so I know what it's like. This stuff isn't really washed properly. I'd prefer to take my own cutlery.*
>
> *Poland, Woman, 18-25*

Health concerns are often linked to consumer doubts about cleanliness and the contamination of food contact materials outside of their home and the chemicals used to clean such materials.

They are very aware of issues relating to microwaving plastic or the use of aluminium. They are however very distrustful of the current industry and therefore prefer to rely on FCMs that have been in circulation for a longer amount of time, particularly because they are afraid that what was considered safe one day might be considered unsafe in the future.

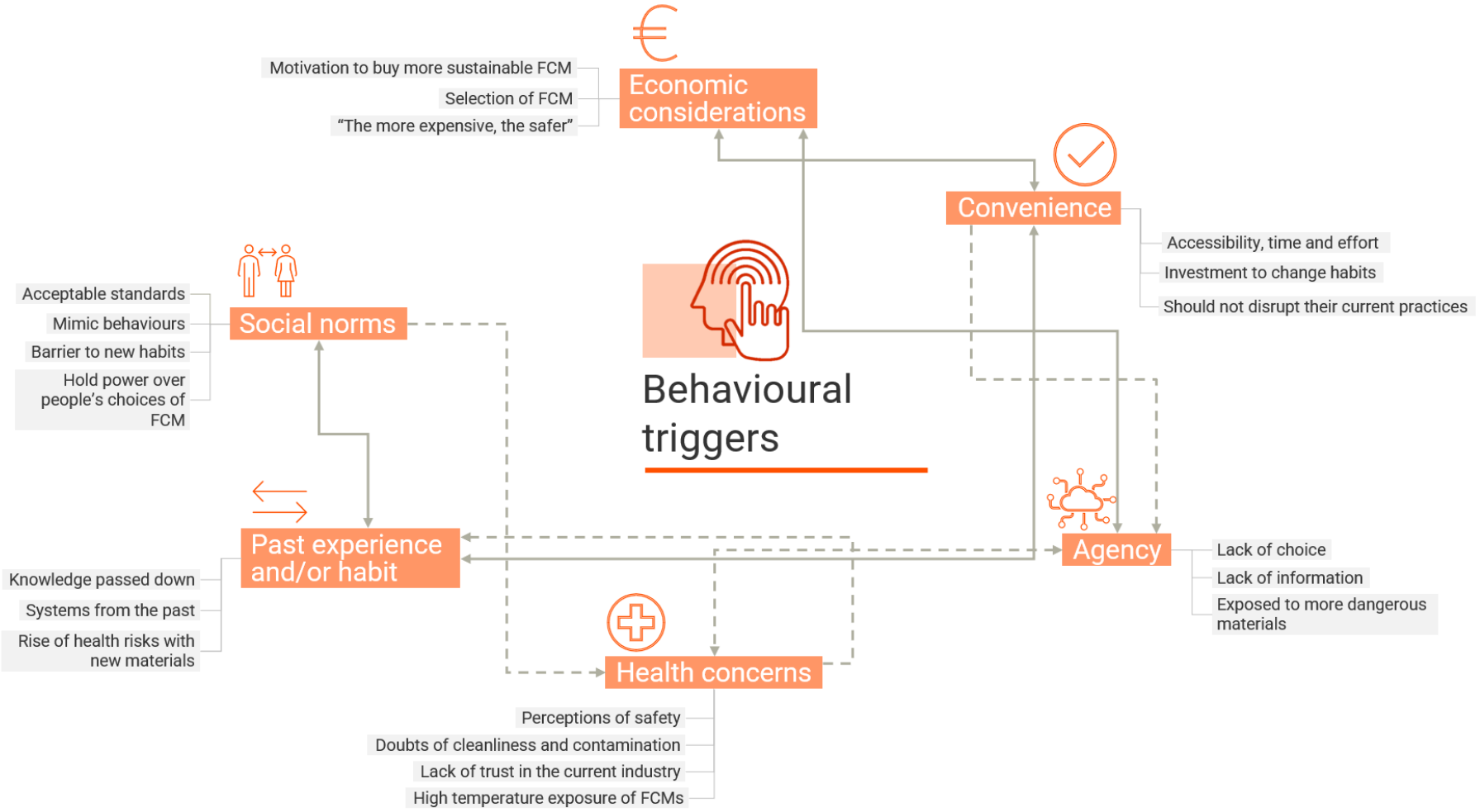
3.4.6 Agency

Some participants do not believe they have the ability to make choices when it comes to FCMs and therefore they tend to raise concerns over the production of containers and packaging. Participants are deterred from staying informed about new and more sustainable materials and are less involved in changing their dangerous practices.

> *Well, no, basically we as consumers have no choice. The manufacturer and the lawmaker [have the responsibility]. We don't make the packaging.*
>
> *Romania*

There appears to be a link with health concerns and economic considerations. The lack of FCM choice is forcing participants to buy cheaper products that could potentially be made of dangerous materials, leading those participants to be exposed to harmful chemicals or acquiring defective products that need to be replaced more frequently.

Finally, we note that most participants had not thought about their choice or the lack of it before the start of the study. However, when provided with information and facts, they appear to have a clear interest in the production, and the potentially dangerous chemicals used in FCMs.



Participants' main reasons in their choices of food contact materials

- → *Availability and convenience*: the food inside the package drives the choice rather than the package. At home they use utensils that are convenient for them including reusing packaging for heating, freezing or storing;
- → *Family and peers*: participants repeat the choices of other people they see around them. What they believe about food contact materials' safety or hygiene is often from what others around them have said or shown them;
- → *Traditions:* for certain types of food contact materials (for example certain dishes or cooking utensils) traditions also weigh on what people choose. For instance, choosing a wooden spatula instead of a silicone one because traditionally wooden utensils have always been used at home.

3.5 EU citizens' consumer profiles

During the analysis of the participatory workshops, three archetypes of consumers emerged with diverging perceptions, habits, and behaviours regarding the safety, hygiene, and sustainability of food contact materials. Identifying three overarching consumer profiles helped the research team in analysing participants' needs and concerns discussed further.

- Archetype 1: the Ecological Defender is a consumer who attaches greater importance to the sustainability aspect of food contact materials versus the safety aspect.
- Archetype 2: the Unassuming Consumer is the most common consumer, who changes their mind when choosing between rather safe or rather sustainable consumption, depending on the event and its convenience.
- Archetype 3: the Health Protector is a consumer who emphasises the need for a guarantee of safety. These consumers will advocate new norms of hygiene and will consciously avoid adjusting their habits to more sustainable options.

These personas or archetypes represent three typical positionings of consumers vis-à-vis the issues of safety-hygiene-sustainability of FCMs and their use. However, in real life people may adopt less clear-cut positions and adopt the perspective of one of the personas in some situations and another persona in other situations. The purpose of these personas or archetypes is to show that participants had different sensitivities to the issues analysed in this study.

EU citizens' consumer profiles

Convenience

Past experiences/Habits

Economic considerations

Health concerns

Agency

Social Norms

THE ECOLOGICAL DEFENDER

- Informed and engaged
- Advocates sustainable choices and consumption
- Positive perception of additional costs
- Feeling of doing something good

THE UNASSUMING CONSUMER

- Uninformed and highly disengaged
- Authorities should carry responsibility
- Sustainable FCMs perceived as inconvenience
- Unknowledgeable of potential dangers

THE HEALTH PROTECTOR

- Informed on safety and hygiene
- Lack of trust in new materials
- Plastic as main concern
- Actions based on intuition

Archetypes

THE ECOLOGICAL DEFENDER:

- **Most common behaviour**: they tend to be well-informed and motivated to find ideas for more sustainable choices for food contact materials. They are engaged and generally young consumers. They take part in advocating more sustainable choices and consumption of FCMs; sometimes their sustainable actions are implemented unconsciously.
- **Behavioural triggers**: the key behavioural triggers identified are social norms (peers), convenience and economic considerations. The additional costs when choosing biomaterials are perceived as positive.
- **Weak spots**: the primary weak spots are a lack of knowledge regarding the differentiation of a compostable and biobased FCM. They base their actions on a feeling of doing something good. They are inclined to choose more expensive options to ease their conscience.

THE UNASSUMING CONSUMER:

- **Most common behaviour**: they are mostly uninformed, uninterested and highly disengaged consumers. They believe the responsibility for safe and sustainable FCMs lies with the authorities. They perceive sustainable options as an inconvenience.
- **Behavioural triggers**: the main behavioural triggers are convenience, social norms (family) and agency. They will base their choices on what is available for each situation separately. Additionally, economic considerations are important as they are key drivers in their choices.
- **Weak spots**: the key weak spot identified is ignorance of the potential dangers of harmful substances leaking from containers. They also tend not to dispose of their food contact materials unless they notice a visible deformation or discoloration.

THE HEALTH PROTECTOR:

- **Most common behaviour**: they are fairly well-informed about safety and hygiene issues. They tend not to trust the safety of new materials used to package food items. These consumers are mostly concerned about plastic and its prolonged exposure.
- **Behavioural triggers**: the key drivers of the behaviours of these consumers are past experiences and habits, as well as health concerns and social norms. For instance, they demand guarantees in terms of hygiene to shift to buying from bulk.
- **Weak spots**: dominated by their desire for safety and hygiene above all else, their FCM related actions are driven more by intuition than by knowledge and information. This weak spot is generally based on past experiences and social norms.

3.5.1 Archetype 1 - The Ecological Defender

Archetype 1 profiles are described as consumers who assume that the standards of food contact materials available in their countries are safe and hygienic and that this should be guaranteed. They mostly trust governmental bodies and the companies producing the materials, including the more traditional materials, as well as the newer and sustainable materials. These consumers believe reusability and recyclability of FCMs can be cost-effective in the long-term.

Safety is perceived as being guaranteed. Thus, they feel that the responsibility of consuming sustainable food contact materials lies with them. Ecological Defenders will not only bear this responsibility but will also advocate finding motivations and ideas to promote sustainable behaviours, and support a more ecological consumption of FCMs, as well as keeping themselves informed about current trends and issues.

Generally, this consumer profile is young and committed to making compromises between convenience and economic considerations to prioritise sustainable materials. For example, participants in Germany and Finland tended to divert the discussions about safety towards sustainability.

Archetype 1 truly values the importance of sustainable consumption, sometimes even unconsciously. These participants are more concerned with issues of waste disposal, what is compostable or bio-degradable, and the production cycles of their FCMs. They are interested in initiatives and biomaterials that are safe, without being inconvenient and/or costly.

The participants reflecting these characteristics seem to be interested more in the sustainability matters because this is aligned with their values and they see this as an area that they have influence over (e.g. they can decide to minimise purchasing of packaged or over-packaged food, they can also decide not to purchase in plastic containers). They also seem to be believers in implementing sustainable systems such as recycling or compositing, as they tend to describe them positively and find benefits in shifting their habits.

> *I think if I can recycle something then I am happy enough to recycle it.*
>
> *Ireland*

> *No, you would only pay at first more for the packages and then it would be cheaper.*
>
> *Germany*

> *It [using reusable containers at markets] would at least make me interested, and to begin with, there would be a positive interest and perhaps the possibility of a longer customer relationship.*
>
> *Finland, Man, 18-25*

3.5.2 Archetype 2 - The Unassuming Consumer

Archetype 2 represents uninformed and rather disengaged citizens. This consumer believes the responsibility to act on the safety and sustainability of food contact materials lies with governmental authorities or producers. The Unassuming Consumer is mostly driven by economic considerations, agency, convenience and social norms. The appearance of packaging is also considered as an important driver when choosing food contact materials.

This profile is likely to reuse single-use items, especially if they have been sold to them. For example, in one of the workshops, some consumers explained they would prefer traditional materials for packaging to be brought back on the market because they are more convenient and cost-effective. Archetype 2 likes to reuse packages that are sold to them, such as takeaways or ceramic yoghurt pots due to their practicality and lower personal costs.

The Unassuming Consumer is generally uninterested in the new materials used for packages. On the other hand, despite being conscious of sustainable options, they do not want to be forced to be part of the movement. They see it as an inconvenience rather than a motivation to converge towards a more sustainable consumption and utilisation of food contact materials.

Participants who were identified as being part of this profile generally made food purchases (and thus also packaging purchases) which were driven by the food itself rather than the FCM which protects it. They were unaware of potential harm that FCM could cause or if they heard about such claims, they also preferred not to think about the risks excessively or at all.

> *Dangerous substances leaking into my food. I have never considered it before but now it is on the screen.*
>
> *Ireland*

> *A deposit is a good measure. It's difficult to force people to do certain things. Some people will never do it. If people don't clean their house, you can't force them to wash bottles, so I think that a deposit is a good solution in the middle, going in the right direction.*
>
> *Poland, Man, 65+*

3.5.3 Archetype 3 - The Health Protector

Archetype 3 represents consumers who prioritise the safety and cleanliness of food contact materials over their sustainable consumption. This profile is engaged and informed about safety and hygiene issues, such as the dangers of plastic and aluminium, as well as the potential leakages of substances into food. This is notably perceptible in Malta. In France, this consumer profile has been noticeably impacted by the microplastics scandals. Their choices when it comes to food contact materials are driven mostly by past experiences, health concerns and social norms.

The participants representing the characteristics of the 'Health Protector archetype' perceive biomaterials and the rise of sustainable consumption as food contact materials that still need to demonstrate their safety and hygiene. They believe that current trends force them to worry more about the recyclability and reusability of materials rather than their safety. This was particularly perceptible in the workshop discussions in Malta.

The Health Protector is less likely to keep single-use packaging as these consumers are concerned about its reusability and overall hygiene. They are particularly concerned about plastic and its different types. They often place the emphasis on the safety of ceramics or glass, as well as marble, highly rigid nonporous materials that they feel that they can sanitise and are not dangerous to heat in the microwave, according to them.

> *I see packages which they say are biobased, but I don't question what they are because I just eat them. Malta, Woman, 18-25*

> *For me its safety because I don't see the use if it makes me sick what's the point.*
>
> *Germany, Women, 18-25*

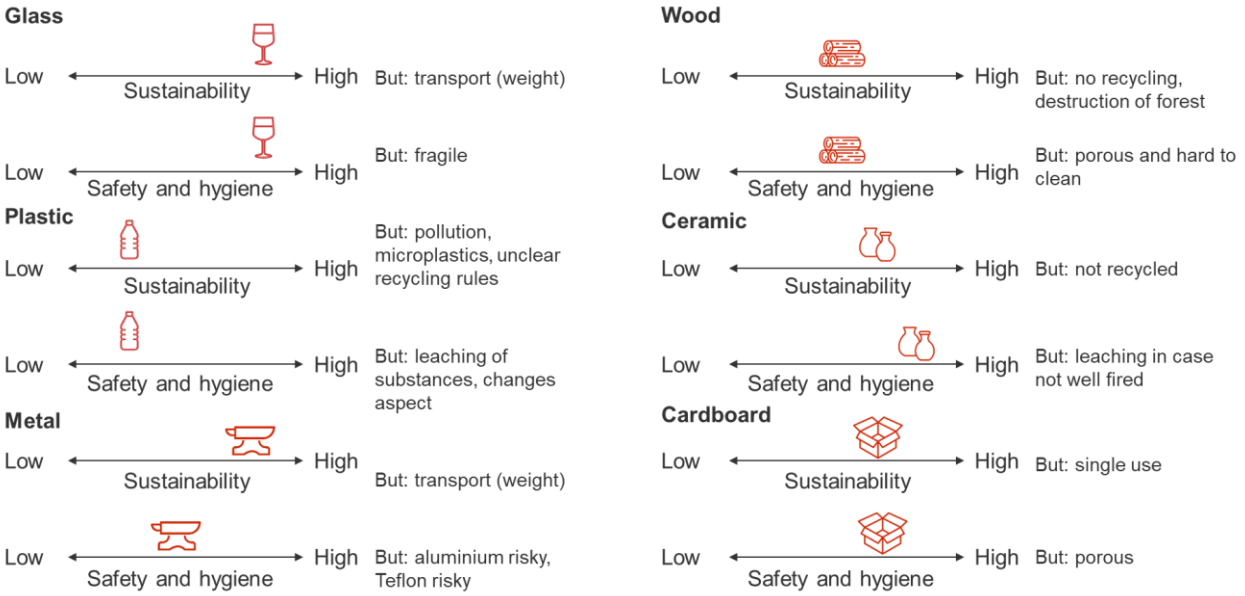
> *I don't pay too much attention to whether it's environment-friendly or not, I mostly pay attention to the food itself: if it's high fat, high sugar: tasty, but also nutritious. Health comes before the containers, the containers are all fine, otherwise they wouldn't exist. It's mainly what you're eating, from one factory to the next, I think.*
>
> *France, Man, 65+*

4. Concerns, needs and preferences regarding the safety, hygiene, and sustainability of FCMs

4.1 Synthesis

One of the objectives of the study was to identify and analyse the current understanding of the needs and preferences of EU citizens with regard to FCMs, particularly from the point of view of safety and hygiene on the one hand and sustainability on the other hand, as well as the trade-off between them.

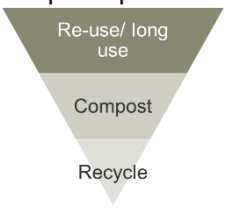
The chart below provides a summary of consumer perceptions of the various FCMs discussed in the workshops in terms of sustainability, safety and hygiene.



Participants discussed the following issues as the main area of concern regarding FCM safety and hygiene:

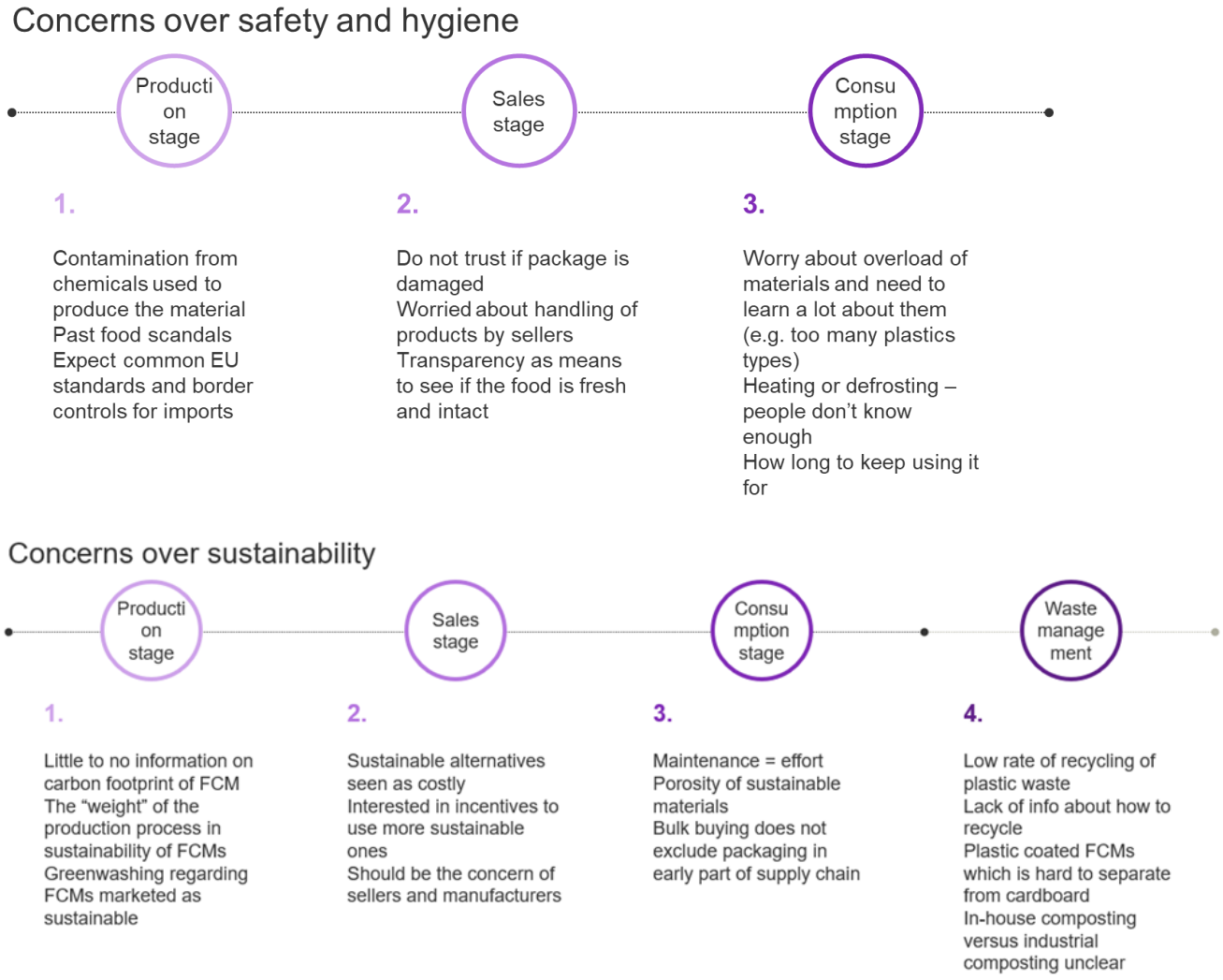
- Whether the material is synthetic (e.g., plastic, silicone) in which case participants perceive that there is a risk that substances could leach into food. This is a strong area of concern as this threat is invisible and therefore participants feel ill equipped to detect it.
- Whether it is porous and can therefore be easily contaminated and difficult to clean.
- Whether it can be oxidated (e.g., rusting) and therefore leach into the food through the oxygenation process.
- Whether it can be easily damaged (scratched or broken) and thus leave traces in the food.

When it comes to sustainability participants suggested a hierarchy of the characteristics of sustainable materials which is shown below. Long use and reuse are seen as the key characteristics of sustainability. Composting - provided that participants know how and where to do it - is also highly appreciated. One area that participants were unclear about concerns materials that are synthetic including those that are biobased or recycled. There was considerable confusion about the substances used to manufacture these materials. Overall participants consider that the risks from these substances could be higher than the benefits arising from avoiding traditional FCMs.



The extent to which participants trust or distrust the FCMs available in their country is influenced by the manufacturing process (or rather their perceptions of the process), but also by their own trust in institutions. The more they trust institutions and regulations the fewer concerns they tend to have. There were also discussions about

the fact that a) there should be high and common standards regarding FCMs across the EU and b) means should be in place to ensure that imported FCMs comply with the EU standards.



4.2 Methodological note

Concerns, needs and preferences were not separate blocks of the discussion. Rather, they were discussed at different moments of the research, from the home diary exercise (Day 1 and 2) to the introduction and discussion on Concerns (Part II of the discussion, after the introduction), as well as the discussion held during the Thematic Booths. For the analysis of EU citizens' concerns, for example, participants were asked to answer the following questions during the first workshop exercise (Part 2 of the guide "Exploring habits, experiences and attitudes toward FCMs"):

- *Are the concerns presently on the screen similar to the ones that you thought about? What are, for you, the top 3 or 4 concerns?*
- *How should these concerns be addressed, in your opinion? Moderator to give examples of a situation for participants to understand the concern if confusions arrive. Moderator to prioritise here first those that did not give an answer first in the previous question.*
- *What are other concerns related to Food Contact Materials you can think of? Moderators to look at list and ask them for top-of-mind reactions of concerns that are not on there yet. Ask participants to share their experiences including from their home diary and the FCM they used/brought.*

For the views of participants on what is a safe and sustainable FCM and what is not, the analysis mostly relied on results from the home diary exercises (Days 1 and 2) and discussions held during the third exercise of the workshop (Part 4 of the guide "Thematic deep dive – Booths"). Participants were asked the following types of questions (taken from Part 4 of the discussion guide):

– *When you think of safety in relation to Food Contact Materials, what comes to your mind? What is one food contact material that is for you very safe? Why?*
– *Which elements constitute sustainability when it comes to Food Contact Materials?*

4.3 Beliefs and preferences regarding the safety and sustainability of specific FCMs

During the workshops participants discussed a range of food contact materials throughout different discussion slots. The materials discussed were notably:

Glass

Plastic, including soft plastics, such as foil, vacuumed packaging, and hard plastics, such as that used for Tupperware, whether traditional plastics, biobased or compostable/biodegradable (these were discussed together)

Metals, including soft metals such as aluminium and hard metals such as stainless steel

Ceramics

Stone, i.e., chalk or granite

Wood

Processed wood, i.e., carboard and paper

Remaining biobased materials, i.e., wax, corn-based, mushroom-based, etc.

The participants expressed different attitudes and preferences depending on the materials. The main findings in respect of each of the materials are summarised below.

In relation to **glass** participants tend to trust this food contact material when it comes to food safety. Glass is mostly seen as having the following characteristics that participants see as reassuring when it comes to safety:

- it is stable and sturdy and therefore participants do not perceive it as posing a food safety risk when it comes to storing freezing or heating;
- in relation to heating there seems to be good understanding about which type of glass is resistant to heat and which is not, and in general this is an area where participants are very knowledgeable;
- it is also seen as easy to wash and therefore hygienic.

In general glass is a material with which participants are very familiar with and tend to trust. Moreover, it is seen as sustainable because it can be recycled continuously or even simply refilled. At the same time participants are aware of the fact that it is not practical for transportation. They are also aware that its weight implies higher emissions linked to transport.

> *At the moment food contact materials that are plastic and are single use or otherwise are not recyclable to be used as another food contact material. In the case of glass, its primary use is food contact material.*
>
> *Ireland, Man, 31-60*

> *I would think that glass is safe. Most products that have a long shelf life, such as fruit jams, some beans, they're all in glass.*
>
> *Poland, Man, 31-60*

> *To me, glass seems to be the most sustainable material. M: Because? - Because it doesn't affect the environment either, it's easily recycled, and it doesn't affect us either. - Also glass. It can be reused until it breaks. - And after breaking, because it does.*
>
> *Romania*

A large part of the discussions during the workshops evolved around **plastic**. First, participants trust and expect that the safety of materials at the point of sale is guaranteed by the manufacturers and retailers. They expect that any materials sold should be safe for storing the food that they contain. When it comes to the use that participants make of plastics after the point of purchase, their concerns, preferences and uses they make of these materials vary greatly:

- Participants acknowledge, as explained in the previous section, that they use plastic materials for storing, heating or freezing food without necessarily being certain that the plastic in question is suitable for that purpose.
- They worry about plastic changing in its appearance as a result of heating. Depending on their profile, participants are more or less concerned about the fact that heating could cause leaching of substances into products. Some participants (see section on archetypes) are aware of the potential harm and therefore state that they replaced plastic food containers with glass ones. Others, on the other hand, admit that they use food containers not initially designed for microwaving for that purpose.
- Participants use the fact that plastic becomes softer as a result of heating as a mental shortcut to suggest that it could leach into the food. In other words, they worry about leaching for those plastics that become soft, but they are less likely to be concerned about other types of plastic leaching;
- Concerns were also raised about recycled plastics. Some participants are wary because the recycling process uses many chemicals. They worry that these could leach into the food.
- For some food categories that can decay rapidly (for example chicken meat) participants understand the need to use plastic foil as protection for the purposes of hygiene, to avoid contamination. However, a few participants also highlighted that food is overpackaged (typically in plastic) and that this does not necessarily correspond to consumer demands in terms of food safety, but is driven rather by marketing and commercialisation practices that benefit the manufacturers.

- In terms of hygiene participants generally consider plastic as being easy to wash, but some participants also expressed concerns about plastics changing colour when in contact with certain foods and therefore not being washable.

Overall, there is clearly some confusion among many participants about which plastics are suitable for microwaving and which ones are not. This seems to be the most problematic issue raised during different parts of the discussions.

As regards the sustainability of plastics, participants recognised that because they are light in weight plastics are more sustainable for products that have to be transported. However, this has to be balanced out with considerations about local food production versus imported food. Depending on the climate of the country and the extent to which local agriculture can or cannot provide a diversity of food choices, participants were more or less concerned about food transportation distances. In countries with strong local food production participants were in favour of less plastic packaging and would prefer to buy local food that has less or no packaging or glass packaging. In countries with less (or less diversified) local agriculture (e.g. Finland) participant understood that some food needed to be transported over a distance, and plastic packaging corresponds to fewer travel related emissions. Overall, however, participants tend to see plastic as being problematic from the point of view of sustainability. Participants also raised concerns regarding packaging where paper and plastic are combined, thus preventing the packaging from being recycled. Some participants would prefer packaging where the plastic and cardboard can be separated to be recycled, but they also admitted that not everyone would take the time to do that.

> *Soft plastic I mean, not the harder plastic. When you boil it, I mean, people think that they're sterilising it because it's boiling water, when it's just totally wrong. It's leeching. So I think yes, I think it is our responsibility but I would still emphasise the education.*
>
> *Malta, Woman, 31-60*

> *(I would also suggest) that the product could even be a bit less nature-friendly, if only it can be recycled in the same box. Which means the recycling process would be fine. But when I have 25 different plastics, I have no idea where to put them.*
>
> *Finland, Man, 31-60*

> *Cheese, meat, things from the butcher, bring your own Tupperware instead of wrapping everything in plastic.*
>
> *France, Man*

Metals were less frequently discussed than glass and plastics. The only exception being aluminium which was discussed relatively frequently. Participants were somewhat divided on the question of concerns over the use of metals, with some seeing them as a good option for long-term storage of food in tins, while others were concerned over the leaching of metals and notably aluminium into the food, either through oxidation or because of heating. Some participants also raised concerns over the fact that they believe metal food contact materials alter the taste of the food (for example in case of canned drinks). Participants are positive about the sustainability of metals for food storage because of the recycling possibilities.

The contamination of food from metals was also discussed in the case of cooking tools. One of the examples used to prompt the discussions concerned the use of scratched cooking materials (for example Teflon among others). Participants largely admitted that they used scratched cooking tools even in cases where they knew they should not be doing so. Participants tend to use scratched Teflon pans even when they know that this could lead to substances leaching into their food and potentially causing harm.

> *Metal, the kind that is safe to use for foods. There is no leaching, there is no corrosion. Of course, if you rub it with a knife, fragments of metal will come off, but in terms of storage, it is.*
>
> *Finland, Man, 31-60*

> *Being very well informed. Basically, being very well informed on what risks this thing poses. That is, if your pan is very scratched and it is a Tefal (non-sticking layer on the frying pan), you may not use it.*
>
> *Greece, Woman, 31-60*

Wood was discussed rather widely in the workshops. Overall participants tend to see wood as a sustainable option because it is biodegradable. However, participants highlighted that in many of their countries they could not recycle these products if they were soiled with food, in which case they were seen as additional waste contributing to the greater climate emergency rather than addressing it. In terms of hygiene many participants consider wood as difficult to wash and potentially non-hygienic. Issues with bacteria forming on cutting boards and wooden spoons were raised by several participants. Participants also noted that they disliked the touch of wood when used for cutlery.

> *I end up replacing my wooden spoon because it can go to pieces when you're stirring food.*
>
> *Spain*

> *I'm also wondering about wood. What is wood safe for and what can we use it for? We buy fruit in wooden boxes, and they hold up very well. It's not like a plastic bag, but I won't put apples in a glass contained because we buy large quantities.*
>
> *Poland, Woman, 65+*

Ceramics are largely considered as safe by the vast majority of participants. The only disadvantage participants mentioned as regards ceramics is the same as with glass – i.e. the material's fragility. Otherwise, participants tend to put ceramics in the same category as glass – i.e. a safe and durable - albeit non-recyclable - food contact material. Very few participants seem to have concerns over ceramics. One participant noted that when not well fired ceramics could contain substances that could leach into food and be harmful.

> *I've read that if ceramic is not fired well, it can contain large quantities of cadmium, lead, something like that, so it's not that safe. I think that single-use aluminium containers are safe.*
>
> *Greece, Woman, 31-60*

Cardboard and paper are seen as fairly sustainable by participants. However, depending on the use, they are seen as more or less practical. While participants generally have no objections to using paper bags, concerns were raised about single-use cardboard cutlery or straws. These are seen as not sufficiently resistant when used for consumption. Whilst paper and cardboard are seen as relatively safe alternatives to single-use plastic, they are still single-use, porous and, as a result, not convenient enough for participants. Overall participants appear to have a preference for reusable materials, such as glass or ceramics over single-use ones. Participants raised no concerns about the potential harm coming from paper or cardboard products. They did note that the paper could disintegrate (for example paper cups or cutlery) but they were not concerned about this being harmful. It could be unpleasant and alter the taste, but participants were not too worried about these limitations of the material.

> *I would hope that paper and cardboard materials could be further developed and used more widely. I hate those snack pots which are plastic on the inside and paperboard wrapping on the outside. You have to go through the trouble of separating them.*
>
> *Finland, Woman, 31-60*

Stone was barely discussed in the workshops. Most participants seem to have little experience with it and no specific concerns around it.

Finally, **bio-based materials** are seen as a rather obscure category by the participants. This category is not well known, participants have little experience of it and do not really know what it entails. As a result of this confusion, they perceive these materials as similar to the materials they initially replace – for example, bio-based plastic is seen as having the same safety and sustainability qualities as other plastics, and with the added characteristic that it will be easily degradable, therefore even less safe.

> *I would want to know how long it takes for this material to decompose vs the normal plastic ones.*
>
> *Germany, Man, 65+*

Though this was not explicitly covered by the workshop prompts some participants raised questions about conservation gases used to extend food lifecycle. The participants who raised this point had doubts about the gases involved and the need to ensure that these are not harmful.

4.3.1 What is a safe and hygienic FCM?

In their understanding of what is a safe and hygienic FCM participants discussed a total of nine general characteristics:

Porosity or openness of the material (lack of) – exposing the food to the outside air or to absorbed materials

Breakability of the material (lack of) – causing the FCM to harm the participant directly (for example, glass) or to visibly lose its shape, so that it is no longer usable (for example, plastic melting)

Easily scratchable or rusty (not) – resulting in the FCM protective cover being damaged and potentially being transferred into the food

Long-lasting material – enabling consumers to use the material safely for an extended period, without any fear of repercussions (including, for example, a change in shape or appearance)

Unsuspicious appearance – seeming safe to participants, based on their past experiences and local norms of what is a safe material, including biases for transparent and white materials over materials that are coloured (no presence of ink), preferences for thick rather than thin materials (plastics)

Toxicity – not chemically reacting with the food or decomposing as the food is being handled, potentially and unsuspiciously leaking dangerous substances into the food

Unsuspicious resulting food – meaning that the food does not change its taste or smell after being handled in the FCM in question

Flexibility of usage – being able to sustain a variety of temperatures and environments without deteriorating and impacting the quality of the food or, to a greater extent, the safety of the consumer

Ability to be cleaned – preventing the permanent transfer of smells and colours from the food to the FCM, and by extension, dangerous substances

For most participants, hygiene is a form of safety. Therefore, when they refer to safety, they refer to both the chemical safety of the FCM itself and the visible (e.g., breakability and cutting) and invisible (e.g. leakage of dangerous substances) dangers it might pose to the human body, as well as how well the FCM protects the food from bacteria (which this study refers to as hygiene). As general criteria for the safety of the FCM, participants mentioned two main aspects: **the unsuspicious appearance of the FCM and of the resulting food**. This is linked to the belief that participants can evaluate, through their senses, whether an FCM is not or no longer safe, based on past experience and habits. Participants mentioned looking at the:

- → colour of the FCM, which was associated with plastic and paper;
- → print on the FCM, which was associated with paper, plastic, and ceramics;
- → coating on the FCM, which was associated with Teflon, but also paper and cardboard with plastic coating;
- → smell of the food (metallic, moulded, 'plasticky'), which was mostly associated with metals and plastics;
- → taste of the food (wooden taste), which was mostly associated with plastic and wood.

> *So, changing taste, colour, smell. You want to just; you don't want it to have any interaction with the food substance. You want to buy tomatoes that are going to taste of tomatoes, you don't want that to be coloured by the material that it's contained in.*
>
> *Ireland, Man, 31-60*

As part of the **safety of the FCM itself and its dangers for the human body**, participants mentioned the material's breakability, flexibility of usage, scratchable nature or ability to rust easily when used, which are all seen as linked to the FCMs long-lastingness. They also mentioned its chemical composition and leakage of dangerous substances. Knowledge of these aspects and the importance attached to them are linked to the past experiences of participants, but also to their health concerns, as well as to sensitive sub-populations (for example, for parents) and to a dislike for hassle and friction. Specifically, participants look at:

- → Whether the FCM can leak substances and if so how**.** Linked to the FCM's chemical composition and the flexibility of its usage, **this is seen as the most dangerous FCM characteristic for most participants**, because it is seen as hard to assess through the senses. This means that participants could get affected without knowing it. This was mostly associated with plastic and aluminium.
- → Whether the FCM can break easily at a high or low temperature, such as plastic melting in the microwave or glass breaking when moved from a very hot to a very cold environment. This concern is particularly high when it comes to hot temperatures, such as those of a microwave or an oven. There is, however, little understanding of the potential effects of taking an FCM from one temperature to the next very quickly – including defrosting. This was associated with almost all materials except for steel and stone.
- → Whether the FCM can rust and, if so, how that affects the food. An example often mentioned was that of dented cans, which look like they are still holding the food intact, but in fact might have rusted and affected the food inside. This was mostly associated with all metals except for stainless steel.
- → Whether the FCM is scratched or chipped. We note that although they know of the potential danger that this can cause, in particular for hard materials, such as glass and ceramics, many participants would still use scratched or chipped FCMs. This is particularly the case of Teflon pans, where many participants do not see a connection between the scratch on the material and the potential for that material to release dangerous substances into their food. This was mostly associated with plastic, ceramics and metals (in particular, pans).
- → Whether the FCM can hurt the participant when broken, such as glass, which is a particular concern for parents making decisions on what FCMs to give their children. Despite the example of parents and

> *We do not think about whether, for example, a Teflon pot affects us. When you see that it peeled off you think, when you see that it peeled off you think, is it still good anymore, or not? I don't think it's good anymore. Or when it started to rust, you have a jar with a lid, you look and you see that it's rusting, wait a minute it's actually an aluminium lid and it has something like a varnish, because it's not aluminium.*
>
> *Romania*

> *You can put it in the microwave because it's quick. Some ways of doing it offer better taste and a better way to reheat. But generally when there's the heating aspect with food: you try to avoid it. Freezing is different (less of a problem). You feel that any container made this way can go in the microwave by default.*
>
> *France*

children, this was seen as **the least dangerous FCM attribute** by most participants, because it was easily observable and fixed. Participants could also easily identify those FCMs that were more easily breakable and know how to act differently around them. This was mostly associated with stone, ceramics, and glass.

> *SP4: Glass can hurt you and fall on my foot.*
>
> *Germany, Man, 65+*

As part of the **hygiene of the FCM, i.e., how well it protects the food from microorgaisms (e.g. bacteria) and external agents**, participants referred to two main characteristics: first, its porosity and openness to the outside air, and secondly its ability to be cleaned. The consideration of those characteristics stems from health concerns, past experience, convenience and ethics (in particular, sustainability). This concerned in particular:

- → Porous materials, in particular glass, paper and cardboard are seen as fairly inconvenient and unsafe because they could easily absorb substances around them indiscriminately, not only causing them to lose their integrity, but also making them dangerous for participants with health conditions.
- → Materials that could not be fully cleaned or sanitised, porous materials included, are seen as being able to absorb or retain dangerous outside substances that could then rot or transfer to the next food with which the FCM comes into contact. This was especially the case in the context of restaurant or takeaway food – most participants trusted the cleaning process in their own homes, but were wary of the capacity for FCMs to be cleaned outside of the home, even if they were talking about the same cleaning process and the same FCM. This was especially the case for wood.
- → Interestingly, participants did not see the cleaning process as one that could render the FCM unsafe, for example through excessive scratching.

> *It's a question of attitude. But disposable ones are very much an option, but it's hard to choose a good option because we're phasing plastic out because it creates a lot of waste, wood is a hot topic now, but it absorbs bacteria, but it's biodegradable.*
>
> *Poland, Man, 31-60*

> *R7: Using your own bottles means you have to wash them on the spot, according to special instructions. And not at home. Wash it on the spot. R8: Too much hassle. R7: I'd rather not carry a dirty bottle, I'd wash it at home, probably twice*
>
> *Poland*

4.3.2 What is a sustainable FCM?

In their understanding of what is a sustainable FCM participants discussed a total of seven general characteristics:

Reusable – reusing the material several times, without having to replace it and therefore waste additional resources

Recyclable – disposing of the material, knowing that it will be processed specifically to create a new material in the future and not generate more waste

Compostable – disposing of the FCM, knowing that it will be broken down completely into non-toxic components (water, carbon dioxide and biomass) that will not harm the environment, given the right conditions, which is aligned with the definition of the European Environmental Agency[8].

Long-lasting – enabling consumers to use the material safely for an extended period of time, without having to replace it and therefore waste additional resources

Production materials – making the FCM with materials that are seen as not harmful to the planet, i.e. found in great quantities and/or that are not toxic

[8] https://www.eea.europa.eu/publications/biodegradable-and-compostable-plastics

Production process – not being produced in a way that impacts the environment negatively, including through the release of various toxic gases (methane or CO2), as well as through the use of a large quantity of additional materials.

Length of supply chain – being produced locally and not requiring a significant number of resources to arrive at destination

Overall, these characteristics can be divided into two groups: those that are linked to the production of the material and those that are linked to the usage of the material.

Participants referred more often to **sustainable characteristics linked to the usage of the material**, i.e. the material's reusability, recyclability, compostability and/or long-lasting nature:

- → Reusable materials are seen as preferable to single-use ones because they create less waste, even when they do not have an indefinite life. This is seen as the first criterion for a sustainable material in most countries, and was mostly associated with glass, hard wood, ceramics, stone and metals.
- → Recyclable materials are seen as preferable at times to reusable ones, because, as all materials have to be disposed of at some point, participants pointed out that it was better if this could be done easily, and in a way that respects nature. Some participants highlighted seas of plastic, or the dumpsites that they had seen in Africa. This characteristic applies to wood, paper, cardboard, and glass, as well as biomaterials.
- → Compostable materials are seen as preferable to recyclable materials because they can be reduced to natural substances and are, therefore, less of a hazard in the eyes of participants. Nevertheless, they raised several concerns, in particular as regards materials that are industrially compostable, at the opposite of safe for the compost bin. This is seen as a particular issue with compostable plastics.
- → Finally, long life, durability and resilience were the most common adjectives used to describe materials. Although participants often referred to the reusable aspect of the material, they also highlighted an additional characteristic of the material, i.e. that the longer a material can be used, the less another material will be needed. In fact, durable materials do not have to be reusable, such as tin cans for example. Other materials mentioned here included stainless steel, glass and ceramics.

> *SP2: Starting from something that is long lasting so basically, you're protecting the environment. SP1: the opposite of single use maybe. SP2: exactly.*
>
> *Malta*

> *You also have to bear in mind that the end consumer must also accept the innovations positively. You can see with the "straw" example, everyone is dissatisfied with it. With this product, for example, you have to drink within a certain time, otherwise, it dissolves.*
>
> *Germany, Man, 31-60*

> *SP7: The main thing is that you when you save even 20% of plastic, that is a pro. We want to keep plastic out of our lives. SP6: It says that it degrades. If it degrades it's a good product. It doesn't last, it goes away. The words they use here are true. The previous one was a lie.*
>
> *Greece*

Although all participants did not spontaneously discuss **the production process of FCMs,** when they did, they often saw it as an extremely important area of which they had little or no knowledge. Indeed, this area of sustainability often raised more questions than it answered, revealing a greater need for awareness as a means to motivate good behaviours and choices. Primarily, participants discussed the FCM's components, its production process, and the length of the supply chain from the collection of those components to their storage. Participants often referred to knowledge they had acquired recently, in particular through the increased attention given to CO2 emissions of produced goods, such as food. Participants were concerned about potential greenwashing claims being made regarding FCMs and considered such practices as unethical. They generally believed that the phase of production is an area where the responsibility is on manufacturers and the public authorities whereby the latter define rules and monitor their implementation.

- → Although natural, non-toxic components, such as wood, paper and cardboard, are preferred to synthetic and transformed components, participants appeared confused as to what makes a component "natural". In particular as plastic, for example, is made with petroleum, which is a natural component. This was particularly the case for biomaterials and new sustainable materials.
- → The production process of FCMs is an important characteristic to a lot of participants for two reasons. First, the production of materials could include the use of additional substances and release a lot of waste and gases, which would have a negative footprint. Secondly, the production of materials is a mystery to some, in particular materials produced through recycling or composting, and there is a fear that chemicals might have made them unsustainable and, potentially, unsafe.
- → Finally, a sustainable material is a material that was not produced far away and therefore did not involve large transport related emissions. All participants were unanimous on this characteristic for all materials.

> *"I'd have another concern, because after all it's still safety, but the safety of the planet, to be manufactured in a way that doesn't put a lot of pressure on the planet.*
>
> *Romania*

> *"I'd like for the brands to communicate from the cost standpoint, on the cost in general, and I'd like for brands to offer us both versions, glass or plastic, at present we don't have this, the consumer should have a choice.*
>
> *France, Woman, 65+*

4.4 Concerns and related ideas over the safety and sustainability of FCMs

The concerns of participants related to different stages of the FCM's life: during production and delivery to the shop (Production phase), whilst at the shop and being sold (Selling phase), whilst in the participants' home (Consumption phase), and after it is disposed of (Waste management phase). Safety and hygiene concerns most often related to the Production, Selling and Consumption phases, whilst concerns linked to sustainability related to the Production and Waste Management phases.

Overall, participants concerns are to a large extent shaped by two factors: 1) knowledge and 2) trust in institutions. First, participants rely on their often limited knowledge of FCMs, whether pre-existing or gained during the workshops. Therefore, some of the concerns expressed below reflect a gap in information and awareness rather than a need for legislative change. Secondly, participants are also significantly influenced by their lack of trust in production systems, which is further reinforced by past experiences of food industry scandals.

On **safety and hygiene**, in the production phase, most participants raised concerns over the safety of the production of recycling and compostable plastics, and their potential impact on their health. They also expressed some concerns over the consistency of safety standards from FCMs produced within and outside the EU. In the selling phase, participants highlighted the concerns over the regulation of the conditions under which the FCM has been placed before being sold to them, as well as the choice of material for some takeaway food, in particular aluminium boxes. Finally, for the consumption phase, participants believe that what they could not see was the most dangerous safety issue for an FCM. As a result, most see the regulation of the leaching of toxic substances into their food as the most pressing safety and hygiene concern. Other concerns expressed by participants included how to maintain the integrity of their FCM over time, and after having used it at a high temperature. Finally, participants highlighted that they were unsure how they could clean products to ensure that they would be sanitised without scratching them or destroying their integrity in another way. '

On **sustainability**, at the production stage, many participants are afraid of FCM production having a negative effect on the environment, despite the material itself being considered as sustainable. They also expressed concerns over the importation of FCMs, and Archetype 1 participants expressed a need for the localisation of production. At the selling stage, participants discussed hygiene concerns they had with regards to reusable and buying from bulk systems. Participants also discussed their concerns about the additional cost of sustainable FCMs and who should bear it. Finally, the waste management phase of the FCM life cycle worries participants the most, in particular how to dispose of new materials and ambiguous materials, such as coated paper FCMs. They also discussed the lack of harmonisation of waste disposal systems across the EU. Finally, they discussed the lack of clarity of certain terms used to designate new sustainable materials, such as biomaterial, biodegradable and compostable.

4.4.1 Participants' concerns and ideas over safety and hygiene of FCMs

Safety and hygiene concerns linked to the production stage

First, participants are worried about the materials with which their FCMs are produced:

- → Participants are wary of FCMs that they think are not produced through natural means, but rather by using "chemicals". Participants are very concerned that these chemicals remain on the material and might intoxicate them without their knowledge.
- → Participants are also worried about added substances in their FCMs that could make them unsafe or have a reaction with their food. This is particularly the case for FCMs, in particular containers, that are not white or transparent, but are coloured.

> *SP3: But even for the, excuse me, it's more important for the other not for the self. Because the thing is people are getting sick, without knowing. Because I see at work, they put plastic containers in the microwave and I can't believe, even just a glass, bottle of water without heating it – it's still leeching plastic or whatever substance in the water. So just imagine something coming from China or whatever and you're putting it every day in the microwave and then what is this all about, all these cancers and things like that?*
>
> *Malta, Man, 31-60*

Secondly, participants expressed concerns over the regulation of FCMs:

- → Participants, based on their experience of food industry scandals, are very concerned about potential safety issues that could emerge as regards FCMs in 10 to 15 years. They trust that tests on the short and mid-term effects have been carried out but are unsure of the long-term effects of some materials.
- → Participants consider that EU regulations should ensure a consistent and harmonised level of safety across the EU but are not really sure that this is the case currently.
- → Many of the participants, although not a majority, are also afraid of the compliance of imported products from outside of the EU. Some expressed concerns over them, in particular as regards products imported from China[9], because they are not sure they are all tested and compliant when imported. They are widely unaware of the safety reports that have to be produced upon importation of these products and this concern is often based on an apparent lack of information on the topic.

> *R6: I don't know how pressed palm leaves are more ecological, because they are transported from the other side of the globe with a freight ship. What makes it more ecological than pressing a similar one with birch leaves.*
>
> *Finland, Man, 31-60*

Thirdly, in rare cases some participants are also worried about the transportation of FCMs:

- → Some participants expressed concerns that FCMs might not be transported in the right conditions, leading retailers to receive faulty products that might have tested safe prior to transportation.
- → This concern is based on the awareness of other such issues in the past in the food industry, for example an incident over frozen food deliveries where a cold chain was not properly implemented in France.

[9] We detail participants' sentiment towards China more clearly.

Safety and hygiene concerns linked to the selling stage

Participants highlighted that in principle they should not have to worry about the safety of the FCMs they use, but rather that this safety should be ensured by the shops. This belief is counterbalanced by past experiences in which they believe this was not the case.

First, participants expressed concerns over how well food packaging is handled in shops:

- → Many participants do not trust shops not to damage the packaging in which the food is sold. Another concern involves participants with allergies, and doubts as to whether the integrity of FCMs has been impaired, in particular through traces (scratch marks, etc.) and therefore whether they are safe to use.
- → As an example, participants expressed concerns especially about thin packaging such as salad wrappings, which they had previously seen being ripped or damaged and had significantly impacted the quality of the food (taste, colour, freshness).
- → Several participants also highlighted the hazardous handling of bottles of water, with participants being concerned about bottles of water being left in the sun all day, which they are afraid could lead in summer to the plastic heating up and leaching into the food.
- → Finally, participants also often mentioned cases of dented tin cans, which they often still find on shelves. They expressed concerns over selling cans in such a state and questioned whether this should be the case.
- → Many participants believe the solution is to select materials that appear uncompromised or to rely on what they see as safer materials, for example glass. They also recommended unplanned spot checks in shops, in particular in summer, to ensure proper storage.

> *I agree. I heard if you left a water bottle in the car then the sun made it leach and it was bad for you. I try and avoid plastic, but I do still have some non-BPA things. I still use them in the fridge*
>
> *Malta, Woman, 31-60*

> *They sell cheese in bulk at farmers' markets. I called the markets security and informed them. It's a health hazard! It's 40 degrees in the summer!*
>
> *Greece, Woman, 31-60*

Participants are also concerned over the choice of packaging for food items in shops:

- → First, participants expressed concerns and raised questions over the choice of FCMs found in takeaways. Several participants were afraid that the use of aluminium cases, if scratched, could be dangerous for their health and potentially leach dangerous substances into their food.
- → One other concern that several participants mentioned was the fact that packaging often constitutes a barrier between them and the food. As a result, they could no longer see whether the food was fresh, in particular for products such as meat. They felt that this could expose them to spoiled products, and preferred packaging that was transparent.

> *If there's a tin on the shelf that's dented, I won't buy it SP5, F70: Or if the plastic on something is swollen. SP7, F48: Yes, it happens with milk cartons too. SP5, F70: If there's a change in the shape it means something's going on inside that's not clear.*
>
> *France*

Finally, participants are worried about the hygiene of reusable FCMs used to serve and eat food in markets and shops:

- → Whether in bulk shops or open-air markets, most Archetype 2 and 3 participants are concerned about how to maintain the hygiene of reusable FCMs used for serving or eating food. This is especially the case for food items that they could not then clean at home, for example nuts or milk. This concern is linked to what they perceive as a lack of information on cleaning procedures by shops and, therefore, a feeling of a lack of control.

> *They sell cheese in bulk at farmers' markets. I called the markets security and informed them. It's a health hazard! It's 40 degrees in the summer!*
>
> *Greece, Woman, 31-60*

→ Comparatively, participants in Archetype 1, however, explained that they believed this to be a small worry compared with that of the environmental damage that single-use FCMs could produce.

→ Participants with health conditions explained that they would not be able to take part in such activities because of these concerns, for fear of cross-contamination.

→ One idea proposed by participants is to have a sanitiser on site from which they could get the FCMs, or to have self-service stations that would automatically deliver the product.

> *I am celiac so I would be more worried about cross contamination, say wheat with something. Like nuts, if it just got into it or whatever. I am quite sensitive to it. For me, I would have to watch it and think about it!*
>
> *Ireland, Man, 65+*

Safety and hygiene concerns linked to the consumer stage

Most concerns expressed by participants were linked to the household lifecycle stage, which is understandable, as this is the stage of the FCM's life over which they have the most control. At the same time, they feel that they lack the knowledge needed to make accurate decisions.

First, some participants, often seniors, expressed concerns over the diversity of FCMs available today:

→ Participants expressed their disarray with regard to the great variety of materials available for use, the main issue being the need to learn not one, but several good behaviours to adopt. This is seen as especially complicated by Archetype 2 participants who rely mostly on cost, convenience and past experience to make their choices.

→ This issue of diversity was particularly apparent when discussing plastics and participants are generally unaware of the differences between types of plastics. There are also concerns about new materials as well as materials such as aluminium foils.

→ To address this concern, one participant suggested that there could be harmonisation of the types of FCM that could be applied for given situations/uses. This would mean simple and similar instructions for all FCMs in a given context (e.g. for heating or for baking).

> *We have too many different packages and they should start there, so they should start in the whole beginning process and make things easier there. For example, if you look at yoghurt packages, they have all these different sizes, maybe they should simplify already there.*
>
> *Germany, Man, 65+*

Secondly, participants were afraid of damaging the integrity of a plastic FCM through incorrect usage:

→ Participants often did not know at what temperature different types of plastic FCMs would be safe. In addition, processes such as heating or defrosting, where vast differences in temperatures are reached in a short period of time led many participants to worry about the potential dangers. Some participants who were aware of the potential microwave dangers were afraid that freezing could lead to similar risks. However, participants also admitted not knowing at which temperature their microwave heats up food.

→ Another concern related to the length and number of times it would be safe to use a plastic FCM until it "went off", i.e. was no longer stable enough to be safe and/or started leaching substances into the food. This was especially the case for participants with children, who were afraid that their plastic FCM might become comparatively more toxic for their child than it would be for them. Specifically, a lack of knowledge increased the fear of participants that a safety level could be unsafe for another, more vulnerable person.

→ Concerns over the flexibility of materials is reflected in a generalised fear of "microplastics".

→ Beyond using the FCM incorrectly, what concerns participants the most is that they do not feel sufficiently well informed to know what to do. They therefore welcome the idea of receiving more information in this area, both on the FCM label, but also through

> *Products should be transported at a specific, regulated temperature, so that, let's say, if they leave a very hot country, and then they pass through a very humid country, e.g.: canned food can rust very easily, plastic can emit certain toxic substances, if it is very hot. If it passes through sections of 50 degrees in the sun, I think it exists. - If you look at the instructions of food, on aluminium, plastic cans, they say that they must be stored at the temperature of 24 degrees or up to 32 degrees.*

> *DO YOU THINK SOMETHING COMES OFF FROM THE PLASTIC, LIKE MICROPLASTICS. R7: Yes, and perhaps food traces stay in the scratches. I: SO, IT'S ABOUT HYGIENE. R7: Yes, hygiene,*
>
> *Finland, Woman, 31-60*

information campaigns that would enhance their understanding of the label itself. See next section.

Finally, participants expressed concerns over how to maintain the hygiene of some FCMs:

- → Some participants were worried that, by cleaning FCMs, they would compromise their “chemical composition” and therefore safety. This is the case for FCMs made of wood or of plastic.
- → Participants requested more information to address this issue.

4.4.2 Participants’ concerns and ideas over sustainability of FCMs

Sustainability concerns linked to the production stage

Overall, participants were concerned over their lack of visibility regarding the production process:

- → Many highlighted that they had little information on the carbon footprint of their FCM, or on the usage of water.
- → Participants also highlighted that they would like to see elements such as the origin of the electricity used factored into the FCM’s environmental footprint.
- → Some participants were worried that “the industry” used a lot of single-use plastics in the production of materials, which were then not disclosed to consumers.
- → Participants also believe that the footprint of the production process would be larger for sturdier, denser materials than for lighter materials, giving rise to concerns about the greenwashing of some reusable FCMs.
- → Archetype 3 participants were also afraid that the impact of the production on the environment could also impact their health, through the release of toxic fumes and leakage of substances into nature.
- → Participants believe that they should be able to ascertain the impact of the production process on the environment to make a decision when choosing an FCM.

> *“I don't know what the energy footprint of the production of each one... So, the "environmentally friendly" also has to do with what resources are used to produce the plastic and glass. It's not just about safety. It is also the issue... That both are now recycled. That is not our problem, but how much energy does a factory need to produce.*
>
> *Greece, Woman, 31-60*

Participants were also afraid about the impact of transport and protective packaging of the FCM on the environment:

- → Most participants were concerned over the environmental footprint implications that transportation could have for an FCM. They would prefer the FCM to be produced locally, without the need for it to be transported over long distances.
- → Participants also explained their concerns over the amount of packaging used to transport FCMs, in particular as this packaging is often single-use.
- → Participants believe that to address these concerns a closer and more transparent production process should be introduced and communicated to consumers, either on the label or online.

Sustainability concerns linked to the selling stage

Cost is the main concern of participants when buying sustainable FCMs:

- → For participants, their experience of sustainable FCMs is often that they are a more costly option than other FCMs, specifically reusable ones. As a result, participants highlighted that making environmental choices can be a more costly option initially because there is a need to make this initial investment.
- → Participants also mentioned that subsidies and incentives have been successful in motivating them to buy reusable items. For example, in Greece, participants mentioned the Environmental Tax.
- → Nevertheless, some participants stressed that they feel it is the responsibility of governments and businesses to bear the cost of the sustainable aspect of FCMs.

> *Ideally, this shouldn't be on the consumer. Because, you know, if the consumer pays for it, the price goes up, and then consumers are discouraged from using this format, they look for cheaper solutions that are not necessarily good and Earth-friendly.*
>
> *Poland, Man, 31-60*

Another key concern with sustainable FCM options, such as using reusable items and buying from bulk, is hygiene which was discussed with regard to safety and hygiene.

Sustainability concerns linked to the consumer stage

First, the main concern of participants regarding using reusable FCMs is the inconvenience:

- → Participants highlighted that the maintenance of a reusable FCM required greater effort, including cleaning, extra planning for shopping trips, and an extra weight to carry.
- → Participants leaving the cleaning responsibility to shops for the sake of convenience do however have reserves about the cleaning process and using potentially second-hand FCMs.
- → Finally, alternatives to single-use plastic materials are deemed to be very inconvenient to use, including the porosity of paper.

> *I have metal and glass straws at home, and you can taste the metal taste and honestly putting them in the dishwasher is not even cleaning them properly.*

Participants also expressed concerns over the system of buying from bulk:

- → Participants highlighted that buying from bulk does not provide for information on how to conserve the food bought. Therefore, they do not know which FCM would be the most suitable for conservation purposes.

Sustainability concerns linked to the waste management stage

Participants discussed the quantity of waste that was created through FCMs:

- → Single-use items top the concerns of most participants. Many explained that they were concerned that many FCMs were not being recycled and therefore created additional waste.
- → In particular, participants are concerned that porous materials that are in contact with food can no longer be recycled even when the original purpose of using them was increased sustainability. As a result, rather than addressing the issue they generate more waste.

> *SP10: If you for example use glass and can keep using it then it is less waste of energy for production, and it's better for the resources on earth. SP11: It saves trash and money; it costs a lot to produce containers all the time. SP12: But who knows if recycle and cleaning and stuff does actually save money and energy.*
>
> *Germany*

→ Some participants mentioned and disapproved of the fact that this waste was then disposed of in other poorer countries. They also explained that because of the transportation involved, the waste disposal system increased the environmental footprint of the FCM.

Participants expressed numerous concerns over their understanding of the recycling process:

→ Most participants were confused about the recycling process of FCMs. Many did not know where to recycle which FCM and how to read the relevant information provided on the labels.

→ Participants also mentioned that coated paper FCMs, such as yoghurt pots, were very difficult to recycle, because the plastic could not be easily separated from the paper

→ The terms biodegradable and compostable were also found to be confusing, as compostable can mean different things, and industrial composting is not the same thing as home composting, which is confusing for participants. Participants also did not understand how to dispose of recycled FCMs, and whether for example these could still be put in the recycling bin.

→ In order to understand how to recycle better, participants requested additional information on the recycling process.

> *"R6: Probably being natural in the sense that they don't use oil. R2: I am still confused what it really is that makes them bio-based. Because in direct chemistry, organic compound is anything that contains carbon. So what is the difference, is it about production, is it a human-made material, or if it is made of, well, is oil organic or not, in terms of chemistry, it is an organic compound. I don't understand where you draw the line. R7: I think it is extremely important that the recycling processes are clear, so that the benefit is not lost when it is recycled incorrectly."*
>
> *Finland*

4.4.3 Trade-off between issues of hygiene, safety and sustainability: currently assigned priorities

Overall participants tend to believe that safety is a concern that prevails over sustainability. At the same time however they feel it should not be that way. They believe that manufacturers and retailers should be responsible for ensuring the safety of FCMs. While they accept that they have some responsibility over this when it comes to the use they make of FCMs in their household, they also believe that no substances that might be dangerous when heated or frozen should be sold. If safety is ensured before the goods are sold than participants should be able to prioritise sustainability.

While many participants see the need for making more sustainable FCM choices they also believe that:

- sustainable FCMs are more expensive;
- these are made difficult by the retail practices – in some supermarkets even buying fruit and vegetables without packaging is difficult as many are only offered in pre-packaged formats;
- recycling and collection infrastructures are insufficient and unclear for participants who do not know where and how to dispose of materials (which bin, which supermarket where bottles should be returned).

Participants are concerned about the fact that sustainability implies often less or no packaging. When no packaging is used (bulk purchases) some worry about products being handled by numerous customers. As a general rule, participants are not very enthusiastic about reusable FCMs in market settings. They are worried about how they have been washed.

When prompted to reflect on refilling systems or deposit-return measures for containers participants were positive but nevertheless recognised the accompanying logistics challenges. These call into question their shopping habits and represent potential constraints (they would need to go to specific places and take many things back to shops). Rather than refilling systems or deposit schemes participants preferred other sustainable options such as limiting packaging in the first place, buying from bulk or packaging that can be fully recycled. There were however some differences in this regard depending on the extent to which deposit schemes already exist in the country concerned notably for bottles.

Overall participants feel that they lack the knowledge to make choices about both sustainability and safety. In either case their trade-offs are influenced by a patchy sum of beliefs and knowledge.

Generally, participants consider that tighter regulations on single-use plastics would not have a very negative impact on participants but would have positive consequences on the environment (less plastic thrown away).

Some participants still believe that traditional materials are both more sustainable and safer or at least not unsafe, such as glass. Participants also referred to the case of non-stick pans being found to be potentially harmful years after introduction. Participants tend to believe that going back to traditional materials, rather than inventing new, confusing ones, would make these choices easier.

Regarding new materials participants want studies on materials to be made public and more widely shared with people. This would empower participants to make their own choices.

Regarding new materials, in particular those that are compostable, participants highlighted the absence of infrastructure for industrial composting, thereby adding another collection point that people need to worry about. Generally speaking, participants feel that there are too many potential collection points that they as participants need to worry about (returning bottles to one place, industrial compositing in another place, recycling of plastic being disposed of in yet another manner).

5. Information needs and preferences

5.1 Synthesis

The workshops show that there is a strong rationale and opportunity to communicate more and better on the safety and sustainability of food contact materials. Participants have limited knowledge and understanding of the risks involved in (re-)using different types of FCMs and they also have mixed levels of understanding of which FCMs are sustainable and how to dispose of them. The current labels are familiar to participants (they took notice of them), but many are misunderstood. Participants do not spontaneously seek information about FCMs (except the "health protector" archetype). Therefore, it is important to use proactive outreach to provide information to them. While participants do not have sufficient concerns to lead them to search on their own initiative for information, once they are prompted with more information about FCMs they are interested in the topic and want to know more about it. They mostly recognise that both the safety and sustainability of FCMs are issues of which they should be aware. When provided more information during the workshops using expert cards and vignettes participants became more aware of the need for themselves to take action to either protect themselves or make informed decision on their purchases/disposal of their FCM.

The discussions also show that there are limitations to what can be achieved through labels alone and that other means of communication are needed to accompany a labelling system. There are several topical areas about which participants want to be informed when it comes to FCMs:

- whether to heat/freeze them and how (to what temperature, in microwave vs. oven, for how long);
- composition of the FCM in particular regarding new types of materials;
- frequency of reuse or when to dispose of the material;
- how to dispose of the material;
- who is the source of the information (messenger).

The list of items is potentially too long to be covered in one label even though workshop participants did propose labels that would combine information about several of these aspects into one visual. However, any label would need to be accompanied by additional information campaigns which will help participants better understand the labels and what the symbols mean.

Overall, the workshops showed that:

- The labels and related information are better received when they are focused on actions (do's or don'ts).
- The labels have the advantage of being "at the right place in the right time" – in other words participants see them when they have the FCM in their hand ready for use (or reuse).
- At the same time labels are not sufficient as the information on them cannot cover all needs and often they are not entirely self-explanatory. There is a need for memorable and wide-reaching information campaigns so that the meaning of labels becomes more intuitive.
- Other supporting materials or educational tools should reflect what are the right touch-points when participants think about the (re-)use and disposal of FCMs. The materials should be visible or available to participants at the time when they most need them – so either at the point of purchase or when they are in their kitchen making relevant decisions about FCMs.

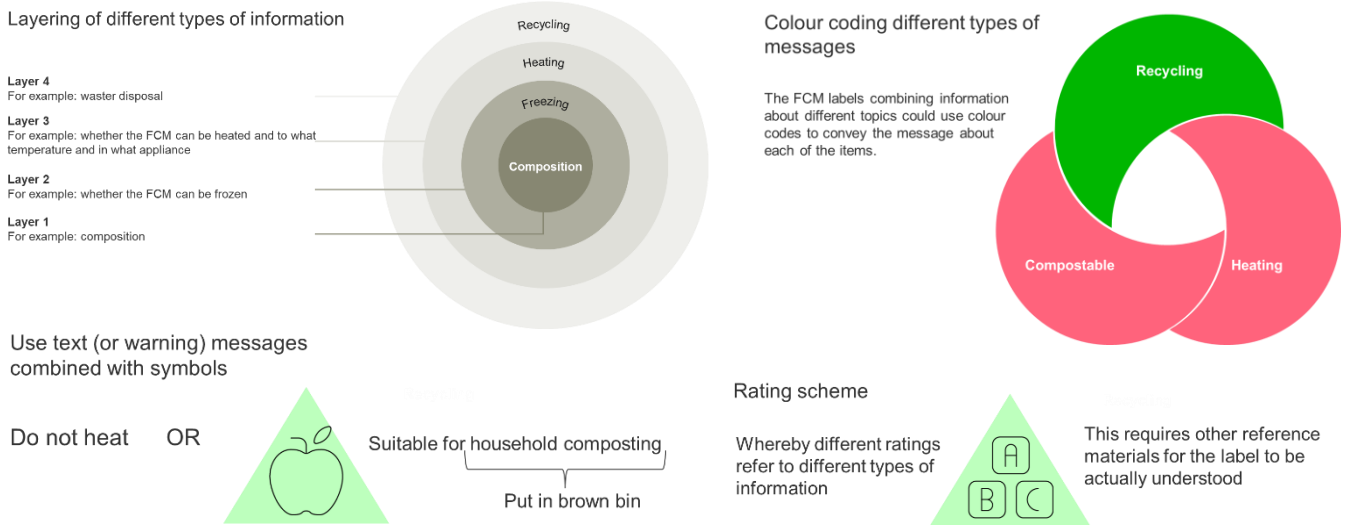
However, the underlying expectations of participants are that:

- No materials that might pose a serious risk when reused should be available on the EU market. Participants are not willing to accept risks related to chemicals leaching into food because of the production of FCMs or because of the way they reuse FCMs at home. They are not able to assess these risks and strongly believe that these are the responsibility of manufacturers and regulators.
- Participants are willing to take some risks when it comes to hygiene for example when buying from bulk, but these are situations where they can assess the risk themselves. The same applies in the case of allergies and possible contamination. Those participants who are concerned about food allergies do have a preference for packaged products over bulk ones. Generally participants

understand that it is their responsibility to ensure that they buy products that are packaged so as to avoid this risk rather than expecting all bulk stores to manage this risk for them.

- After discussion participants do understand that risks might arise from reusing FCMs at home for purposes for which the FCM was not intended. This is the area where more information and education is needed.

The workshops recommended different types of techniques to convey information about FCMs. Some of these techniques were about how to present the information as shown below.



5.2 Methodological note

This section benefited from insights stemming from different activities and areas of the discussion guide, such as the case studies, the expert cards and, most importantly, the labelling workshop. Participants were found to mention their knowledge gaps and their preferred information related solutions throughout the discussions. Insights about the information needs and preferences of participants were hence collected vertically throughout the discussion guide and gathered in this section.

However, to better comprehend this section, it is crucial to describe how the labelling workshop was organised. Participants were split into two groups of five and were put into the shoes of the European Commission for a role-playing game. The participants were reminded that the EC is currently revising current EU regulation and legislation around FCMs and wants to improve labelling and participants' access to information.

Therefore, the last section of the workshops built on the previous parts of the discussion and invited participants to work as a group to create new ways of communicating information about FCMs. Participants were reminded to think about their FCM related concerns and were presented once again with a selection of nine existing labels. In addition, they were asked to look one last time at items they brought along with them and to look at how their current labelling reflects optimal usage.

Participants were also invited to draw their ideas on paper using stationary handed out in the group. Finally, the two groups of participants were brought back together and were asked to present their creations and ideas to the other group. Throughout the exercise and discussions participants were prompted to think about different topics through suggestions such as:

- What type of information should be disseminated? Hygiene or sustainability for example.
- What should be visually displayed? Text, images, both?
- How to instil trust in the label or information shown?
- What type of format should it take? Engraved on paper material? Sticker? digital?
- How could we disseminate knowledge about the new labels?

The co-creation activity during the workshop aimed at stimulating participants to create a label with all the information they would need to make a safe and sustainable use of food contact materials. After they have

been given more concrete information through the previous activities and been prompted to think about their concerns and information needs, the creation of a label was done collectively in small groups. Participants used their personal ideas, knowledge gaps, preferences, and existing labels to build their food contact material label.

This section shows how participants answered these questions, but also reveals the major gaps in knowledge related to the current levels of information that participants have. It is also solution oriented and investigates how participants envisage bridging their current knowledge gaps.

5.3 Information gaps and needs

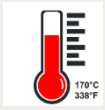
Participants seem to be somewhat familiar with the labels which were used as stimuli during the workshops. They recalled having seen many of the labels. They were not surprised when asked to talk about these labels as they were aware that such labels existed, and they had taken notice of them in the past. There were, however, some labels that some participants had never seen before. For example, the acidic symbol, the non-edible parts, or the allergy advice.

However, familiarity with labels does not translate into understanding them. Participants had a rather vague knowledge of the meaning of these labels as explained below.

Most participants were aware of the current symbol which is intended to show that the material is safe to use as food contact material. They recalled its shape, but many explained that they had never paid much attention to it. The activities during the workshop related to the labels were not designed to test the actual understanding of these labels systematically. Participants were asked to look for labels on the food contact materials they brought, and examples of labels were also shown to them, but they were not systematically asked to explain what these labels meant. Nevertheless, clear examples of misinterpretation of the labels came up in the discussions. For instance, one participant confused the FCM symbol with the fragile symbol as both include a wine glass on the label. Another participant mistook the snowflake (product suitable for freezing) label with the microwave (microwaveable) label.

The table below provides an indication of the familiarity of participants with the labels (recall the label) and their understanding of them, as well as instances of accurate and inaccurate interpretations of the labels shown in the workshops.

Table 5.1 Overview of the levels of understanding of and familiarity with the labels

Label	Level of familiarity	Level of understanding	Mentioned issues
			
			Confusion with Fragile symbol
			Lack of clarity in terms of actions
			Conceptual misunderstanding and mix-up between bio-based, bio-degradable, compostable
	Symbol   Numbering system		Lack of knowledge of the implications of the symbol Very little knowledge of the numbering system
			Difficult to distinguish whether this applies to the FCM or the food inside the FCM
			
			Unclear what is acidic and what form is considered
			Mistaken for microwavable
			Most did not recognise it
			Label is not well known, and the implications are unclear
Scale	High 	Moderate 	Low 

There is an overall lack of understanding of the more technical symbols which were shown in the workshops, as shown in the table above and discussed below. The discussion also showed that the absence of a label does not prevent participants from reusing the material at home. Indeed, when there is no label, many participants are still tempted to use the FCM for storing, but also potentially for heating, refrigerating, or freezing.

The label that created the most confusion and was not fully understood by any of the participants is the 30% biobased label. As mentioned earlier in the report the concept of bio-based material is not understood and creates confusion. While discussing this label participants mixed up several concepts: recycled plastic, compostability, how to dispose of the material and whether it would decompose in nature. The groups usually could not provide the real meaning of this label.

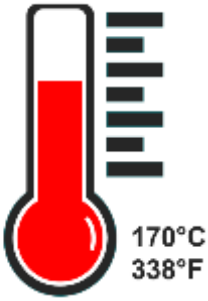
This label is also symptomatic of the confusion that participants have regarding different types of plastic. For instance, several participants mentioned that they or their relatives do not differentiate between plastic types. For many participants all plastic is the same. Participants have difficulties understanding the concept of bio-based plastic, as in their view the notion of bio-based is contradictory with the idea of plastic. They see something that is bio-based as being plant-based, while intuitively they consider plastic as being based on fossils and being synthetic.

The lack of information about the different types of plastics goes beyond the misunderstanding of the bio-based label. It also means that participants are unlikely to differentiate between softer plastics (single-use for example) and harder plastics which are more heat resistant (Tupperware for example). The lack of differentiation affects their usage and might in turn put them at risk, according to participants' testimonies. The fact that participants were confused about different types of plastics and which ones can be used or reused in which manner was apparent when they were discussing vignettes illustrating potentially risky practices earlier in the workshops.

The recyclable label is one that is usually recognised by participants, although several participants never noticed the numbers inside it. The numbers inside the label are highly technical and are based on the fact that there are different types of plastic which should be disposed of in different manners. However as pointed out above participants tend to put all plastics in the same category. While they do know that some plastics are recyclable and others are not (in their country), the label and the related numbering system do not help them to determine which containers should be disposed of in which manner. The label does not clearly state what to do with the given FCM on which it is placed. It mentions that it is recyclable under certain conditions, but it does not clarify in which bin it should be disposed of (understandably because there are different rules across the EU and countries). Subsequently the label has very low informative value for participants. Participants were unable to come up with the real meaning of the numbers inside the label. For illustration, one group's understanding was that the number inside was to be multiplied by ten and then represented the percent of recyclability. For instance, a five would indicate 50% recyclability.

The acidic symbol was not only new for most participants but was also found to be confusing. Indeed, participants found it unclear, and it raised discussions about what food is considered to be acidic and what is not. Participants mentioned that they would clearly know that a lemon is considered acidic (thanks to the picture) but would not know what other products are, for instance they mentioned powders that can be extremely acidic.

The thermometer or temperature symbol is another example of extra information that creates confusion. As this label is not always represented with the “max” mention it is not directly clear that it indicates that the FCM cannot support the temperature indicated. Hence, it is unclear for participants what exactly cannot be done when this label is present. Its simplicity also creates understanding issues as it only specifies the maximum temperature, but other aspects might come into play. For example, it raises questions such as, how long can I put it in at that temperature? What about hot water? How hot does my microwave get? On the other hand, participants had less issues with the “Do not heat” label. Although one could argue that this one might also give rise to confusion regarding what type of heating is not accepted. As the label resembles an oven, it could be that the FCM is microwaveable or that it should not be placed in hot water. Finally, one participant raised the point that they were not sure whether the symbol related to the food or the packaging.



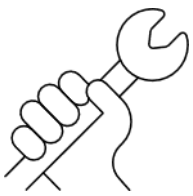
Not all participating participants were familiar with the compostable label. Some mentioned seeing it for the first time. As with the Bio-based label participants were confused about the implications of the presence of the label. The first issue that comes up revolves around the concept of composting. Many were unsure of this concept and tended to mix it up with biodegradability or bio-based. The second issue revolves around how to dispose of such FCMs. Since domestic compost bags tend to have a clear list of what is acceptable, and FCMs are not part of that list participants find it unclear what to do with their compostable FCM and might feel as if an opportunity has been missed when disposing of it in the general waste bin. As a result participants wonder whether they can simply throw this out into nature.

> *“And how does it decompose? R3: I don't believe in bioplastic. Plastic is plastic. R7: Because bioplastic gets decomposed, but you have to use the right chemicals for that. And it will decompose then.”*
>
> *Poland*

> *“And then also, ? are compostable, but they have to be subjected, so they degrade. That’s interesting isn’t it, you can’t just stick it in the old compost bin. Yes, I think that’s quite misleading as well. People could be like, oh I’ll just put that in my compost bin, but actually that doesn’t fit there.”*
>
> *Ireland*

→ In general participants understood the labels which have a clear action focus (clear call to action) better than those that serve a more informative role. Participants displayed a clearer understanding when the label indicates what they can or cannot do. On the other hand, the labels which simply provide information (e.g. 30% bio-based or the numbers inside the recyclable label) tend to give rise to questions and make participants uncertain about the usage of the material or how to dispose of it. While participants were generally interested in knowing more about FCMs, they demonstrated less interest in an informative statement while handling FCMs.

→ In the label creation workshop a frequently mentioned concern was information overload and in reaction participants were keen on creating labels that were as simple as possible. This goes to show that informative statements might not have their place on FCMs and that labels should be limited to the level of actions. Therefore, labels should focus on indicating what can or cannot be done with the FCM. No specific pattern emerged in terms of preference between being told what not to do versus what to do. Some participants preferred one while others preferred the other.



> *The exceptions would be better because you would assume there would be less of them. Yes. It could be too much information, just one or two - not suitable for microwave or don't put acidic foods in it.*
>
> *Ireland*

> *Ideally you would say, not suitable for, the example you have there, freeze, thaw, heat up, cool down, freeze, thaw again. But you can't put that on a label. So you have to keep it simple or people won't pay any attention to it. They might not pay any attention to it anyway, but keep it simple, is the obvious.*
>
> *Ireland*

5.3.1 Information sources

Only a few participants mentioned doing their own research online about food contact materials. This is in line with the finding mentioned earlier which shows that participants tend to be rather indifferent about FCM usage. Only the "health protector" archetype is relatively well informed about FCM related risks. The other archetypes either do not spontaneously care much about information related to FCMs (unassuming consumer) or they are primarily concerned about reducing FCMs and using materials such as paper or glass to maximise recycling. Therefore, only the "health protector" profiles are likely to search for information on how to handle FCMs.

The vast majority of participants referred to past experience as the main source of their knowledge about FCMs. They considered some main items as general knowledge (e.g., recycling or reuse of glass, potential food contamination from wooden utensils). Indeed, participants have their own intuitive sense of what is good or bad practice regarding the use of food contact materials. This intuition seems to be mostly based on knowledge passed on by their family or on their past experience. An example that came up the most frequently is the fact that when participants microwave plastic to heat food and the material becomes softer, they believe that this is a bad sign and will not repeat it. Most will conclude that this alters the integrity of the FCM and risks contaminating the food. Although it must be mentioned that while some participants mentioned this, they nevertheless keep doing it afterwards. Overall, participants tend to rely on their senses and judge that when a food contact material changes physically (colour, consistence, scratching, etc.) this is potentially problematic.

Another source of information is attention-grabbing news. Indeed, several participants highlighted examples of scandals or news coverage about food contact materials, food contamination or FCM pollution. Such news coverage brings food contact materials to the forefront and helps participants decide on their own "do's and don'ts". This may be based on their own values (e.g. sustainability) or their fears of contamination or health worries. The deep interest of some participants in microplastics is a clear example of this. Throughout the discussions microplastics came up several times and were the main issue in several countries.

Participants also mentioned getting information from knowledgeable friends or, on the other hand, from documentaries or the media.

As noted above participants tend to have clear views on what they regard as potentially harmful or not harmful, sustainable or not, when it comes to FCMs and their use. However, they are often unable to explain their point of view. They tend to post-rationalise choices they have already made and value convenience above many alternatives to the use of FCMs. Often participants mention their personal rules for using or disposing of FCMs, without being able to give a reason why one action might be good or bad or better than another. Where an explanation was provided, their reasoning suggested that it was not factually based, but rather seemingly anecdotal.

→ Overall, the topic of FCM is quite meaningful to participants as it is something they encounter everyday but do not often talk about nor get scientific information about. While interest varies between safety and sustainability participants tend to have an opinion about the subject. However,

the workshops of this research revealed that the subject is at first ignored and does not foster much interest. However, once they had been given additional information participants became increasingly interested.

- → The information that fostered interest in most countries usually related to safety. Once an FCM or FCM related behaviour is framed as harmful for human health, participants tend to ask for more details in terms of context, time, food types, etc.
- → The second topic that encouraged participants to think about their behaviour is sustainability or harm to the environment. As mentioned earlier, participants from Germany and Finland (often Ireland as well) were very keen on learning more about this topic following exposure to new information.

> *R1: Me too. But since I have no expertise, it is an intuitive choice. (I am not an expert) and I don't think many people really know.*
>
> *Finland*

> *Instead of being compostable or bio-based, it should just be this. This can go in this bin.*
>
> *Ireland*

The understanding of labels and the concepts linked to the labels prove there is a need for more education on this subject. The interest of participants in learning more increases after being prompted, pointing to a general willingness to learn more. There are clear gaps in knowledge on this topic that rendered some discussions tedious. Therefore, there is a clear opportunity to act to better and further inform participants on FCMs through awareness-raising.

5.3.2 Information needs

Section three demonstrated clearly, based on behaviours, that participants lack knowledge on how to use different FCMs, but more importantly that this can have harmful impacts on both the environment and the health of participants. This study reveals that there are pieces of information that participants would like to have to be able to avoid misusing FCMs. Below is the current list of items that participants have specifically mentioned about which they would like more information. It is to be noted that this is a list produced by the participants and it does not reflect what could be good practice regarding information sharing about FCMs.

Participants' information needs

Items related to everyday usage:

- → Number of times an item can be reused: a clear indication as to how many times FCMs can be reused.
- → Safe to reheat.
- → Expiration dates of FCM: how long kitchen utensils last (cutting boards for instance).
- → Whether an FCM can be put into the dishwasher.
- → Temperature: significant temperature swings, from freezing to warming up for example.
- → What bin to use to dispose of the FCM?

Overall knowledge:

- → How many years an FCM takes to decompose.
- → Differences in things that are bio-degradable.
- → Length of use of materials: durability of the FCM. For how long it can be used?
- → What happens if the FCM is used improperly? How will an improper use of an FCM affect one's health, food taste, or quality of the FCM? What happens if a label's contents are disregarded for example?
- → All materials contained in the FCM. Participants have mentioned wanting to know the exact composition of their FCMs. They would like to see a list of ingredients as they have for their food.

> *But what would help you in terms of information, or in terms of, to better navigate among these concerns that we have here? - For example, we are not told what happens if these are not observed, we do not know what happens, what effect it has on us.*
>
> *Romania*

5.4 The ways in which participants seek information- and their preferences regarding channels and means through which information should be provided

Part of the co-creation activity consisted of deciding in which format information should be communicated. This led to discussions about the types of support or means and channels to convey information that goes beyond a label.

Participants were open to a range of potential sources for information dissemination. In fact, to get access to information about FCMs and their proper usage or disposal, participants actively mentioned five different sources often link to ideas.

→ Schools/education system: a recurring theme in this discussion was youth learning, since more senior participants were convinced that such knowledge and habits should be developed at a young age so that they become second nature. Accordingly, many participants recommended using schools to pass on this information, as is often currently the case with sustainability. However, although this did not come up directly in the workshops, it should also be noted that schools are often seen as "vehicle" for awareness-raising campaigns which results in an overload of requirements and "asks" on teachers that go well beyond the curricula that they need to cover with their classrooms. Furthermore, young participants are often not the ones making choices about FCMs and therefore it is questionable whether this is the right age for raising awareness and education on this topic.

→ Media: participants were open to awareness-raising in the form of campaigns. They also mentioned several times things they had read or heard online for example. In a more concrete manner one participant raised the idea of having a practical and informative tool around the house to carry the information needed. The idea was to have a magnet with information directly linked to the usage of different FCMs.

→ On the FCM itself: most participants welcomed the idea of having more information directly on the FCM and had ideas on how to enhance the quality of the information displayed (see following section). This goes beyond adding more labels or enhancing the current labels. For example, participants suggested different colouring of plastic to indicate a specific usage allowed.

→ Online: most participants were open to going online to find information regarding FCM usages. However, some participants complained that it is very hard to find information, as it tends to be scattered across different sources. Participants were keen on having all the information in one place. Another aspect of this is trust; participants have varying degrees of trust in manufacturers and tend not to know to which institution they can turn in order to obtain reliable information.

→ Manufacturers and sellers: participants also suggested that more needs to be done by manufacturers before the FCM is put on the market to facilitate both recycling and safe usage. For example, having more explanations on their packaging or using more colours to depict the composition of FCMs sold. Another idea involves re-sellers of products such as supermarkets, with the idea of having more information inside stores about what participants are purchasing. For example, having leaflets inside supermarkets containing information on FCM usage. It was also noted that supermarkets could also sell or display their products per FCM types to a greater extent. For example, this is already the case with canned goods or bulk products which tend to be in the same part of the store.

> *R10: These things are not communicated to us. We don't get educated, people don't realise it. They just take whatever packaging they want. They use it, they have no awareness. For instance, I came to this discussion here and I've found out things I didn't know before*

> *think we should be informed through the media, because, I'm telling you that nobody reads, until 2 days ago I never read what it says on this bag, I had no idea what it says on that, nor on the box, I very rarely look. The first thing I look at when I buy, at the shelf life, you have that yogurt container, it doesn't say anything about, it just shows something small about how to throw it away, I don't know*

> *No I don't think because like for instance myself, we had health problems in our family and I wasn't finding any answers, I had to look and I did find the answers that I needed but I mean it's not there for everyone. Because not everyone has the will and ability to look for it, you know. So I think it's the government and has to be spoon fed as well.*

> *But what would help you in terms of information, or in terms of, to better navigate among these concerns that we have here? - For example, we are not told what happens if these are not observed, we do not know what happens, what effect it has on us. Romania*

5.5 Information solutions: ideas for labels

The last workshop activity focused on co-creating a label and shed light on some key aspects that participants want to find in their labels.

There was no specific framework provided to participants regarding the type of materials on which the label should feature. However, based on the ideas proposed it seems that participants were more concerned about food contact materials in which food is sold and which could be reused for other purposes (packaging). This is the case, for example, with various plastic containers in which food can be purchased, but also single-use materials which could also be purchased for household use. There seemed to be considerably less focus on cooking tools or tools used to consume food and other utensils that participants buy with a specific purpose in mind. For example, food storage containers designed for this purpose were expected to be suitable for various forms of storage. Participants seem to accept that the aesthetic aspect is important at the point of purchase and therefore a label featured on the material is seen as less suitable. Other forms of communication appear to be needed to raise awareness about the handling of scratched cooking materials or the heating of plastic food storage materials designed for microwaves.

Participants' needs regarding labels

First, some key characteristics were mentioned about labels in general and how they should be created. There is overwhelming support for the idea that labels should be **simple**. Indeed, participants find some of the current labels too complicated (as demonstrated by their lack of knowledge presented above). This is also a conclusion they emerged when participants were asked to create their own labels as they tried to incorporate several ideas into one label.

In terms of the preferred position of labels, participants would prefer to have the **label on top of the FCM** in a highly visible position.

Participants mentioned the presence of **text accompanying the label**, but without any unanimity, since while some believe that it is necessary, others consider that it is distracting and would overload the FCMs even more. Language and font were also mentioned indicating that any text should be in a clear language with an appropriate font. The language should not include technical terms.

Participants believe that it is very important to have the **source** of the label present on the FCM to ensure its reliability (see section on trust below). Additionally, participants emphasised the need for a long-term labelling approach and voiced their concerns about labels changing over time, as has happened with energy efficiency labels. This is a concern because participants want to ensure that participants remember the labels. **Expiration dates** were also mentioned as important, since participants pointed out that although the food contained in the FCM tends to have an expiration date that is not the case for the FCM.

The ideas and concepts of labels and systems that were generated by the label creation workshop clearly represent the different information needs mentioned above. The ideas and concepts can be divided into two categories. Those that are aimed at stimulating **safer usage of FCMs** and those that are meant to **instil or support pro-environmental behaviours.**

Safer use of FCM:

- → A colour system that would indicate how participants should behave with the FCM. For example, blue could mean that it is safe to be used at cold temperatures.
- → A grading system that indicates the potential harm that an FCM could cause. Using a scale, the grading label would indicate the level at which the material composing the FCM might be harmful for users.
- → A label that clearly shows the FCM should only be used once (single-use). Participants devised a label composed of the number “two” crossed off suggesting it should not be used twice or more. Another came up with a check mark accompanied by an EU symbol (see the pictures of workshop labels below).
- → A label that highlights that there is a need to read the instructions when using an FCM that might be harmful.
- → Plastic containers that change colour when they become harmful. For example, adding a colouring component that turns yellow if used at a temperature that exceeds the safety limit of the FCM.
- → Tobacco style warning messages. One group raised the idea of having very large warning signs to indicate the potential harm of an FCM.
- → List of components, similar to an ingredient list[10]

Promoting pro-environmental behaviours:

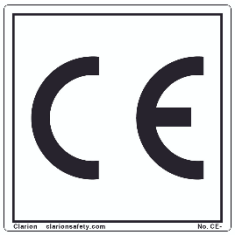
- → A grading system indicating the quality of the FCM in terms of its environmental impact. Similarly, to the Nutri-score[11] system that indicates a measure of food quality, this grading system would measure the quality of the FCM in terms of its environmental impact. This would allow participants to know before purchase whether their food is packaged in a material that is harmful to the environment.
- → A colour system that enables users to know where to dispose of the FCM. Colours would be matched with the colour of the waste bags. For example, compostable FCMs would be brown coloured to match the colour of the organic waste bag. This idea could be translated into a small, coloured circle or even go as far as colouring the whole FCM, for those made of plastic for example.

[10] Following exposure to information about the harmful potential of certain materials participants were keen on full disclosure of the FCM components. It must be noted however that their scientific knowledge of materials was quite limited. Hence the list of FCM ingredients might be more useful to force manufacturers not to include harmful components in their products rather than as an indication for consumers.

[11] https://www.iarc.who.int/wp-content/uploads/2021/09/IARC_Evidence_Summary_Brief_2.pdf

5.5.1 Instilling trust

In order to make the labels or labelling systems credible and trustworthy participants were mostly in agreement on using the EU as a source of information. This is a very important aspect for participants as concerns of trust arose on numerous occasions. In fact, a lack of trust in manufacturers was explicitly present in most countries. Participants consider that manufacturers only care about complying with the minimum legal requirements and do not care enough about the safety of their participants. On the same topic, participants expressed safety concerns about the lack of product testing by manufacturers. For example, they mentioned non-stick pans and different types of plastics that are on the market and could potentially have serious side-effects that are not disclosed.



Concerns were also expressed about imported products. In some Member States participants tend to have less trust in products that are not manufactured in their own country. More specifically, products from China are generally seen as potentially unsafe. One participant also raised the issue of alternative CE labels. The claim was that the "CE" label (conformity with European health, safety, and environmental protection standards) is replicated by another CE label that supposedly means "China export".

In Finland and Germany however, there is a strong sense of trust in the safety of all products that are sold in the country as participants consider themselves protected by their country's legislation. In some Southern European countries on the other hand participants were much more distrustful even if there is legislation in place, as they have no certainty that it has been complied with by manufacturers. They believe that there is a need to reinforce the trust in manufacturers and trust in science in general.

Participants' proposals for solutions to instill trust in FCM labels

- → Participants generally agree that the EU should be the entity backing up labels, as they believe that this would increase credibility and legitimacy.
- → Adding the flag of the EU close to the labels.
- → Presence of a certification number like the ISO one.
- → Displaying a reference to a legal standard.
- → Clustering FCM labels together to tell them apart from other labels.

5.5.2 How to make labels inclusive

Spontaneously, participants seem to see the inclusiveness of labels as an important aspect and on several instances, participants mentioned different profiles of participants and their potential inability to make use of labels or follow instructions. Elderly persons were mentioned with regard to issues they might face using QR codes or going online to find information. This group of participants was also said to be at risk of having trouble seeing some of the labels or understanding and adopting newer rules related to FCMs. Visually impaired participants might also have difficulties reading the labels without adequate tools. Colour blindness was also mentioned as colouring systems might be useless for persons with this deficiency. Lastly, language was recognised as being a potential issue in the case of instructions accompanying labels.

This led participants to consider many visual aspects of labels and FCMs. For instance, it was mentioned that QR codes should include only additional information that it might not be possible to fit on the packaging. The information on the QR codes should not be crucial to the safe utilisation of the FCM. In terms of language, some participants suggested using English for everything, as is often already done for other types of informative statements on FCMs. However, it is clear that not all participants understand English and therefore participants consider that it is important for locally sold products to also have these instructions in the local language. It was mentioned that this could also be helpful for educational purposes.

On more visual aspects participants consider that it would be beneficial to envisage clear colour systems that use colours that everyone can discern. The standardisation of colours between countries and regions was unsurprisingly mentioned not only to help those who travel, but also for manufacturers to be able to give more precise instructions about recycling or FCM usage. Labels also need to be revisited as many are currently embossed and do not stand out from the rest of the packaging. It was suggested that colours should be used and that embossed labels should be made larger to help visually impaired people.

The idea of having labels placed on the same part of the FCM was raised to help users locate labels faster. When FCMs are packaged with extra material is it also important to have labels there although this might create confusion as to which part of the FCM the instructions should be applied.

Participants' considerations to make FCM labels more inclusive

- → Consider visually impaired consumers
- → Colour blindness should be taken into account when using colouring systems
- → Language choice
- → Standardisation of colouring systems across the EU Member States
- → Standardisation of labels' location on the FCM

The images below illustrate the suggestions made by participants.

Figure 5.1 Label creation Germany 1

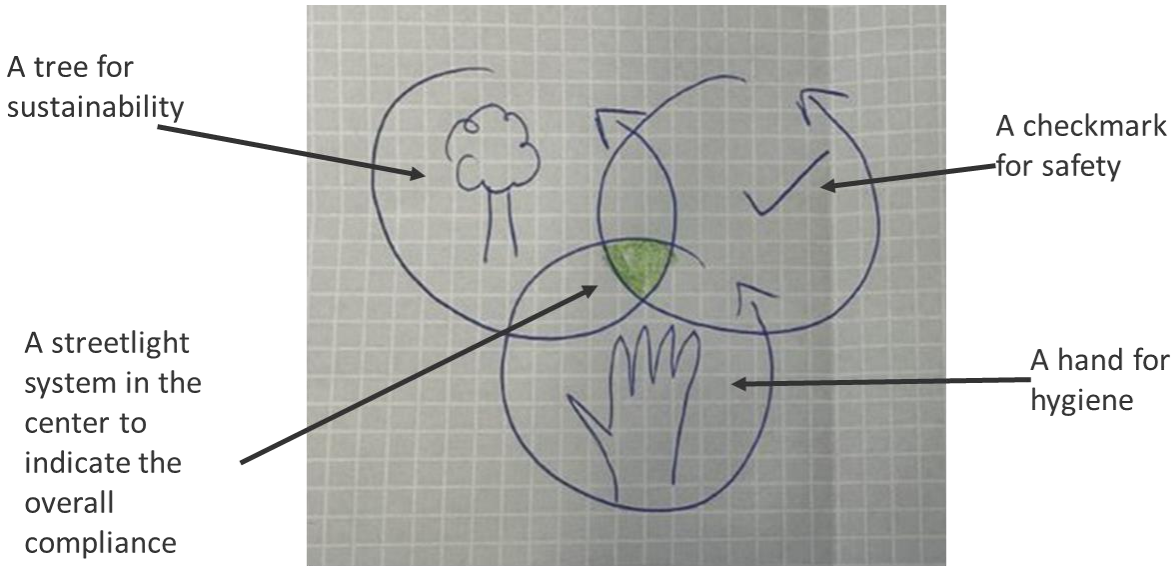


Figure 5.2 Label creation Ireland 1

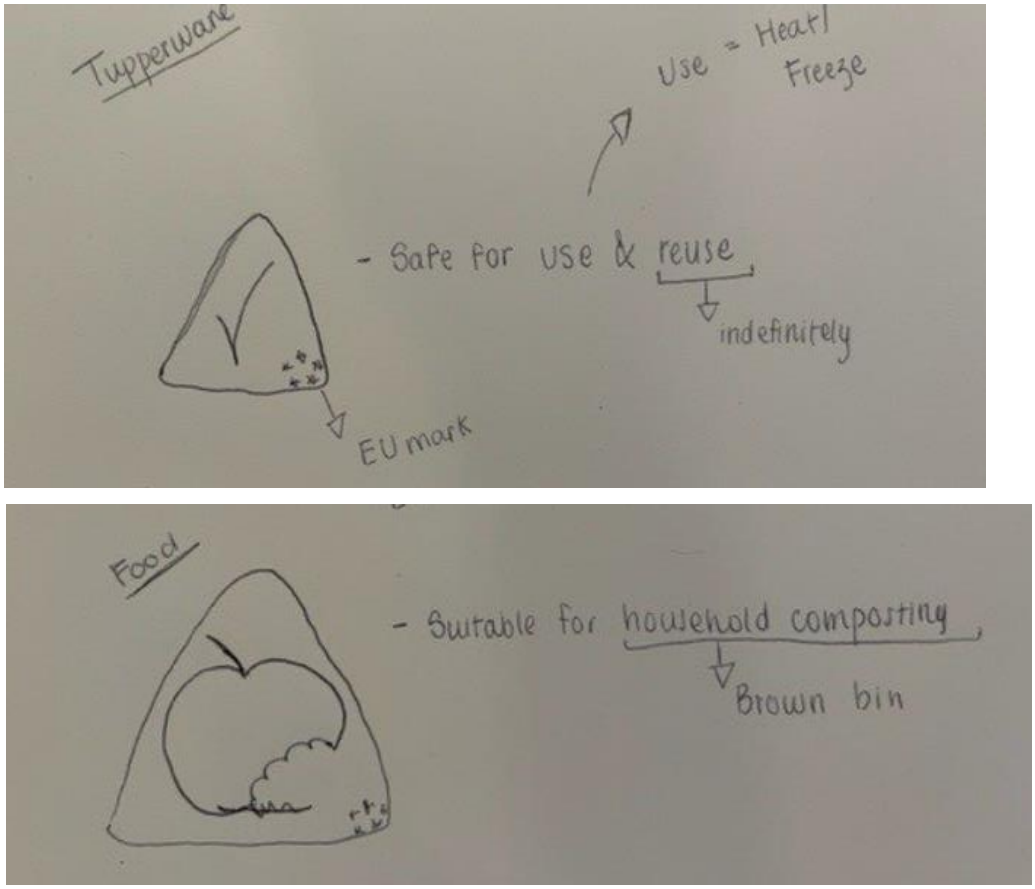


Figure 5.3 Label creation Ireland 2

Stamps on the side of the FCM to depict different indications related to usage of the FCM. For example green indicates disposability, red for heating.

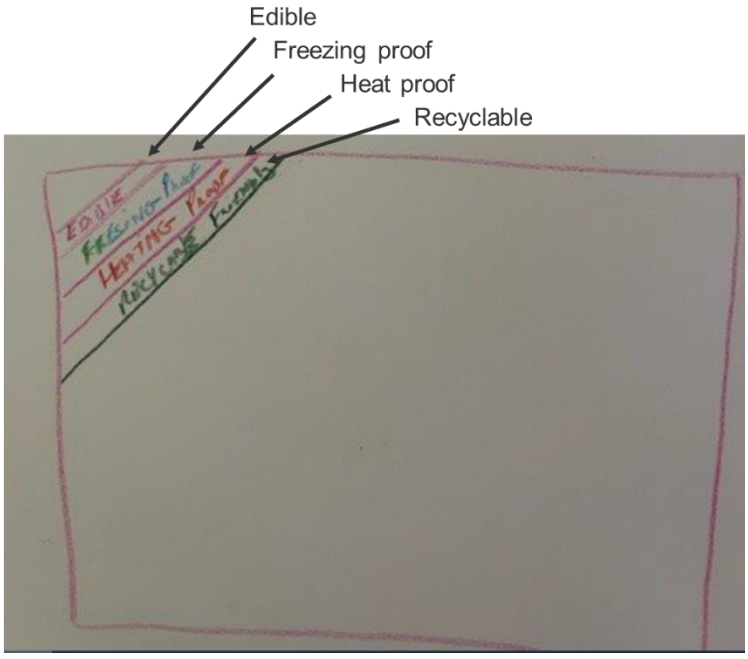


Figure 5.4 Label creation Ireland 3

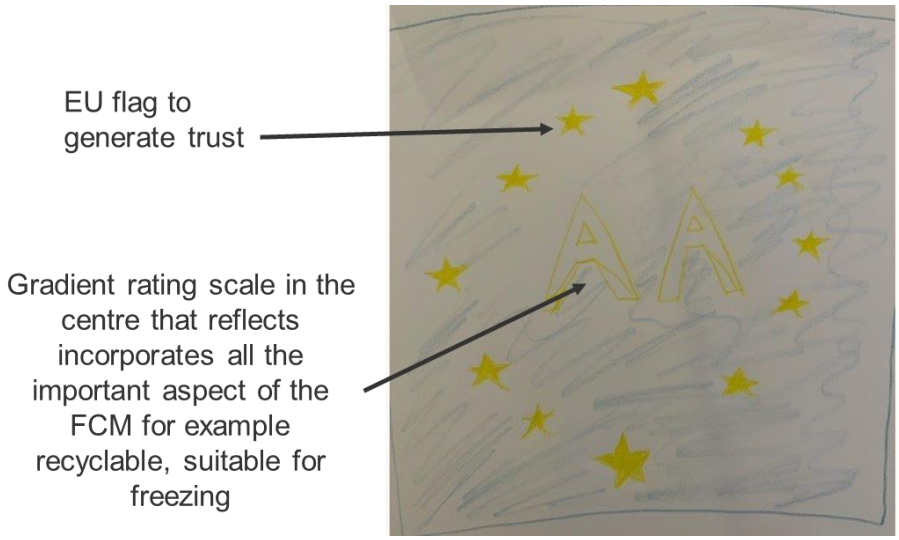


Figure 5.5 Label creation Germany 2

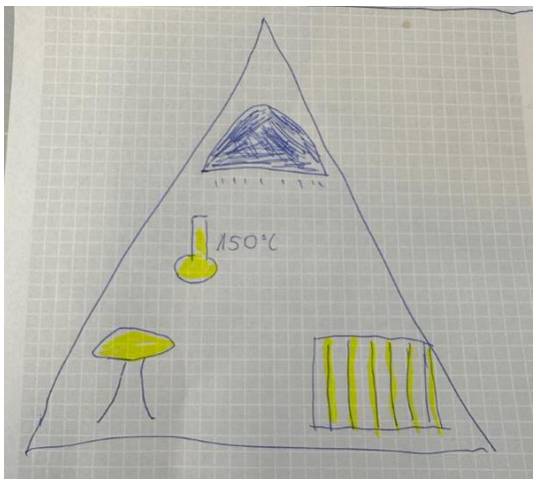


Figure 5.6 Label creation Germany 3

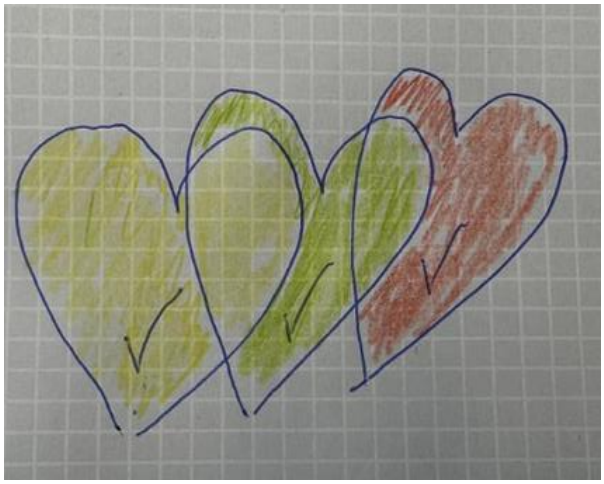


Figure 5.7 Label creation France 1

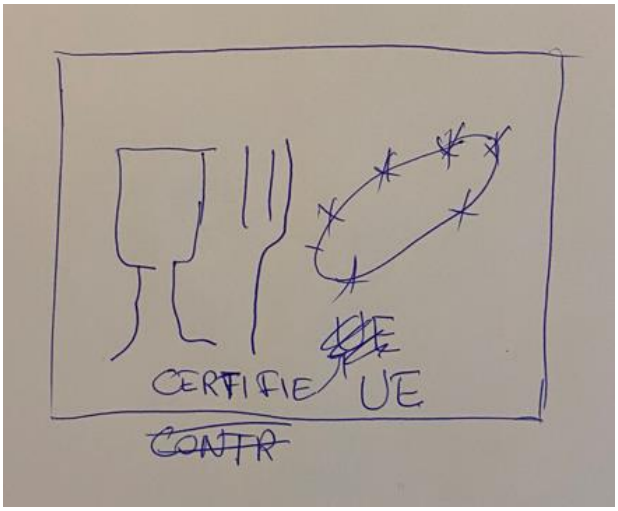
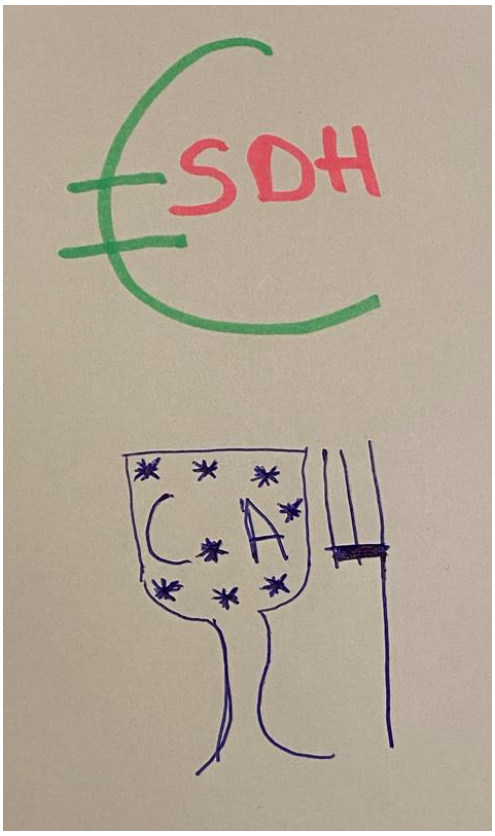


Figure 5.8 Label creation France 2



6. Conclusions and recommendations

6.1 Overarching conclusions

1. Food contact materials are not a topic that most workshop participants think about spontaneously. When prompted about what they consider as food contact materials, they will name food containers, utensils, wrapping materials or food packaging. More rarely will they think about cooking tools. Related to this apparent indifference, they have limited knowledge about FCMs. However, there were different profiles of participants in the workshops. Three archetypes of people emerged from the discussions each being driven by different concerns and considerations: "ecological defender", "unassuming consumer" and "health protector".

Participants mostly think of food contact materials as materials that either store food (whether at the point of purchase or in the household) or that are used to prepare food and, to a lesser extent, those that are used to consume food. Overall, the topic of food contact materials (including food packaging, non-stick pans, Tupperware, and cutting boards) is not one to which most participants had given significant consideration prior to the workshops. However, their level of awareness of the FCM related issues varied according to their main concerns. This in turn affects their choice of FCMs and attitudes towards them. The study identified three main archetypes of persons:

- The ecological defenders are a group of people who make a conscious effort to choose what they believe are sustainable options when it comes to FCMs.
- The unassuming consumers are primarily driven by convenience, availability and the cost of FCMs or food products.
- The health protectors are the most knowledgeable about potential risks related to FCMs. They are also most likely to choose options that prioritise safety, in particular when it comes to avoiding any leaching of product materials into food.

Depending on the archetype, participants will be driven by different factors when choosing FCMs and will have slightly different information needs. For example, while the health protector cluster is interested in information about FCM composition, the ecological defender is more interested in understanding the sustainability not only of the product but also of its production.

2. Responsibility over potential risks stemming from food contact materials should be distributed as follows according to participants:
   1) It is the role of manufacturers and authorities to avoid any major risks and threats to health
   2) They accept that their own judgement and individual responsibility are activated when it comes to bulk purchases or purchases where there is potential risk of cross-contamination of different food products with allergens
   3) When it comes to reuse of FCMs in the household they understand that it is their responsibility to ensure correct use and thus avoid minor risks. But as noted above major health risks related to reuse should in their eyes be tackled by the manufactures and authorities.

The area of food contact materials legislation necessitates the management of risks as there is no such thing as a no-risk situation. Participants in the workshops assumed the following division of responsibilities with regard to the risks incurred:

1) They consider that any materials that could represent serious harm should not be in circulation. In their eyes it is the role of manufacturers and public authorities to avoid major threats to health. This should also reflect the fact that participants will use FCMs in unintended ways (such as heating or freezing).
2) They accept that not all risks can be avoided and that there may be hygiene related risks in case of, for example, buying from bulk. For these risks they are willing to be the ones bearing the risk at the point of purchase, provided that they have guarantees that manufacturers and distributors manage the risks up until the point of sale.
3) Regarding the use and reuse of FCMs in the home, participants accept that they are the ones responsible for ensuring that they are not used in a way that might be harmful. This does not mean that they would not take some risks regarding using FCMs. On the contrary many of them will take

some risks, which they accept because they assume that these risks are only minor in relation to their health.

3. There is ample room to improve citizens' knowledge and understanding around the issues of food contact material's safety and sustainability. People have clear information gaps and current labels are ill-known or misunderstood.

Overall, participants in the workshops had a number of beliefs about FCMs, but relatively little accurate knowledge. Participants are influenced by their peers and their families regarding the use and reuse of FCMs. Some participants had accurate information about some of the uses/reuses of certain specific FCMs, but most participants were aware of only a small number of risks. The same applies to the sustainability of FCMs. For example, participants generally tend to see plastics as a non-sustainable option, while they see other non-synthetic materials, such as glass, metal and ceramics, as sustainable. Often this is based on a rapid judgement rather than on an accurate understanding of these materials and their production.

The existing materials which were used to stimulate discussions about safety and hygiene included a range of existing labels. Participants were familiar with these labels, but most of them did not understand accurately most of the symbols. The labels were often incorrectly understood, or participants had only vague idea of what they meant.

4. Knowledge and understanding do not directly translate into behaviours. Even people who are aware that certain practices are potentially harmful admit that they occasionally use FCMs in that way (notably for heating food).

4. Knowledge and understanding do not directly translate into behaviours. Even people who are aware that certain practices are potentially harmful admit that they occasionally use FCMs in that way (notably for heating food). Participants in the workshops reuse FCMs if these are convenient to reuse independent of their understanding of risks or their knowledge.

There is a need for education and information activities that focus on action and behaviours rather than on simply informing about the fact that a material is recyclable or that it is authorised as food contact materials (as the current fork and glass label).

The workshop participants admitted to a number of risky practices about which they were prompted, including activities such as heating plastics that were not designed to be heated in a microwave, or reusing scratched non-stick pans. Even participants who knew this represented a risk indicated that they still sometimes used such pans for reasons of convenience or to save money on not buying new ones (in the case of pans).

The fact that participants knew that there was a risk in reusing FCMs in a certain way did not translate directly into non-risky behaviours. Participants will reuse materials even if they are not suitable for a given reuse if it is easy to reuse them. Notably they will heat, freeze or store food in materials that can be reused as containers.

5. There are multiple drivers affecting people's choice of FCMs of which the most powerful ones appear to be: convenience, social norms and past experience, as well as economic considerations and costs.

The main reasons why participants choose to use and reuse FCMs are the following:

- Convenience and availability at the time when the person needs the given material. Limited hassle when it comes to both the time of shopping (grab and go, wide availability in stores) or at home (easy to store, easy to clean, etc.).
- Costs – participants have a strong preference for cheaper options. Similarly, they do not like to throw away single-use FCMs (such as plastic containers not made for storing or heating food) as they consider this would be wasteful. Subsequently they reuse these materials
- Social norms and habits passed on in families: participants tend to repeat the same behaviours regarding FCMs as adopted in their household when growing up or those of their peers.

Most participants do not spontaneously choose FCMs specifically for reasons related to safety. In other words, their choice of purchase is driven by the food itself rather than the food contact material in which it is packaged. Similarly, when choosing utensils for use at home safety is a clear concern only for participants

who fall into the “health protector” archetype. Participants who fall into the “ecological defender” archetype on the other hand will choose no FCMs (products bought from bulk) or will opt for recyclable materials (such as glass or cardboard) if these are available easily.

6. People tend to believe that FCMs are safe because of their stability, non-porosity or because of their robustness. Accordingly, they tend to trust more materials that do not change appearance such as glass or ceramics and trust less materials that do change aspect such as plastic, metal or even cardboard.

The characteristics of FCMs that participants associate with safety are:

- Stability: not changing colour (for example not absorbing colour from food) or appearance (for example softening when being heated). FCMs that change appearance are associated with the risk of leaching into food as participants see the physical change in them.
- Non-porosity is seen as hygienic and participants will regard non-porous FCMs as safer for that reason.
- Robustness means that the FCM does not break easily and therefore it is difficult for it to harm the person or to break into pieces in the food.

These are intuitive signs of safety for participants, which they substitute for accurate knowledge when making choices.

7. In terms of sustainability, FCMs raise many question marks. People have limited understanding of FCMs that are compostable or bio-based. They also believe that clarity over recyclability needs to be enhanced. Consumers also worry about the sustainability of the FCM production. People do have a preference for sustainable options provided these are not less convenient or not more costly than other mainstream options.

The area of the sustainability of FCMs is complicated for many participants and they consider that the following aspects lack clarity:

- Recycling and being recycled: there are still many knowledge gaps regarding how some FCMs should be recycled. Participants also worry about recycled FCMs. They consider the process of recycling uses many chemical substances which they fear can leach into food.
- Composting: participants are unclear how and where they can dispose of compostable FCMs, in particular those that are compostable only industrially, and hence are not collected routinely.
- FCM composition: participants do not understand what bio-based materials are and generally worry about the sustainability of any synthetically produced materials.
- FCM manufacturing: when thinking about sustainability participants consider not only the FCM itself but also the manufacturing process. They expect sustainable FCMs to also be the result of a manufacturing process that is itself sustainable. They however admit to have very limited knowledge about this.

8. People expect dangerous/ potentially seriously harmful products to be out of circulation as noted above. Therefore the choices they make between sustainability and safety/ hygiene are mostly about: price, convenience/ availability about values.

Participants strongly believe, as noted earlier, that products that are dangerous or potentially dangerous, should not be in circulation. They expect the rules around this to be harmonised across the EU. They also expect imported products to have to comply with the same standards. Therefore, they do not want to be making choices themselves about eliminating potentially harmful FCMs. They consider that this responsibility should lie with the manufacturers and authorities.

The trade-offs that they are willing to make themselves are between sustainability and hygiene for example. In this regard they are willing to take certain risks to make more sustainable choices while considering their own individual situation (e.g. allergies).

Overall, however, their choices are in general not driven by risk avoidance but rather by price, convenience, availability or values when it comes to importance of sustainability.

There is a clear need and ample opportunities to boost the level of understanding citizens have of food contact materials and their safety and sustainability.

Overall, the study shows that there is a strong opportunity for more and better communication about FCMs. Participants in the workshops demonstrated limited knowledge and understanding of the risks involved in (re-)using different types of FCMs and they also have mixed levels of understanding of which FCMs are sustainable and how to dispose of them. While participants do not have sufficient concerns to search for information on their own initiative, once they are prompted with more information about FCMs they are interested in the topic and want to know more about it. They mostly recognise that both the safety and sustainability of FCMs are issues of which they should be aware and which require them to take action.

6.2 Main considerations for improving the current EU rules

The study recommendations focus on issues regarding communications and labelling as these are core areas concerning which workshop participants were asked to formulate suggestions.

Review the current labelling to improve the understanding of intended messages. Harmonise labels across the EU. Include a wider breadth of information on the labels.

The labels currently used are misunderstood and some are barely known (for example “compostable”). There is an opportunity to:

- improve the information provided by making labels better known and understood;
- simplify the labelling system by bringing different strata of information into one label;
- ensure harmonisation across the EU, since participants clearly expect the labelling system to be common across the EU countries.

Accompany labels with other information campaigns (posters, flyers, advertising spots). People expect information about: contact with food; heating/ freezing; recycling; composition. This would necessitate combining multiple messages in a single label or indication.

Participants expect the labels to contain information relating to both:

- safety: contact with food (suitable or not), heating/ freezing, storing;
- sustainability: recycling and how to dispose of compostable FCMs, as well as FCM composition.

This means that there are potentially multiple layers of information to include on labels. Such labels will subsequently require additional information materials to support a clear understanding of information displayed on the labels. To be intuitively comprehensible the labels will have to be accompanied by wide-reaching information campaigns with touch points that are “just in time” (in store or in the kitchen for example).

Prioritise labels that focus on action: do’s or don’ts.

Participants recall better and understand more easily labels that focus information about what should or should not be done. In other words there is a preference for labels that concern the behaviour to be adopted rather than labels that simply provide information (e.g. do not heat label versus 30% biobased). It is unclear to participants what the purely informative labels imply for them and their use of the materials.

Consider layering of information as well as colour coding accompanied with verbal information (warning messages)

Participants suggested a number of techniques for conveying information on labels, including layering information about multiple topics, using colour coding to signal “do’s and don’ts” or also using verbal messages. Verbal messages should be not only in English but also in the local language. The accessibility of

the information provided on the labels is also a key concern for participants in this research. To this end embossed labels for example are considered as unsuitable as they are very difficult to read.

Enhance trust by specifying that the label is guaranteed by a trusted body (for example the EU).

There is clearly scoped to enhance the trust of participants in FCM labels. This could be done by more clearly conveying the information on who is responsible for the message on the label. Some participants wanted this to be specified on the label itself. However, it could also be part of the accompanying communication campaigns rather than on the label itself on order to avoid overburdening the label.

Test the understanding of messages on proposed labels

The study shows that several labels currently in use created misunderstandings. For example, the fork and glass FCM label was mistaken for the fragile label. These types of misunderstandings can be avoided by testing in practice what participants associate with a given proposed label and how they understand the message.

Focus information provision and campaigns on choices that are relevant for consumers: sustainability as well as safe (re-)use of materials. Other measures need to ensure potentially dangerous products are not in circulation.

Finally, there is a clear expectation that labels, and information campaigns should focus on those areas where participants' choices matter. As explained in the conclusions, participants do not see the avoidance of major health dangers or risks linked to the potential leaching of substances into food to be their responsibility. They consider that potentially dangerous products should not be in circulation – even in cases where the reuse is unintended by the manufacturer (e.g. heating ice cream packaging in a microwave after the intended use of the FCM). Legislation regarding what FCMs can be put on the market should assume that participants do reuse FCMs at home in ways that were not originally intended (storing, heating, freezing). Therefore, if there is a risk with an FCM when used in such a way it should not be left to the choice of the consumer to avoid the risk. The manufacturers and authorities should ensure that such FCMs are not available on the market.

ANNEXES

Annex 1 – Screener

	Project: Food Contact Materials (FCMs), DG Sante **RECRUITMENT QUESTIONNAIRE**
Date: 28/06/2022 Recruiter: _____	**Job number**: 235220352 **Project Name**: DG Sante Food Contact Material Focus Groups **Type**: 8 focus groups (one per country) + a pilot group (Malta) **Methodology of the exercise**: At home diary (2 days prior to the group) and in-person discussion **Number of participants per group**: 10 in each group (12 participants to be invited per group, to provide a back-up) **Target audience**: • **Age:** 18+ y.o., with the requirement of the youth (18-25 y.o.) and the elderly (65+ y.o.) to be represented in each group • **Gender:** An even spread between men and women/non-binary individuals (if any). • **Relatedness to the issues of FCMs' safety, hygiene and sustainability:** o a fair mix across low, medium and high levels of awareness/ concern with regards to the following four aspects ▪ Awareness of the fact that traces of materials that come into contact with food (, e.g., plastic or aluminium in packaging) ▪ Concerns over food security when buying food (e.g., freshness and quality ensured by packaging) ▪ Considerations about minimizing packaging ▪ Concerns about the use of pesticides o representatives of those with food allergies and other health conditions associated with enhanced care when it comes to food choices, including at least 1 pregnant or breastfeeding woman per group o a fair mix of different food behaviours, including • **Education, Financial & Employment status:** Fair spread between different education levels, as well as between different financial and employment statuses. • **Household composition:** Fair spread between different household compositions. **Area**: A 50%|50% split between capital and non-capital cities. No rural areas. **Country (8):** Germany (DE), Ireland (IE), Greece (EL), Spain (ES), France (FR), Poland (PL), Romania (RO), Finland (FI) **Duration**: 180 min.

	INTRODUCTION Good ... (morning / afternoon / evening). My name is ... calling on behalf of Kantar Public. We are conducting a number of workshops with citizens for the European Commission where we will invite people to come and discuss their opinions in small groups. In preparation of this discussion, we will also ask participants to hold a short diary for two days prior to the group. There are no right or wrong views or perceptions during these discussions; we are simply interested in what you have to say. We are not selling anything. The objective of the discussion will be to help the European Commission to improve EU policy related to Food Contact Materials. Food contact materials are all materials and articles intended to come into contact with food, such as packaging and containers, kitchen equipment, cutlery etc. Your co-operation is completely voluntary and all the responses you share during the group discussion will be treated as completely confidential. The information collected will be thoroughly anonymised and all identifiable information will be removed before they are provided to our client. For more information on how we collect and use your personal data, please consult [LINK] or provide us an email so that we can send you the privacy statement. Anything you say at the meeting will be kept private. Neither the client nor third parties will know who took part in the study, although they might observe the focus group. Just to make sure we are talking to lots of different people I need to ask you a few more questions. This should only take one to two minutes. Is it OK to ask these now? (IF NOT MAKE AN APPOINTMENT TO CALL BACK) The European General Data Protection Regulation (GDPR) requires us to obtain your consent regarding the collection and use of your personal information. The personal data privacy notice we shared with you defines what personal information we can collect and how we may use it. . Do you agree with these terms and conditions?	
	- yes	- 1 => CONTINUE
	- no	- 2 => STOP INTERVIEW

NOTE RECRUITER:

Considering that some groups are segmented following one of the focus below, NOT ALL the questions are asked all the time to all participants. Please STOP INTERVIEW if for any of the following questions the person prefers not to answer the question.

Q1.a	Have you ever attended a Research group discussion or individual interview?	
	- yes	- 1 => CONTINUE TO Q1b
	- no	- 2 => CONTINUE TO Q2
	- do not know / cannot remember	- 3 => CONTINUE TO Q2
Q1.b	What was the discussion about?	

	- similar subject to this study	- 1 => STOP INTERVIEW
	- different subject	- 2 => CONTINUE
	- do not know/cannot remember	- 3 => CONTINUE

Q1.c	How long ago did you attend a Research group discussion?	
	- in the last 6 months	- 1 => STOP INTERVIEW
	- longer ago than 6 months	- 2 => CONTINUE
	- do not know / cannot remember	- 3 => CONTINUE

Q2	Are you a [Maltese / German / Irish / Greek / Spanish / French / Polish / Romanian / Finnish] permanent resident?	
	- yes	- 1 => CONTINUE
	- no	- 2 => STOP INTERVIEW

Q3 Which city/ town do you live in?

……..

INT: Open question. The participants from the capital or secondary cities can be invited, with, when possible, at least 1-2 participants from peripheral/semi-urban areas. Please do also try to have a good geographical representation for your own country (with representants from south/north and east/west regions), whenever possible.

Q4. How old are you?

Less than 18	- 1 => STOP INTERVIEW
18-25	- 2 => CONTINUE
26-35	- 3 => CONTINUE
36-45	- 4 => CONTINUE
46-64	- 5 => CONTINUE
More than 65	- 6 => CONTINUE

Refusal	- 7 => STOP INTERVIEW

INT: We aim at a fair mix of different age groups. Note that there need to be 1-3 representatives of the 18-25 age group and 1-2 representatives of the 65+ age segment.

Q5. What gender do you identify with?

- Man	- 1 => CONTINUE
- Woman	- 2 => CONTINUE
- Non-binary / Do not recognize yourself in above categories	- 3 => CONTINUE
- Refusal	- 4 => CONTINUE

INT: a 50/50 balance between male, and female / nonbinaries

Q6.a What is the highest level of education you completed?

- Below Secondary School	- 1 => CONTINUE
- Secondary school - High school	- 2 => CONTINUE
- University / Technical school degree	- 3 => CONTINUE
- Master or PhD	- 4 => CONTINUE
- Refusal	- 5 => STOP INTERVIEW

*INT: If possible, please make sure that there is an **even spread** between different education levels*

Q6.b What is your current employment status?

- Still studying	- 1 => CONTINUE
- Employed	- 2 => CONTINUE
- Job seeker	- 3 => CONTINUE
- Freelancer	- 4 => CONTINUE
- Parental leave or other type of leave	- 5 => CONTINUE

- Not working and not looking for a job	- 6 => CONTINUE

INT: please, ensure a mix of different types of employment

Q6.c What is the composition of your household?

- Single person	- 1 => CONTINUE
- Single parent with one child	- 2 => CONTINUE
- Single parent with several children or supporting one or more high-needs individual (disabled, elderly etc.)	- 3 => CONTINUE
- Couple without children	- 4 => CONTINUE
- Couple with one child	- 5 => CONTINUE
- Couple with several children or supporting one or more high-needs individual (disabled, elderly etc.)	- 6 => CONTINUE

INT: please, ensure a mix of different types of households

Q7. Are any of the following statements relevant to you personally?

(INT. READ ONE BY ONE - SEVERAL ANSWERS POSSIBLE)

INT: Please list these in a random order.

- I have food allergies	- 1 => CONTINUE
- I am preparing to run a marathon	- 2 => CONTINUE
- I am pregnant or breastfeeding	- 3 => CONTINUE
- I take vitamins or food supplements	- 4 => CONTINUE
- I have endocrinological issues	*- 5 => CONTINUE*
- I have cancer (now or in the past)	*- 6 => CONTINUE*
- I had an injury in the past 3 months	- 7 => CONTINUE
- I have insomnia	- 8 => CONTINUE
- I use bicycle more than a car	- 9 => CONTINUE
- I have special dietary conditions (vegan, gluten-free, lactose-free…)	*- 10 => CONTINUE*
- I exercise not less than 2 times a week	- 11 => CONTINUE

- None of those conditions are relevant to me	- 12 => CONTINUE

INT: All answers are ok, but note that we need to have at least one person with food allergy, at least one pregnant or breastfeeding woman, and – if possible – at least 1 person with other conditions requiring cautions approach to food consumption (i.e., endocrinological issues, cancer, specific dietary conditions)

Q8. Do you or anyone in your close family work in the following sectors?

(INT. READ ONE BY ONE - SEVERAL ANSWERS POSSIBLE)

- government institutions	- 1 => SEE NOTE BELOW
- market research	- 2 => IF YES STOP INTERVIEW
- marketing	- 3 => SEE NOTE BELOW
- the European Union	- 4 => IF YES STOP INTERVIEW
- Organisations active in the food and beverages and/or FCM sector	- 5 => IF YES STOP INTERVIEW
- Food and beverages and/or FCM industries	- 6=> IF YES STOP INTERVIEW
- NGOs / think tanks	- 7 => SEE NOTE BELOW
- none of these	- 8 => CONTINUE

INT: For government institutions, and marketing, please ask if they hold a job in support functions within the company (accounting, finance or administrative work, such as a secretary for example) and whether they work in matters close to market research, the European Union or Food Contact Materials. If they do not, STOP INTERVIEW.

INT: For NGO / think tanks, if they answer yes, please ask whether they work in matters close to the European Union or to Food Contact Materials. If yes, STOP INTERVIEW.

Q9. Overall, how would you qualify your behaviour towards food preparation and consumption?

INT: Please list these in a random order.

I mostly cook and eat home-cooked meals	*- 1 => CONTINUE*
I mostly eat home-cooked meals but I often do not prepare them myself	*- 2 => CONTINUE*

I prepare and eat a mix of home-cooked meals and food prepared outside.	*- 3 => CONTINUE*
I mostly eat food that I bought outside of my house.	*- 4 => CONTINUE*
For lunch, I mostly eat out.	- 5 => CONTINUE
For lunch, I mostly eat food prepared at home	- 6 => CONTINUE
For lunch, I mostly eat food bought at a supermarket	- 7 => CONTINUE
I tend to omit my lunches.	- 8 => CONTINUE

INT: Please note that food prepared outside of the house includes any food that was ready to eat upon being bought, including from supermarkets, restaurants (eating in or taking away) or cantines, for example.

INT: Please make sure there is an even spread of people who cook food at home and people who order food or eat outside, with at least 2 people of each category.

Q10. On a scale of 1 to 5, with one being never and five being always, how would you rate the frequency at which you think of the following topics?

INT: Please read these out in a random order.

10.1 I am concerned with potential materials that come into contact with my food, such as plastic or aluminium in packaging.

Never	- 1 => CONTINUE
Rarely	- 2 => CONTINUE
Sometimes	- 3 => CONTINUE
Often	- 4 => CONTINUE
Always	- 5 => CONTINUE

10.2 I worry about food security when buying food (e.g., freshness and quality ensured by packaging).

Never	- 1 => CONTINUE
Rarely	- 2 => CONTINUE
Sometimes	- 3 => CONTINUE
Often	- 4 => CONTINUE
Always	- 5 => CONTINUE

10.3 I think about minimizing packaging.

Never	- 1 => CONTINUE
Rarely	- 2 => CONTINUE
Sometimes	- 3 => CONTINUE
Often	- 4 => CONTINUE
Always	- 5 => CONTINUE

10.4 I am concerned about the use of pesticides.

Never	- 1 => CONTINUE
Rarely	- 2 => CONTINUE
Sometimes	- 3 => CONTINUE
Often	- 4 => CONTINUE
Always	- 5 => CONTINUE

INT: Please make sure there is an even spread of representation for each of the relevant categories.

INVITATION TO ATTEND THE FOCUS GROUP

We would like to invite you to a focus group discussion that will take place in-person.

The group will be held on <DATE>

It will start at <TIME> and last about 3 hours.

Prior to the group, we will ask you to keep a photo diary for 2 days. This implies keeping track of all your food and drink moments, noting the various types of packaging, containers, kitchenware and other FCMs you will come in contact with.

Your contribution will be rewarded with an incentive of <AMOUNT>

Would you be able to attend?

- yes	- 1 => NOTE CONTACT DETAILS
- no	- 2 => STOP INTERVIEW

(INT: NOTE CONTACT DETAILS OF RESPONDENT)

Kantar follows strictly the most up-to-date guidelines regarding protection, storage and sharing of personal data[12].

Name and surname:

Email address:

Age:

City:

I would like to thank you in advance for taking part. You will receive the link to take part in the study by email on <DATE>.

Date and time end of recruitment interview:	

[12] For any survey we conduct the fieldwork team works under the strict measures we have set up in our Kantar Data Protection Framework as well as Data Protection policies, processes and procedures. The Kantar Data Protection Framework is based on the European General Data Protection Regulation which we have adopted as the Gold Standard for Data Protection. The requirements of the Framework apply globally across all Divisions and Functions. Where local legislation differs or requires additional Data Protection measures, these are incorporated into the Framework and are complied with as appropriate.

Annex 2 – Facilitation guide

DG Sante – Food Contact Materials (FCMs)

28/10/2022

FOR MODERATORS ONLY – NOT TO BE SHARED DURING CO-CREATION WORKSHOP

CONTEXT FOR THE STUDY

Food contact materials (FCMs) are:

- all materials and articles which are intended to come into contact with food,
- those that are already in contact with food; and
- those that can reasonably be expected to come into contact with food or transfer their constituents into food under normal or foreseeable conditions of use.

FOOD CONTACT MATERIALS include food packaging, kitchenware and tableware as well as items used in professional food manufacturing, preparation, storage and distribution. No Food Contact Material is completely inert and substances may be present in final articles that result in exposure of humans consuming that food. Therefore, since 1976, EU legislation has placed basic requirements on businesses concerning the safety of Food Contact Materials and substances migrating from them with the aim of securing a high level of protection of human health and the interests of citizens, whilst ensuring the effective functioning of the internal market. The Inception Impact Assessment presenting the Revision of EU rules on Food Contact Materials highlights shortcomings with the current EU legal framework and on this basis, the European Commission has started working on the revision of the EU regulation on Food Contact Materials including an impact assessment on possible policy options and their impacts on stakeholders. An impact assessment is the analysis which needs to accompany any proposal for new or revised legal framework and which gives evidence of the expected impacts of the proposed policies and their alternatives. To inform this process, the Commission is gathering evidence and consulting all relevant stakeholders, including citizens via studies such as this one.

The aim of this research is to complement the insights and general views from the first research phase that the European Commission has undertaken. The first phase consisted of public consultation and interviews with consumer organisations, with the perspective from citizens and consumers. Specifically, the objectives of the research are to:

Gain understanding of the habits and behaviours as well as experiences of citizens with regards to Food Contact Material, particularly on the topics of safety, hygiene and sustainability;

Obtain in depth understanding of the needs, concerns and preferences of citizens with regards to Food Contact Material; particularly on the topics of safety, hygiene and sustainability;

Understand the information needs with regards to Food Contact Material: the type of information that is needed, the way it should be communicated.

+++

RESEARCH DESIGN

Fieldwork will take place in Germany (DE), Ireland (IE), Greece (EL), Spain (ES), France (FR), Poland (PL), Romania (RO), Finland (FI) (countries), after a pilot session is held in Malta (MT).

As a result, a total of nine groups will be held in person, one per country, each comprised of 10 participants (recruitment of 12 participants to ensure total).

Groups will be composed of people aged 18+ years old from the general population. Those who are employed in governmental institutions and involved in the decision-making process, the food and beverage industry, and/or market research agencies, will not be invited to the workshops.

Participants will be recruited from urban centres and periurban areas located in the vicinity of the location where the workshops will take place.

Each group will last 180 minutes.

RECRUITMENT CRITERIA :

- **Age:** 18+ y.o., with the requirement of the youth (18-25 y.o.) and the elderly (65+ y.o.) to be represented in each group
- **Gender: An** even spread between men and women (people who do not self-define as woman or man will not be excluded from the research but there will be no specific quota on non-binary persons).
- **Relatedness to the issues of Food Contact Materials' safety, hygiene and sustainability**:
    - **a** fair mix across low, medium and high levels of awareness/ concern with regards to the following four aspects
        - Awareness of the fact that traces of materials that come into contact with food (, e.g., plastic or aluminium in packaging)
        - Concerns over food security when buying food (e.g., freshness and quality ensured by packaging)
        - Considerations about minimizing packaging
        - Concerns about the use of pesticides
    - representatives of those with food allergies and other health conditions associated with enhanced care when it comes to food choices, including at least 1 pregnant or breastfeeding woman per group
    - a fair mix of different food behaviours
- **Education, Financial & Employment status**: Fair spread between different education levels, as well as between different financial and employment statuses.
- **Household** composition: Fair spread between different household compositions.
- **Area:** A 50%|50% split between the centre of the city and its peripheral areas.

Methodology of the exercise consists of an at home diary (5 days prior to the group) and in-person discussion through the following co-creation workshop. The purpose of the research is to understand respondents' understanding, behaviours (purchasing, use), experience, concerns and expectations with regards to food contact materials. **Moderators, please send the home diary at least five days before the start of the group so that participants have the time to ask questions and implement comments. Please also print the pictures that participants take and send you back prior to the workshop.**

Please write down all the questions that were asked by participants and that are too technical to be answered throughout the workshop. At the end of the focus group, you can send these to Kantar Public to be responded to by DG SANTE.

Unique identifiers: During the workshop, at four different times, participants will be split up into two discussion groups, group A and group B. In order to ensure the best discussion and reduce the chance for biases and pegging of the discussions, we have designed unique identifiers that allocate participants to specific discussion groups for each of those time. Only two pairs of participants will be in the same group more than twice and no participants will be in the same group at all times. The resulting identifiers look like – A B A B, for a participant that would be in group A, then group B, then group A, then group B. Write down the unique identifiers of each of the participants prior to the session in the table below.

Identifier	**First name of the participant *(to fill in by the moderator)***
A – B – A – B	

A – A – B – A	
B – A – A – B	
B – B – A – B	
B – A – B – B	
B – B – B – A	
B – A – B – A	
A – B – B – A	
A – A – A – B	
A – B – A – A	
B – B – A – A	
A – A – B – B	

Staff from European Commission – DG SANTE and the JRC will attend some workshops as silent observers (virtually or in person depending on the preferences or availabilities) but will not participate in the process.

Indicative time allocation per section:

Introduction	5 min
Exploring habits, experiences and attitudes toward FCMs	15 min
Case-studies	20 min
First coffee break with Expert Cards	20 min
Thematic Deep-Dive (Boots)	80 min
Co-creation	35 min
Wrap-Up	5 min

[DISCUSSION GUIDE]

As with all qualitative discussion guides, this document is not intended to be an exhaustive questionnaire but rather an indication to the moderator of the topics to be covered, the approximate time to be allocated to each area of discussion and to provide prompts and probes on areas for additional investigation. National moderators will receive an in-depth briefing, to provide them with a full understanding of the research and its objectives.

5 mins

Introduction

OBJECTIVE OF THE SECTION:

Introduce moderators and participants, explain the purpose of the co-creation workshop, and provide guidelines and house rules.

Registration:

Register consent for recording and webstreaming

Give participants all the materials they will need

- Unique identifier
- Printed pictures
- Post its
- Pens
- Indicate where sheets of paper can be found

Introduce the tools of the workshop, in particular the idea of concern cards and ideas cards.

The concern cards are post-its. Concern cards are blue, and idea cards are yellow. Participants are invited to note down any concern related to Food Contact Materials, their safety, either for citizens or for the environment, at any point in time during the workshop. Please use the post-its and note only 1 concern on each post-it. In the end of today's discussion, we will be working in teams on a small creative exercise – and these concerns will serve as reminders of what we have been talking about. Don't wait for instructions to note concerns down – just do it whenever any idea comes to your minds. In addition to concerns please do note down ideas on what could help you and other people to increase the safety of citizens when it comes to food contact materials, as well as what can help to make our use of food contact materials more ecologically-friendly. Please, don't think that you will remember it. As we have noticed from experience, ideas get forgotten, unless they are noted down. You don't need to write down full sentence – a key word or phrase will be enough to remind you of your own thought later today.

Introduce the idea of working groups and ask everyone if they have their unique identifier which was provided to them at registration:

We will work a lot in groups, and you will each have a unique identifier saying A or B for each time we split up in groups. For example, if you have a sequence on your unique identifier indicating A A B B, this means that in the first group exercise, you go to team A, same in the second, and for exercises 3 and 4 you go to team B.

First name of the participant *(to fill in by the moderator)*	Identifier			
	Game cards	**Case studies**	**Booths**	**Label co-creation**
Name	**A**	**B**	**A**	**B**
	A	**A**	**B**	**A**
	B	**A**	**A**	**B**
	B	**B**	**A**	**B**
	B	**A**	**B**	**B**
	B	**B**	**B**	**A**
	B	**A**	**B**	**A**
	A	**B**	**B**	**A**
	A	**A**	**A**	**B**
	A	**B**	**A**	**A**
	B	**B**	**A**	**A**
	A	**A**	**B**	**B**

Moderator

Introduce yourself

Works for Kantar Public, an independent public opinion research company; the workshop is conducted on behalf of European Commission's DG Health & Food Safety

Process

If applicable – Kantar Public project team observing / client observing but cannot intervene

Remind of the aspects provided in the written instructions:

- As mentioned on the platform, keep in mind that we will be using concern and ide cards. Blue – for concerns. Yellow – for ideas. Note them down whenever something comes to your mind.
- Also, remember you have unique identifiers. Use those letters when we split up in groups. 4 group activities, so each time you use the corresponding letter. Does everyone have it?
- Audio and video recording for the purpose of further analysis. Confidentiality and anonymity is a must.
- No right / wrong answers, free discussion. Disagreeing is perfectly fine. But we respect all opinions, there is no need to come to a consensus.

15 mins

Exploring habits, experiences and attitudes toward FCMs

OBJECTIVE OF THE SECTION:

Gain insight into typical behaviours of citizens in potentially unsafe scenarios around Food Contact Materials, as well as understand their way of thinking and level of concern in such situations.

Introduction:

Subject

Moderator text (Please feel free to adjust the text to suit the national context): This workshop is carried out on the topic of Food Contact Materials.

First of all, thank you all so much for taking your time to fill in the diaries. We looked through them and they all look brilliant! We will have a lot of different creative exercises today, and the ideas and thoughts you developed while filling in your home task diaries will be helpful. We will start with talking about what Food Contact Materials are and the concerns related to them. Please feel free to think back on the list of concerns you prepared at home. We have included those in this list of concerns here (show display/screen) that you can use all along the workshop (can be done on a screen or flipchart).

- **Spontaneous associations:** When you first heard the phrase "Food Contact Materials", what came to your mind? It could be anything, including images, symbols, colours, etc. - no restrictions here.

Moderator: First, I will just remind you of the definition of Food Contact Materials as it stands in the current EU law. According to the European Union, what we call Food Contact Materials are all types of items that are intended to come into contact with food, i.e., food packaging, containers for transport or storage, kitchen equipment, cutlery, dishes. But also includes anything that could come in contact with food under normal foreseeable conditions of use – for example, paper tissues. The purpose of our discussion today is to support the European Commission in revising legislation about Food Contact Materials. So, we will not discuss food production machinery and filling lines but focus on what you use on a daily basis.

Game Cards: We will now split into two groups, group A and group B. Your group would be the first letter of your identifier. During this group we will discuss the concerns that are shown on the screen and answer the following question:

Concerns to be displayed on a screen

- **Examples of concerns:**
  - **Leaching of dangerous substances from Food Contact Materials into foods**
  - **The recycling process aim at removing chemical contaminants**
  - **Change in the original properties of the food contact material (e.g., scratch marks)**
  - Change in the original properties of the food that came in contact/ was stored in the object (e.g., change in test, colour, smell)?
  - **Controls on the safety and compliance of FCMs sold in the EU**
  - Safety of imported Food Contact Materials (from within and outside of the EU).
- *Spontaneous reactions. Moderator to ask 2-3 participants to give their top 3 concerns and to ask others if they agree.* Are these similar to the ones that you thought about? What are, for you, the top 3 or 4 concerns?

- How should these concerns be addressed, in your opinion? *Moderator to give examples of a situation for participants to understand the concern if confusions arrive. Moderator to prioritise here first those that did not give an answer first in the previous question.*
- What are other concerns related to Food Contact Materials you can think of? *Moderators to look at list and ask them for top of mind reactions of concerns that are not on there yet. Ask participants to share their experiences including from their home diary and the FCM they used/brought.*
- *2-3 minute of discussion per concern mentioned by the participants.*

20 mins

Case studies

OBJECTIVE OF THE SECTION:

Gain insight into behaviours of citizens in potentially unsafe scenarios around Food Contact Materials, as well as understand their way of thinking and level of concern in such situations.

Moderator: In this part of the workshop, we will discuss case studies of an alteration of a food contact material, for example through damages, defects, unintended use etc. and discuss some solutions and recommendations. We will be divided into 2 groups, Group A and Group B. To find out which group you are, look at the identifiers' second letter.

- *Topics:*

Case-studies to be given to each group

  - **Group A**
    - Re-use Case of single use item including to re-heating (microwave or oven) or freeze
    - Plastic vs. Glass bottles in relation to sustainability
  - **Group B**
    - Bio-based label Case
    - Absence of label or information Case

- *Moderator: D*iscuss the two scenarios described on the cards. Talk to each other and decide what you would do in each of those scenarios, and why. You have about 10 minutes or 5 per case study.
  - Have you ever faced this situation? If yes – what did you do? What did you base your choice on? *(If no discussion already in place, PROMPT: did you look up information? Act out of habit? Etc)*
    - If you have never been in this situation – hypothetically, what do you think would be the best way to react? What are some of the criteria that made you make that decision?
  - What are some potential doubts and concerns that you have when you imagine this scenario? *Top of mind, in a popcorn style. Participants to give up to 3 or 4 concerns.*
  - What information and guidance would you have needed to make your decision confidently in this situation? *Popcorn style with no repetition between participants. Ideally, moderator to list the information on the paper board*

- **Back to whole-group discussion:**

Case-studies to be displayed on a screen

Participants to present only one case study per group, showing their "solution" and then ask other groups for their feedback. Focus on concerns and ways of thinking. Possible prompting questions:

We will now present the case studies we had and the results that we thought of in teams.

  - Best ways to act
  - Doubts and concerns

- Information and guidance that would be needed to help participants make a decision

20 mins

Coffee-break & Expert cards

OBJECTIVE OF THE SECTION:

Provide the participants with information and knowledge pieces to stimulate further discussion. Arrange a small break with refreshments.

Moderator: ensure that posters/ flipchart are covered in the first part of the group and only revealed during the coffee break. After the coffee break they should be kept open – in case the participants need more inspiration during the co-creation exercise. The information can be displayed on a screen, on flipcharts, posters on the walls, or any other format that allows for exploring it freely during the coffee break while moving around the room.

Moderator*:* We will have a 20-minute coffee break. During these 20 minutes, please take some refreshments and then walk around the room and look at the flipcharts/ posters hanging on the walls. They all present some information related to the topic, as well as examples of safe behaviour in scenarios we have just discussed. While walking around, feel free to note down (take pictures, or use post-its) things that you find most interesting/ surprising/ useful. These topics will all be relevant for the discussions we will have after the break.

Expert cards are available in Section 9 – Annexes.

80 min

Thematic deep dive - Booths

OBJECTIVE OF THE SECTION:

For each of the identified themes of safety and hygiene, sustainability and information, explore and identify needs and preferences.

Moderator: This activity is a continuum of the previous activities, in which the goal is to collect the participants' concerns. The World Café style method is used in this part with each group of participants rotating between the booths.

Moderator: Each discussion group should be moderated by one moderator. Discussion rounds should follow the planning below

- *Round 1: Group A – Safety, Group B – Environment – 25 minutes*
- *Round 2: Group A – Environment, Group B – Safety – 25 minutes*
- *Round 3: Group A – Trade-off, Group B – Trade-off – 20 minutes*
- *Break – 10 minutes*

Moderator: We will now deep dive into discussions about more technical topics. These topics are linked to the discussions we have had before. You will need to think back about the information you have just read on the posters. To help you, we have printed these in a card format for your availability on the tables where you will be sitting. We would like to hear what you do in some of these situations, your opinion and feedback on what you think of the current legislation and specific areas that you see as being of most concern, and why. The material should help you in forming your opinion.

Process for the exercise: We will split into two groups again. To find out which group you are, look at the identifiers' third letter. Each of the groups will discuss three topics of concern to Food Contact Material: safety, environment and hygiene. Each topic will be discussed for about 15 to 20 minutes, except for the last round which will only last 10 minutes. At the end of the discussion, we will take an additional 10-minute break, before we reconvene to put all of our thoughts together.

MODERATOR: Throughout the discussion, for each round, please remind the participants to keep record of their concerns and their ideas, and have them mark down their top concerns on one common sheet of paper. They can use whatever method they want but should note down at least the key concepts that they think of during the discussion.

THEME 1. SAFETY

Expert cards 4, 7, 12, 9 to be placed at this booth, as well as the brochure from card 11

- **Spontaneous associations.** We have touched upon different concerns about safety at the beginning. From what you have learned so far, anything surprising from the expert card or aspects on safety you did not consider?
  When you think of safety in relation to Food Contact Materials, what comes to your mind? What is one food contact material that is for you very safe? Why?
  Moderator: Here we will be able to see if concerns mentioned in the discussion and/or shown on the screen at the beginning of the workshop pop up again, indicating that these are really concerning matters. If lack of ideas, can refer back to those matters.
- **Definition**. What is one food contact material that is for you very safe – eg. Among FCM you brought today? *Moderator to ask participants to place their FCMs in the middle of a table and choose the one they think is the safest and give top of the mind reasons why.*
  - Across different materials (*show here list of materials in expert card*), which ones do you consider more or less safe?
  - Why so?
  - Picking the most and least safe one to you, would they be unsafe or safe in all situations – different foods (hot, cold, liquids, acid, fat), different preparation (oven, microwave, reuse, long-term storage, single-use)
    Moderator: *Encourage recall of home task, if nothing comes to mind spontaneously. Note down the safe and unsafe materials in a list on the board by asking 2-3 participants and asking other to validate or build on those. Use the FCMs that were brought participants as reference, as well as Expert card 12 (list of FCMs).*
    Prompt: use of different materials for different uses, including safety of synthetic vs natural materials and reuse versus single-use.
- **Let us talk about hygiene which is also linked to safety:**
  Thinking about different places you have bought and eaten food from (restaurants and coffee shops, supermarkets, on-the-go food, takeaway, at home delivery systems, food collection points, farmers markets, bulk and zero waste shops), where could hygiene be an issue? Are these a concern to you or could there be a concern to other people?
- **Let us take a specific situation of 1) reusable food container for takeaway and 2) reusable bottles in supermarkets, and 3) reusable cutlery in food markets, and analyse how we would respond in that situation.**
  1. Imagine you have to take your own container for takeaway that you are reusing from previous take-way. However, you later get sick after eating the food and it appears that it is not linked to the actual food but the container you used.
  2. Imagine that supermarkets now only offer liquids in refill systems which means you need to either buy or bring your own bottles or containers. Buying the store's reusable bottles means you need to return them there to get the deposit refunded. Using your own bottles requires to wash them on the spot according to specific instructions.
  3. Imagine you go to an open-air food market. All cutlery, plates and containers have been replaced by reusable items. The straws are made from corn-based plastic.
     Moderator to ask the following questions for all three scenarios. This should not take more than 10 minutes in total
     - What would you do as a consumer? (prompt about reuse instructions and hygiene/cleaning)
     - What could you have done as a consumer to reduce such risks?
     - What measures could the business take to ensure hygiene?
     - What could potentially have helped you better reuse reusable articles? (Prompts: Any information needed?)

- **Example of the ice-cream tub as a tupperware.** Sometimes people reuse some types of food containers such as ice-cream tubs or take-away containers to store, freeze or reheat food. The issue is that the ice-cream tub is suitable for freezing but might not be appropriate to reheat food (as seen in Expert card 6). *Spontaneous reactions.*
    - Imagine you are exposed to those dangerous substances. What are some ways in which you think this situation could have been prevented? Why?
    - Let's reflect on a specific new measure that is not currently in place but can be taken: that is indicating a safety level threshold beyond which such element should not be migrating into foods. How do you think this measure could have helped you in the context of our microwave case study? Why/not?
        - What sort of information/ measures from responsible organisations would you need to make sure you could understand this information prior to using the ice cream box, for example? *Moderator: more detailed instructions on how to ensure safety when it comes to such Food Contact Materials; extra safety labels for people who need stricter safety*
- **Reflection on the process to enforce safety.** *Moderator to refer to current legislation*. Let's reflect on what we have read in the expert cards and what we have just discussed. Thinking more generally of all Food Contact Materials, according to you, what are the key elements that are needed to ensure the safety of Food Contact Materials?
    - For the refill systems at shops, home delivery systems, bulk-food systems – who should be responsible for the different steps of cleaning/hygiene, delivery, sorting, collection or return?
    - To what extent should the burden and costs be the responsibility of the business or the consumer? Should these be distributed to all businesses and consumers or to the individual?

THEME 2. SUSTAINABILITY

Expert cards 3, 5, 6, and 8 to be placed at this booth, as well as the brochure from card 11

- **Definition**. Which elements constitute sustainability when it comes to Food Contact Materials?
        - *Probe, if not mentioned spontaneously: production of Food Contact Materials, waste generation, recyclable, environmentally friendly materials, …)*
        - *Use FCM brought to prompt whether sustainable or not, which aspects and why.*
    - What are **top 2-3 elements** that could be of concern and come to your mind with regards to the **sustainability** of Food Contact Materials? *Moderator – prompt more specific examples, if the participants struggle with generating ideas: recycled plastic and its safety; overpackaging; single-use items;*
- **Example of reusable Food Contact Materials.** Let's talk a bit more about reusable Food Contact Materials.
    - What are some pros of moving from single use to reusable food contact materials that can you think of? What are some cons?
      Moderator to start with pros, and then go to cons and give an example from the case studies.
    - Do you use reusable containers and tableware? If so, in what situations? *Moderator to stop at 2-3 items/ situations and then refer to them for the next questions.*
        - If no, what is preventing you from doing so?
        - What can be done to help you deal with those obstacles?
        - If no obstacles, what do you think could motivate/ help you use more of those?
- **Example of reuse and refill food systems.**

- Do you or have you used **reuse-systems** in e.g. food delivery, supermarkets, or in-bulk stores?
  - If yes, why? What are some benefits of the system?
  - If not, why not?
  - What are some potential issues (hygiene, safety, sustainability) with this system beyond the ones you just mentioned? Why these?
  - What could businesses do to encourage you to use such systems?

Moderator: Here, you can give the example of behaviors in supermarkets and food shops, including being able to refill bottles or use reusable shop bags to bag vegetables., but also systems of bringing back items to the supermarket, often pending an incentive but not always (for example, "consignes" or DSRs in Belgium and Germany – the expert card on DSR can be used as an example here).
Importantly, the question here is not about administrative or financial barriers. If the discussion leads that way, please revert it back to the original matter at hand, i.e. the organization of the bulk buying system.

- **Example of bio-based and compostable materials.** Now let's talk about bio-based and compostable materials. *MODERATOR: ask the following separately about each of the type, i.e., bio-based // compostable. If the participants are struggling with defining them/ defining them incorrectly – provide them with definitions.* How would you define each of them?
  - **Definitions:**
    - **Bio-based FCMs** – are materials made from renewable raw materials that have a direct or indirect natural origin. Examples include paper made from wood fibres and various types of plastic such as PLA (polylactic acid). They generally exhibit some degree of biodegradability, but not always. For example, some bio-based bioplastics are nonbiodegradable.
    - **Compostable materials** are biodegradable under specific conditions as described in standards such as EN13432 (a standard on industrial composting of packaging). This means that compostable products can disintegrate into non-toxic, natural elements. Example: bioplastic made from polylactic acid derived from corn. Can be used for food and drinks that are served cold.
  - What are some of the benefits that you can think of for those different materials?
  - Have you ever come across bio-based, biodegradable or compostable plastic food contact materials? In which kind of products? Was it a conscious use/purchase, if so, why? If not, did you have any concerns about them?
    - What type of information would you need to know for you to make a more conscious purchase of these items?
- **Reflection on the process to ensure sustainability of Food Contact Materials.** *Moderator to refer to current legislation*. Let's reflect on what we have discussed before and read in the expert cards and what we have just discussed.
  - What should be the main areas of action that law could act on to increase the sustainability of food contact materials? *(PROMPTS: sourcing, impact of production, impact of waste, lifecycle incl. food waste)*
    - Why this area?
    - What could be done, specifically?
    - Would this have any potential negative consequences? If so, on what (*PROMPT: safety*)?

THEME 3: Trade-offs between Safety and Sustainability

Expert card 12 to be placed at this booth, as well as the brochure from card 11

- **Introduction to the topic**. Let's now talk about potential trade-offs between for hygiene & safety on the one hand and sustainability on the other hand. When deciding to use or buy an FCM (or packaged product), do you and if so, how do you make a decision regarding safety, hygiene or sustainability?
    - What are some of the questions that come to mind when you made such a decision? Did you ever look up any information? If so, what helps you make your decision?
    - Have you ever been in a situation where you had to make a choice between safety and sustainability? What situation was this? What did you ultimately do? Why?
      MODERATOR try to have all in the group give an example.
- **Case study of zero-waste stores**. Think of zero-packaging grocery stores or bulk buying lanes in supermarkets – places where the packaging is minimized, meaning that citizens have to come to the store with their own food contact materials (e.g. containers). *Moderator: refer to the previously mentioned example with the bottle refilled in a different supermarket*.
    - Now, depending on whether you do or do not buy in bulk or only rarely/ few types of food items:
        - Why do you decide for or against bulk or only certain food categories? What are some key motivators in your decision?
        - What aspects regarding sustainability in bulk-shops are most important? And about hygiene/safety?

      Exercise. Please give me examples of food items you do frequently buy in bulk or you would buy in bulk if it was available in a convenient way for you: write them on post-its. And examples you rarely or never buy in bulk and you would not buy in bulk even if it was conveniently available to you: write them on post-its.
    - What are the reasons why you would not envisage buying in bulk the second category of products?
    - Taking this into consideration, what are some topics which could be done to increase safety or sustainability that you believe are not that important to have strict laws on? What are some topics on which you think there should not be any compromise? For both, why?
- **Case study of new sustainable food contact materials**. Our final case study concerns new materials following market trends for more sustainable consumption.

  Recycled materials (recycled PET bottles, recycled paper and board food trays or bags), bio-plastics (PLA), materials made from unmodified plant or natural material (spaghetti straws, hard bamboo cutlery, compressed palm leaves, beeswax for waterproofing or food conservation), alternatives to plastics such as waxed wrapping paper, coated paper cups, innovative materials such as airtight meat packaging, modified atmosphere packaging (to avoid oxidation of fish/meat).
- Have you used or bought food packed in such materials? What other such material can you think of?
    - To what extent do you think that these materials are more sustainable? Are they equally safe to more traditional materials such as plastics, glass and metals? Why or why not?
    - If you actively choose to use these materials instead of more traditional ones (plastics), what made you change to these materials? If not, is there any reason why?
    - What aspects (production, consumption/use, disposal of these materials) related to safety would need improving? What aspects (production, consumption/use, disposal of these materials) related to sustainability would need improving? Which ones of these aspects are more or less important and why? Are some essential?
- **Cost and convenience.**
    - To what extent would an increase in cost be acceptable for having more sustainable FCM or food delivery and consumption models? Where would you draw the line (e.g. refer to basic foods like milk/eggs, cooking equipment, brands versus generic foods, cost of reuse/refill systems using deposits)?

    - Some choices will require changing of how we sell, buy and consume food (e.g. bring containers/bags to refill at shops, return and deposit systems, bulk-buying, lower durability and more limited uses of certain sustainable materials).
- **Summary**.
    - What are some things that could be done overall to make sustainability and safety an easier choice to make or preference to have?
    - What could be done to enable consumers to make more sustainable choices? *Prompt*: *would information on the carbon footprint, sustainable sourcing, or absence of dangerous chemicals of a food packaging or other FCM (cooking equipment) affect your behaviour?*
    - Among those, which would be acceptable to be the consumer's responsibility/burden? Which are not acceptable and should be managed by authorities or businesses?

Moderator: if the responses are around costs, admit the importance of this and prompt other ideas. The discussion here should not boil down to cost-related issues.

****

10-min break

****

Moderator to write on the board the main issues during the break and leave them there during the label creation exercise.

35 min

Co-creation

(20 min – co-creation exercise in groups + 15 minutes whole-group discussion)

MODERATOR – provide the context: As mentioned before, the EU regulation and legislation around Food Contact Materials is being revised at the moment. As part of this project, the Commission looks to improve labelling and access to information to citizens, including through digital means (for example, digital code to get further information on an FCM).

MODERATOR: Welcome to the last part of activities of this workshop. This exercise will act as a role playing game. You will imagine that you are now members of the European Commission and are in charge of creating the ideal label that addresses all your concerns and ideas about safety, environment, hygiene and gives you enough information to use Food Contact Materials accordingly. The task here is to address not only the content, but also the design of the label. We will divide into two groups again. To find out which group you are, look at the identifiers' fourth letter. After the designing of the label, we will have a plenary session to discuss and presented the labels of each group.

Before we get to the creation exercise, please look at the items you brought with you today. Can you see any labels indicating how the item should/ shouldn't be used? Can you share what you see with us? *Moderator: 1-2 examples are enough.* So this is the example of a label which you, as a team working for EC are going to create. *Moderator – if none of the items has a label – refer to the labels observed in the expert cards exercise.*

MODERATOR: Provide all the necessary materials: pictures, examples of FCMs, markers, post-its, flipchart, concern cards…

Prompts to be spread out on screen

Examples of labels to be displayed on a screen (Expert card 10)

Ensure all the stationary is at hand

- **Co-creation exercise – the ideal label:** For the purpose of this exercise, you can use all the pictures we have been talking about today/ you selected in your home-task, and you can make use of new pictures/ drawings. You can as well get back to concern cards and information on the posters, for inspiration. Finally, you can look at the food contact material you have brought with you. The label should present it. Once you have developed your ideas on teams, think of who in your team is going to present the idea afterwards. While developing this idea, cover the following **aspects**:
    - **Content**: which idea/ message should be conveyed? Which concern(s)/ problem(s) is(are) addressed?
        - In particular, thinking back to our previous discussions, what kind of information do you need to form your opinion about the safety of Food Contact Material?
            - About sustainability?
            - About hygiene?
    - **Visualisation**: symbol/ text/ combination?
    - **How much and which information** need to be provided on the label? Or indirectly, via e.g. a link to as additional information?

- **How about trust** – what and how should such information be communicated, so that you know that it's reliable and trustworthy?
- **Format**: engraved on the paper material? Sticker? QR code?
  - If so, which information should be provided where and why?\
  - Think also about the **information that should be provided**, specifically information that should be immediately visible versus information that can be secondary: *e.g., allergens, food composition info, user instructions, CO2 footprint, contact details of producer, detailed list of all substances in a FCM etc. MODERATORS: only prompt the ideas if the participants are stuck. Otherwise, let them work freely*

Think about ways of conveying this, e.g. engraved on the paper material? Sticker? QR code?

- *Moderators: list the **aspects** on a flipchart/ whiteboard, or provide the participants with the handouts, to guide the process. Walk around to assist and listen in. Upon request - assist the respondents with the following prompting questions while they are developing their ideas:*
  - Think of the concerns that have been raised in today's discussion (product composition, origin, recycled content, reusability, sustainability)
  - Consider the needs of particular citizen profiles, such as children/pregnant & breastfeeding women/people with allergies/ specific health/ dietary conditions/elders / other factors (socioeconomic status, occupation status etc.): is this information accessible to all and inclusive? How could we adapt our solution to those that are not able to access the one we had previously thought of? Think also of physical disabilities etc.

After working in groups, the leader of each team presents their label shortly (2-3 minutes per group). Moderator then opens up the discussion to the floor for all to discuss:

***Content**:*

- Why did you choose this particular message to convey/ particular concern to address? What made it #1 for your team?
- How detailed should the information provided around this be?

Format:

- How do you think this could be executed?

Label itself:

- If a label indicates that the Food Contact Material is safe, what would your assumption be if the symbol is absent? Does it automatically mean that the item is not safe?

Staying informed:

- How can citizens become informed on the new label? *If nothing comes to mind – prompt:* Should there be information campaigns to inform citizens about the meaning of the label?
- How would you know that you can trust this information?

5 min

Wrap-Up

Moderator: We are now nearly over with this discussion group, thank you so much for your patience and investment so far in the discussion. We will now wrap up and reflect on everything that was discussed so far, collect any concern that might be still pending. Specifically, let us summarise:

- **Summarize**: what are the must haves & nice to haves, when it comes to information around Food Contact Materials'? Choose 2-3 aspects that you think are absolutely necessary, and 2-3 aspects that are not strictly necessary, but would make your life related to food consumption easier/ nicer? Please, explain your choice. *Top of mind, popcorn style, and when all gree stop discussion.*

MODERATOR: write to the experts – moderators to write down all the questions that were asked by participants and that are too technical to be answered. Send these to Kantar Public to be sent and responded to by DG SANTE.

Thank the participants and finish the discussion.

Annexes – Material for the workshop

MODERATOR: In the following part, we will provide you with all of the material necessary to conduct these workshops. Please only share/print for participants the text that is in boxes in each section. The remaining text can be considered as instructions or pointers for the moderators.

Case-Studies

<table>
<tr><th colspan="2">Group A</th></tr>
<tr><td>Case A1
Which of the following materials can be used safely for freezing:
▪ Glass
▪ Plastic Containers (look at options A, B, and C)
▪ Aluminium Foil
▪ Supermarket wrapping (for meat or poultry)
▪ All of the above
What about reheating in the microwave?
▪ ice-cream plastic box
▪ plastic containers sold for storing food
Imagine after you have heated the food in this container, you notice that food has changed its colour slightly. Why do you think this could have happened? What would you do in this situation? If the food seems fine, does it mean it is safe to reheat in those containers?</td><td>Case A2
If you compare plastic bottles vs. glass bottles – which one do you think is more ecologically friendly? Why so? [13]</td></tr>
<tr><td>Case A1 Plastic Container A and B
  </td><td>Case A1 Plastic Container B
  </td></tr>
<tr><td colspan="2">Case A1 Plastic Container C</td></tr>
</table>

[13] https://www.ecowatch.com/glass-bottles-harm-environment-2648968467.html

Case B2

If you use a plastic bottle that is labelled as bio-based, does it mean it's compostable or biodegradable? Does it mean it is sustainable?

Case B3

Imagine that a sticker or label containing information about food container gets lost, so information is no longer available. You are thinking of using this food container for: a) putting it in a dishwasher; b) using it to freeze some home-made pasta sauce; c) heating up the foods in a microwave oven. What would you do in each case?

Expert cards

Expert card 1 and 2 can both be put on the same poster but should be printed as separate cards.

Expert Card 1 - Current EU policy about Food Contact Materials with examples

EU law requires that all materials and articles (called Food Contact Materials) which are intended or likely to come into contact with food must be safe for citizens. The law requires that those materials and articles do not transfer any substances that can affect the safety or quality of the food. Additional specific EU rules exist for certain materials such as plastics. For other materials, EU law is supplemented by national legislation. This is the case for paper or printing inks for example. The same rules apply to all businesses in the EU to ensure the same level of protection to all citizens and facilitate the free movement of goods.

Expert Card 2 - Some challenges the EU is facing with examples

Certain materials, other than plastics, are not subject to specific EU rules but to national legislation of respective EU Member States. The lack of harmonised regulation can lead to significantly variable and unequal health protection for EU citizens. Additionally, businesses producing Food Contact Materials may find the lack of consistency in the regulatory requirements of each EU Member States burdensome and a barrier to free movement.

The evaluation of the EU legal framework identified some points for improvement. For example, current rules focus on the starting materials/substances and does not fully consider the safety of the final article (such as its final end use or interactions between the food and article). There is no system to prioritise the assessment of different substances used. Likewise, rules do not support innovation, more sustainable FCM or the safe recycling and reuse of FCM. Most citizen packaging are food packaging, most of which iscurrently not recycled. The revision of EU legislation will set rules to ensure the safety of recycled and reusable FCM, but this also requires improving collection and sorting, and the citizen's participation in changing how we use FCMs.

Expert cards 3 to 5 can all be put on the same poster but should be printed as separate cards.

Expert Card 3 – Reusable and Single-Use FCMs

When FCM such as cutlery either are sold, provided or appear as disposable or single-use (for example, takeaway cutlery), they should not be reused even if they could be at first glance.

Some materials are also more often used to make single-use alternatives to plastic products such as compressed plant-material (bamboo, corn, wood). Some may be presented as eco-friendly or biodegradable/compostable.

However, care should be taken to look for information confirming their environmental benefits (such as certification) and most biodegradables only degrade if collected properly and treated in industrial composting facilities.

Whereas other materials such as solid wood, steel or glass are more durable and tend to be used in reusable articles.

Therefore, when deciding to reuse an FCM, it is important to consider the initial intended use of the manufacturer of that article, and any labelling or instructions on their use, reuse, and disposal as waste.

Expert Card 4 – Correct answer to case study A1

Most articles were manufactured with a specific use in mind and require specific use instructions to be followed to ensure their safe use. However, overtime and under certain uses, such as freezing, some articles may present wear signs, damage, and affect the safety of the food. Other examples include the following:

- Non-stick pans and pots. Use of metal or hard serving spoons can leave scratches on the pan. Has this occurred to you and what did you do?
- Overtime, your baking tray seems to start having tear and wear signs. Would you continue using it and for how long?
- You bought jam at the store, but the airtight lid seems to have been opened, what do you do?
- Do you ever reuse the following items: ice-cream tubs to freeze food, takeaway plastic containers to store and reheat other foods, reheat pizza directly in its takeaway box, dish-wash a cup clearly indicated for hand wash, reheat food in plastic film without checking whether it can be heated, use articles which are clearly not FCMs intended to come into contact with food.

One should first look if any use and storage instructions are provided. For example, **plastic containers are suitable for freezing if indicated as suitable for this purpose. For example, by adding a special freezing symbol (snowflake)**. Instructions or a label indicating these can be used for freezing (or oven heating, or microwave being the most common instructions) should be present.

Additionally, the use of ice-cream tubs to re-heat food in the microwave may be unsafe for citizens! Ice-cream tubs are intended for ice-cream only. Placing such containers in the microwave to re-heat other foods can compromise the plastic and potentially release harmful chemicals into the food, which may lead to changes in colour and/or taste of the food.

If no instructions are present, a few basic rules can help guide you to use those items. For example, glass containers need to first be stored in the fridge, and only then can be placed in the freezer. Otherwise, it may crack.

Expert Card 5 – Correct answer to case A2

According to one study by the University of Southampton in England, glass could have a larger carbon footprint than plastic. As such, glass is very fragile and needs extra packaging during transport to keep it from cracking or breaking. A trailer can carry a greater number of plastic bottles because they use less packaging which takes up less space. When glass or plastic bottles are produced and ready for distribution, it still takes more fuel to transport glass products the same distance as plastic products because glass is heavier and more energy intensive to manufacture. More fuel usage means greater carbon emissions, resulting in a greater negative impact on the environment.

However, glass is still considered more sustainable than plastic. It is more durable and can last for many years, making it a good choice for those looking for a reusable container for liquids. The biggest problem with single-use plastics occurs when plastic bottles are thrown into landfill or, worse, the ocean, and potentially biodegrade into highly damaging microplastics.

Therefore, there is no clear answer. The most sustainable option depends on many factors such as capacity to collect and recycle/reuse, energy and resources required to recycle or reuse, transport distances between facilities, number of reuses, etc.

Did you guess it right?

MODERATOR: Expert cards 6 to 8 can all be put on the same poster but should be printed as separate cards.

Expert Card 6 – Correct answer to a case study B1

Bio-based, biodegradable and compostable have different meanings.

Bio-based plastics are fully or partially made from biological resources, rather than fossil raw materials. Those materials are not necessarily compostable or biodegradable. Biodegradable and compostable plastics undergo degradation under specific conditions mainly in industrial composting/treatment facilities and may be made from fossil-fuel based materials. Compostable indicates the item can degrade back into compost (therefore with organic waste). One often sees the term “bioplastic” which is confusing term as it used broadly to describe both bio-based and biodegradable/compostable plastics.

Did you guess it right?

Expert Card 7 – Correct answer to a case study B2

If there are no instructions on how to use a food container…

a) dishwasher use might be unsafe – opt for washing it manually if it is reuseable

b) freezing plastic containers may be safe, but not always. So, it is better to avoid freezing the container

c) heating food in a microwave oven may lead to the release of harmful chemicals into the food in some cases. Therefore, avoid microwave heating.

Did you guess it right?

Expert Card 8 - Recycling food contact items 14

As a society, we are increasingly aware about the need to reduce our environmental footprint and move towards a more circular economy, reducing the use of resources and waste we produce. and sustainable way to make this happen. Recycling and reuse allow keeping materials in the cycle, and reducing single-use waste. However food contact materials need to be safely recycled and reused under strict hygiene conditions to ensure citizens' safety. One issue is contamination with toxic substances from non-food contact materials (for example, paint pots, detergent bottles) collected together with food packaging (e.g. milk bottles). Separate collection can therefore improve the collection and cleanliness of food contact packaging wastes. Likewise, reuse systems will need to operate under strict hygiene systems. Improving recycling and reuse may need the active participation and information of citizens. This may require reading use and sorting instructions, bringing and returning containers in shops, buying food in bulk, and changing habits overall.

Example of separate collection system :

DRS is a system whereby citizens buying a product pay an additional amount of money (a deposit) that will be reimbursed upon the return of the packaging or product to a collection point.

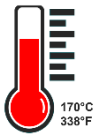
Expert Card 9 – Active/ Intelligent Materials – Have you heard?

Active Food Contact Materials absorb or release substances from food or into food in order to improve the quality of packaged food or to extend its shelf life.

Intelligent Food Contact Materials monitor the condition of packaged food or the surrounding environment, for instance by providing information on the freshness of the food.

MODERATOR – please print expert card 10 as a single poster and then show again during the cocreation exercise.

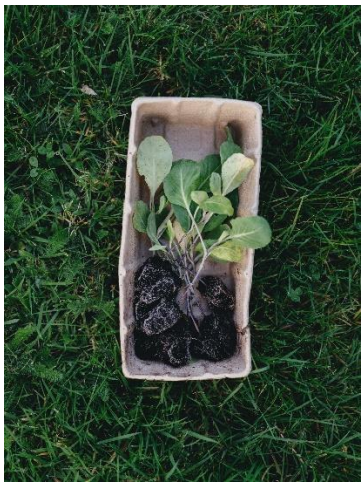
[14] https://zerowasteeurope.eu/2019/07/deposit-return-systems-an-effective-instrument-towards-a-zero-waste-future/

Expert Card 10 – Symbols and Labels		
 This symbol is often used on containers, such as Plastic Tupperware, to show that the product is suitable for food use. It may or may not have the word “for food contact” below the cup and fork.	 Maximum temperature to be used is 170 centigrade or 338 Fahrenheit	 Recycling – this logo is used internationally to show that the product can be recycled. This is not an indication that the packaging has been made from recycled material. If you see a number in the middle of this image, that is to indicate the percentage of recycled material that makes up that product.
 Non-edible parts	 Not to be used with acidic foods	 Do not heat
 Compostable – this symbol is a registered trademark of European Bioplastics and is used to show that the packaging is certified to be compostable. Only products that have met the EU standard EN 13432/14955 can use this logo	 Allergy Advice – often products that contain ingredients that are common allergies will include this symbol. One of the most common ones to see is this symbol with “may contain nuts” below it.	 Product suitable for freezing – if this image is seen on your food packaging, then you are able to freeze the entire product without having to remove the wrapping first.

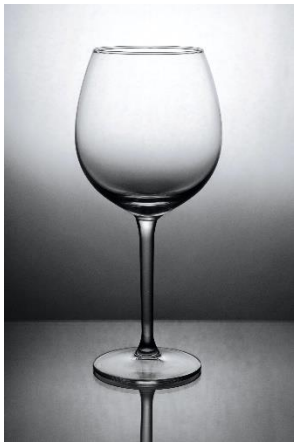
Expert card 11 – Brochure

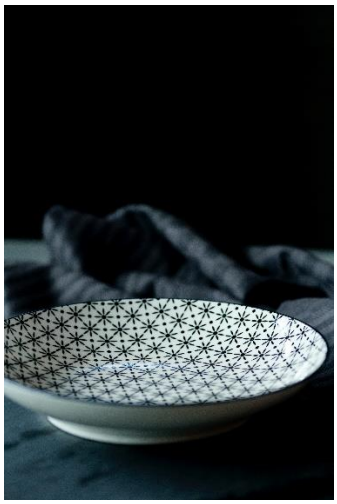
Please print out the brochure at this link: https://food.ec.europa.eu/system/files/2022-08/cs_fcm_legis_pm-guidance_brochure_en.pdf

Expert card 12 – Pros and Cons of different types of FCMs

Material type	Pros	Cons
Plastic 	Synthetic material from purified and identified substances. Production process and final composition can be (better) controlled and known. Reusable plastics are lightweight, durable and hygienic. Some single-use and most reusable plastics can be heated in microwave and used for freezing → Wide application for convenience food transport, preparation and consumption.	Use of fossil (petrol) resources if virgin plastic. PET can be recycled but most plastic-types are currently not recyclable for food use. Some more flexible plastics are less durable and migrate more substances. Single-use plastics may cause littering.
Biodegradable plastics 	Biodegrade under industrial conditions. From both fossil and bio-based sources.	Biodegrade under industrial conditions. From both fossil and bio-based sources. Not usually recyclable with normal plastics. More limited applications due to less inert nature (cannot use for heating, long term storage, etc.).

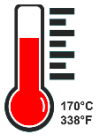
		Potential food safety issue as less inert (higher risk of contamination, degradation, migration of chemicals. Single-use plastics may cause littering.
Compostable plastics  	Compatible with food waste composting. Usually from bio-based sources.	Not usually recyclable with normal plastics. Potential food safety issue as less inert (higher risk of contamination, degradation, migration of chemicals. More limited applications due to less inert nature (cannot use for heating, long term storage, etc.).
Paper and board  	From potentially sustainable sources (plant and wood fibre). Lightweight and some can be durable/solid for use in transport. Monomaterial so more easily recyclable.	If not coated or treated, porous and cannot be used for hot foods or liquids. More porous nature means cannot be used to transport all foods and overall less durable, less reusable. For food use, often further treated (additives, adhesives, coatings etc.) to improve mechanical properties (to hold hot food and liquids). More porous nature means chemicals can migrate more easily to food. Non-treated paper and board cannot be recycled back into food contact articles due to contamination issues.

		Treated paper and board is often not recyclable and is treated as plastic. Single-use P&B may cause littering.
Metals (aluminium, steel) 	Durable, breaking, washing and heat resistant. Hygienic and easy to clean. Monomaterial and overall inert so more easily recyclable. Composition known so more easily recyclable.	No microwave, no freezing. Limited applications in convenience food transport, preparation and consumption. Possible migration of chemicals (whether harmful or not).
Glass 	Durable, washing and heat resistant. Hygienic and easy to clean. Monomaterial and overall inert so more easily recyclable. Composition known so possible to control harmful chemicals. Composition known so more easily recyclable.	Breakable and difficult to transport. Usually no microwave or freezing. Limited applications in convenience food transport, preparation and consumption. Mostly inert. Low risk of migration of harmful chemicals. Crystal glass → High risk of lead migration.

Ceramic and stoneware 	Durable, breaking, washing and heat resistant. Hygienic and easy to clean. Industrial ceramics usually microwave and dishwasher safe. Inert so more easily recyclable.	Manufacturing process not always controlled with potential risk that chemicals migrate, especially for artisanal items. Exact composition not always known especially for artisanal items. Breakable, heavy, no freezing → Limited applications in convenience food transport, preparation and consumption.
Wood and plant FCM  	From potentially sustainable sources (plant and wood fibre). Durable, breaking, washing resistant. Monomaterial so more easily recyclable.	May be heavy, no freezing, oven or microwave use → Limited applications in convenience food transport, preparation and consumption. Different plants have different chemical composition → Composition often unknown → impact on safety, potentially dangerous substances, allergens ? If untreated, porous/absorbant, hygiene issues ?

Co-creation exercise – Examples of labels

This is the same as expert card 10 and should be printed as a poster and then shown for the final co-creation exercise.

 This symbol is often used on containers, such as Tupperware, to show that the product is suitable for food use. It may or may not have the word “food” below the cup and fork. See article 15 of R1935/2004	 Maximum temperature to be used is 170 centigrade or 338 Fahrenheit	 Recycling – this logo is used internationally to show that the product can be recycled. This is not an indication that the packaging has been made from recycled material. If you see a number in the middle of this image, that is to indicate the percentage of recycled material that makes up that product.
 Non-edible parts	 Not to be used with acidic foods	 Do not heat
 Compostable – this symbol is a registered trademark of European Bioplastics and is used to show that the packaging is certified to be compostable. Only products that have met the EU standard EN 13432/14955 can use this logo	 Allergy Advice – often products that contain ingredients that are common allergies will include this symbol. One of the most common ones to see is this symbol with “may contain nuts” below it.	 Product suitable for freezing – if this image is seen on your food packaging, then you are able to freeze the entire product without having to remove the wrapping first.

Home Exercise – Brochures

This is a brochure provided by the client, to be sent to the participants after reception of their filled-out home tasks.

https://food.ec.europa.eu/system/files/2022-08/cs_fcm_legis_pm-guidance_brochure_en.pdf

Annex 3 – Participants' profiles

TOTAL	Total participants	90
Age	18-30	26
	31-50	30
	51-65	22
	65+	12
Gender	Men	46
	Women	44
	Non-binary (if any)	0
Education	Below High school	6
	Secondary school - High school	37
	University or Technical school degree (BA, etc)	35
	Master or PhD	12
Employment status	Still studying	11
	Employed	42
	Job seeker	8
	Freelancer	8
	Parental leave or other type of leave	2
	Not working and not looking for a job	19
Household composition	Single person	21
	Single parent with one child	4
	Single parent with several children or supporting one or more high-needs individual (disabled, elderly etc.)	6
	Couple without children	22
	Couple with one child	12
	Couple with several children or supporting one or more high-needs individual (disabled, elderly etc.)	23
Food specialities	Food allergies	17
	Special dietary conditions	18
	Pregnant or breastfeeding	7
	Endocrinological issues	9
	Cancer (now or in the past)	3
Food behaviours	Mostly cook and eat home-cooked meals	29
	Mostly eat home-cooked meals but often do not prepare them	18
	Mixed - Prepare and eat a mix of home-cooked meals and food prepared outside	36
	Mostly eat food bought outside	7
10.1. Concerned with potential materials that come into contact with my food, such as plastic or aluminium in packaging.	Never	9
	Rarely	11
	Sometimes	26
	Often	32
	Always	12

10.2. Worry about food security when buying food	Never	4
	Rarely	8
	Sometimes	30
	Often	28
	Always	20
10.3. Think about minimizing packaging	Never	7
	Rarely	14
	Sometimes	25
	Often	30
	Always	14
10.4. Concerned about the use of pesticides	Never	9
	Rarely	9
	Sometimes	28
	Often	16
	Always	28

Annex 4 – Evaluation of the workshops

Introduction

Qualitative methodologies should evolve with the population they aim to study. To ensure the efficiency of the method at hand researchers must ensure their research material is up to date and best suited for the topic and target population. This evaluation report for the food contact materials (FCM) study aims to highlight what worked well and what could be further improved for the benefit of future research following a similar method. The objective of this study is to provide citizens with a platform to give their perspectives on EU's legislation of FCMs. This research is meant to complement the insights and general views from included public consultations and interviews with consumer organisations, both conducted by DG SANTE. The analysis of both will be fed into the Commission's ongoing stakeholder consultation, which will be published shortly, feeding into the evaluation and impact assessment for the proposed review of the legislations.

The first section of this report focuses on the use of a pilot focus group along with the overall evaluation of the flow and feel of the discussions according to the feedback surveys. The subsequent sections assess the quality of planning and logistics, as well as the quality of facilitation. The report also covers each component of the discussion guide from the ice breaking activity to the wrap-up of the topic guide. Finally, it evaluates in detail the feedback processes undertaken by the research team following the end of the fieldwork phase.

This evaluation report relies on three sources of data: the feedback surveys (moderators and participants), debriefing sessions with moderators, research team brainstorm.

1. Feedback surveys: Two surveys were designed and distributed to both moderators and participants of the focus groups. The surveys were quite short and aimed at getting general feedback on the study and engagement activity. They contained a mix of closed and open-ended questions. The surveys were sent by email a week after the focus groups[15]. They were used to collect the participants' impressions of the workshop, asking them to explain how they perceived the organisation of the study and their general thoughts about the content of the study, as well as to what extent they were satisfied with the home diary activity and the entirety of the workshop.

2. Debriefing sessions: Country moderators were paired up to take part in one-hour debriefing sessions with the Kantar Public research team. During the sessions, country specific contextual elements were first covered before moving on to the key insights of the study. Following the key insights, each section of the discussion guide was evaluated covering moderators' opinions on how it worked for them.

3. Research team and client debriefing: prior to the analysis and coding phase, the Kantar Public research team gathered internally to discuss the topic guide and how it was used during the focus groups. The research team also met with DG SANTE and JRC on 24 November 2023 to debrief on the fieldwork and to gather their feedback on how the workshops observed went.

[15] The response rates for the surveys ended up being quite low due to time mismanagement and background factors explained further. For the participants' survey, we collected 22 responses out of 90 participants. For the moderators' survey, we collected 5 responses out of 18 moderators involved.

Table - Updated workplan

Week	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Dates	17/10	24/10	31/10	7/11	14/11	21/11	28/11	05/12	12/12	19/12	26/12	2/1	9/1	16/1	23/1	30/1	6/2	13/02	20/02
Phase 2: Fieldwork																			
Pilot workshop & subsequent revisions of the tools and material																			
First briefing and launch of recruitment																			
Translation																			
Second briefing																			
Home diary																			
Fieldwork																			
Debriefings with facilitators																			
Debriefing with client																			
Feedback surveys for participants and moderators																			
Debriefing with health expert																			
Phase 3: Analysis & reporting																			
Coding FG reports																			
Analysis - draft final report																			
Submission final report																			
Revisions to final report based on comments																			
Coordination meetings																			

Pilot and overall evaluation of the workshop flow

Evaluation of the focus groups is important, to provide information on the effectiveness of the project's implementation, to highlight good practices, and to learn lessons for future workshops using similar methods. In this section, the overall flow of the participatory workshops organised, and the lessons learned from the pilot are discussed and assessed.

1.1. The overall flow

The effectiveness and efficiency of the workshops is summarised below by an evaluation of the impressions and opinions collected through the feedback surveys sent to moderators from local offices and to participants.

On the one hand, the post-workshop survey sent to participants shows that 15 out of 22 participants were satisfied with the home diary activity and 21 out of 22 participants were satisfied with the entirety of the workshop. Most participants, across all countries, had a positive impression of the workshops. Overall, they were interested in the subject and felt like they learned new information about food contact materials and their labelling. Participants also said that more information about food contact materials should be provided to the general public.

Participants agreed that the workshops were well-organised, professional, and engaging. The moderators made the experience pleasant; they were well prepared and stimulated positive interactions within the group. A few participants perceived the home diary activity as cumbersome and in some countries the workshop lasted longer than anticipated.

On the other hand, the moderators were divided: some said that the activities were "unreasonably" long, and some moderators felt they lacked an overview of the study. There were too many briefings, some of the terminology was confusing to participants due to translation issues, and the instructions to moderators could have been better shared and in a timelier manner. More positively, the moderators found the subject of the workshops interesting and educational. The diversity of participants' backgrounds and profiles made the discussions lively and thought-provoking, and the conversation flowed.

1.2. The pilot

This project benefited from a pilot focus group. The pilot took place in Malta for budgetary and logistical reasons. The pilot was an ideal vehicle to test the screening criteria and the material used for the focus groups. The discussion guide and screener proved to be suited for the task. The focus group in Malta was a success in terms of insights harvested. However, for methodological reasons, some changes were made in the subsequent focus groups. To better reflect the 'workshop style' of the focus group and to make the topic more relatable to moderators, the research team changed some sections of the discussion guide in consultation with the client. The following elements improved the overall flow of the workshops and increased participants' engagement:

- Production of visuals in different formats (posters, PowerPoints, and leaflets)
- Shortening of the introductory sections
- Specifying the scope of each activity
- Case studies discussed in the thematic booths

Although the Maltese transcripts proved to be useful for the project's objectives and underlying research questions, there were some practical issues. The quality of live sound and image transmission was poor and rendered the real time viewing difficult. As a result, the Kantar Public research team took further steps to test the sound quality and recording capacities of the local offices for the remaining fieldwork.

Quality of planning and logistics

This section evaluates the progress and the flow between each step of this project's implementation. The following points assess the timings, the performance, and the effectiveness of the Kantar Public research team and its local partners.

1.1. Good practices of planning and logistics

The management of planning and logistics were mainly Kantar Public's responsibility. This meant organising and preparing for the workshops in coordination with the client, planning briefing sessions prior to the workshops to equip the local office with precise and concise instructions on the topic guide, and finally planning debriefing sessions post-workshop to assess the overall quality of the focus groups.

The research team remained in close contact with DG SANTE throughout the project. Deadlines agreed at the inception phase were respected and client feedback and comments were always taken into account. The scheduling of the workshops enabled both the research team and the client to observe all the focus groups that took place in a language that they were able to follow.

Kantar Public's research team was always available to answer questions from its local partners about the topic guide and the complex logistics of the workshops. The Brussels team showed great adaptability in the organisation and the planning of debriefing sessions with the local offices. These meetings were organised to take place a week after each workshop.

Finally, after receiving positive client feedback on the Irish workshop, the research team shared a recording of it with the other local partners. This clearly contributed to the success of the following workshops.

1.2. Lessons learned

The planning and organisation of this assignment has also highlighted elements related to its project management that could be improved for future research. The research team received feedback on the complexity of the feedback, in addition to a seemingly high number of briefing sessions which overwhelmed the moderators. In future projects, we might consider briefing smaller groups in longer meetings, rather than larger groups having multiple shorter sessions.

There were also some issues regarding revision of the topic guide and translation timings. The guide should have been provided earlier, which would have allowed more time for the local offices to have a read-through before the briefings. This was particularly true for the pilot in Malta. Additionally, it would have allowed the moderators to take more easily ownership of the topic and the specificities of the workshop.

Lastly, communication and management of the transcripts could be improved in future. Despite the research team giving clear instructions in the many briefings about the anonymisation of the transcripts, some local offices still had trouble respecting these requests. This led to many exchanges and wasting time in the reporting phase of the project. Some local offices' initial failure to provide verbatim transcripts also slowed things down in the report writing phase. The verbatim transcripts were delivered eventually.

Quality of facilitations

The following section assesses the quality of the workshops' facilitation, including the moderators' and participants' impressions of the discussion flow, the topic and the overall engagement throughout the workshops.

1.3. Good practices of facilitation

The research team's general impression observed during the workshops, as well as during the debriefings is that the participants and the moderators were satisfied with the flow of the discussion and perceived it to be quite natural. The discussions progressed even better when the participants were divided in smaller groups as it was easier to interact between each other and take the floor. The moderators also noted what stimulated the good flow of discussion was a good mix in each group of people from diverse backgrounds, different age groups and, more importantly, clear differences in the participants' knowledge and interest regarding the usage of FCMs in their daily lives.

During the discussion and in the feedback survey, the participants expressed great interest in the topic and wished more information was available to citizens. The research team observed, small groups of people even kept on discussing the case studies, and the personal experiences shared during the workshop, on their way out of the premises.

1.4. Lessons learned

Some of the challenges encountered in relation to the facilitation of the workshops were related to those mentioned above in connection with the planning and organisation of the workshops.

- The lengthy topic guide shared with local offices involved a lot of preparation work as the subject of the workshops is quite specific and niche. It also was not clear to some offices the amount of freedom to take ownership of the topic they were allowed to assume.
- A shorter and more concise topic guide would also counter issues of time management during the discussions. Some sections had to be accelerated because other sections stimulated more discussion among participants.
- The breaks planned in the guide were mostly not respected for the full time indicated. This meant that the participants were tired by the time they reached the last section – "Co-creation exercise" – with the result that it did not produce the content and data that the client and the research team were expecting.
- Finally, the logistics required from the local offices during the workshops might have been too complex considering their value in retrospect. The regular changes between rooms and splitting the full group into smaller breakout groups might not have been as useful as expected.
- Subsequently, the number of visuals to be printed in different formats and to be showcased at different timings during the discussions might have placed more work on the moderators than was necessary. Having the participants observe the expert cards during their coffee break did not allow them to take a proper rest from the discussions nor to assimilate the information to their best extent.
- Additionally, the topic guide demanded that the participants keep a record of their concerns and ideas while simultaneously taking part in the discussion. This did not always allow them to contribute fully to the conversations, as they were simultaneously writing down their ideas. For future projects, it could be strategic to plan specific times for each sub-activity during the workshop, allowing all actors to contribute and engage fully in the discussions.

Structure of the topic guide and exercises used

In this section, each part of the final version of the topic guide is evaluated separately. The positive feedback, as well as aspects that need improvement are described and identified to assess the impact of the different activities carried out during the workshops.

1.1. Home diaries

The feedback collected from the debriefings with the moderators reflected the usefulness of the home diary activity. The level of public awareness concerning the topics is considerably low. The home task helped the participants **t**o get acquainted with the topic of FCMs and relate to it more easily. It also allowed them to get more familiar with the various themes surrounding the discussion, including the concept of safety, sustainability, hygiene, and information. Overall, there was high engagement with the activity as the participants posted a lot of pictures, completed all the activities on the platform and brought their food contact material to the workshop. In Finland, it also raised awareness regarding the number of plastics the participants had at home.

There was some negative feedback from participants and moderators regarding the translations of activities on the platform as well as relating to some questions that felt repetitive at times. Yet, overall, moderators perceived the activity as effective, and it promoted more interesting and engaging discussions during the workshop.

1.2. Exploring habits, experiences, and attitudes towards FCMs

. Moderators considered the list of concerns provided by the topic guide to be quite in line with the discussion in most countries. The list had a key role in in guiding the participants into the topics to be discussed further on.

The participants were requested to bring one food contact material they have mentioned or photographed in the home diary activity; however, the moderators felt this section therefore not allowing all participants to discuss and explain their choices of FCM brought. Moderators mentioned they didn't have enough time to

make this activity beneficial for the participants by absorbing their feedback effectively and making participants feel that they had done a good job.

1.3. Case studies

The case studies' activities accentuated different trends across countries. Generally, the activity fostered debates and a higher level of engagement amongst participants. The interesting aspect highlighted by this activity was the lack of knowledge on food contact materials and their usage in day-to-day life by the general public.

In Poland, the moderators suggested that the participants' lack of knowledge on the topic of FCM led to group think. The participants felt ashamed of their lack of knowledge on the subject, they agreed with anything said and could not relate to the exercises. In France, the participants seemed to feel frustrated about the lack of clarity of the information provided to the public. This was particularly visible with the case study on recycling processes, what is organic-based, compostable, and how to dispose of packaging.

1.4. Expert cards

Expert cards were presented during the coffee break. The cards were placed around the room for participants to read during their break. The way participants interacted with the expert cards was different between countries, although similar concerns came up when participants returned to the group (glass vs. plastic, active materials, lack of knowledge and information available to citizens).

Generally, the participants felt overwhelmed with information at this point of the workshop. They were not able to take in the relevant facts for the following activities and take a break simultaneously. Moderators also noted providing more information induced more questions around the topic. In Greece and Poland, the moderators said that the participants were not given enough time to process the new information and could therefore not decide what they believed in and how it related to their usage and habits with FCMs. On the other hand, in Finland, the moderators noticed that the expert cards did not provide overwhelmingly new information to the participants.

1.5. Thematic deep dive – Booths

The thematic deep dive section of the topic guide was the longest in terms of time and most technical in terms of content. The discussions were divided into three key themes – safety/hygiene, sustainability, and trade-offs between safety/hygiene and sustainability. The goal of this activity was to share personal feedback and experience to improve the current status on FCMs.

This activity proved to be successful in showing clear theme preferences across countries either on sustainability or safety regarding FCMs. For instance, in Finland, as the participants seem to be generally quite trusting in their government and authorities to produce and sell safe FCMs, they were more engaged in the sustainability discussions. In Germany, the participants had a similar reaction. However, German participants mentioned their trust in the safety of FCMs and the products sold across the European Union.

Finally, the objective of incorporating case studies and specific examples of either safety or sustainability was to make the issues at stakes more relatable to participants. With the help of the case studies presented, the moderators noted a high engagement in this section of the workshop, as well as a significant number of personal contributions and personal experiences from the participants. It was, however, observed that in some countries the examples/case studies to discuss were not adapted to the country's context. For instance, Greece does not have a deposit system and participants there found it difficult to imagine their behaviours and preferences in that instance.

1.6. Co-creation exercise

The co-creation exercise was a key piece of the topic guide, and it was allocated 45 minutes. This activity was to bring all the topics covered in the study into one creative activity that would enable participants to

express their concerns while being creative about potential solutions. Participants were told to think about current FCM labels and asked to redesign them or create new ones.

This was the final activity and it tended to have a shorter amount of time than initially planned. The insights harvested in this section were not negligible, but due to how it was organised the insights varied between groups. Indeed, there was some confusion in the groups as to what the task was, but nonetheless fruitful discussion arose from this stimulus. Some groups aimed at revisiting the existing labels they were presented, others looked to invent new ones that were not on the list. In the groups where the focus was on existing labels the insights were less rich. The research team found it was very complicated for some participants to come up collectively with a new label as the participants had different information needs. It was then quite difficult to have the group members work together and align on one objective. In hindsight participants should be made to work independently instead of in groups.

It is also worth mentioning that the home diary activity got participants thinking prior to the workshop and made them more aware of the current label situation. Additionally, the FCMs that the citizens brought along were also very useful as prompts to use during the activity.

The outcome successfully demonstrated what citizens are most concerned about and uncovered some interesting ideas for FCM labels. The individual differences in concerns were highlighted by this activity with, for example, some respondents solely focusing on labels informing on how to dispose of the material while others focused on safety related information.

1.7. Wrap up activity

Unfortunately, the wrap up activity was often discarded for lack of time. In the groups where this one took place it was useful to gather the aspects of information that are the most important to them. Other groups used the opportunity to ask some final questions or remarks about the organisation.

The feedback process

The assessment of this project's efficiency and efficacy relies on three main feedback channels: feedback surveys sent to participants and moderators, debriefing meetings held with different stakeholders and the research team's internal meeting and brainstorming sessions. Each channel is described in the following section and the workplan detailing each step can be found in the **table – Updated workplan.**

1.1. Feedback surveys

The research team designed two short surveys with a mix of closed and open-ended questions gathering feedback from both participants and moderators. The surveys were aimed at collecting the extent to which participants and moderators were satisfied with the workshop. More specifically their feedback on the home diary activity, the logistics of the workshop and the content the workshops. The surveys were shared with local teams following the focus groups, in local language, to be shared among moderators and participants.

The following questions were asked in the participants' survey:

- *To what extent I am satisfied with the home diary activity using the following scale (home diary is the activity you did before joining the workshop).*
- *To what extent I am satisfied with the full workshop (by workshop we mean the 3h activity at our facilities).*
- *In your words, could you give us your general impressions of the organisation of this study (timings, interactions with staff, facilities, etc…).*
- *In your words, could you give us your general thoughts about the content of this study (the activities, the discussions, the material/visuals, etc..).*

The following questions were asked in the moderators' survey:

- *To what extent satisfied with the full workshop (by workshop we mean the 3h activity at our facilities).*

– *In your words, could you give us your general impression of what found a success in this study?*

– *In your words, could you give us your general thoughts about what you found to be less successful and should be changed? (Think about the activities, the discussions, the material/visuals, etc..).*

The response rate to the surveys was well under what the research team expected. As mentioned, the participants' survey, gathered 22 out of the 90 citizens that participated. The moderators' survey collected five responses of the 18 moderators involve across the countries. Although the data collected via the feedback surveys generally confirmed what has been discussed during the debriefings, the response rate should be improved for future projects.

The low response rate is mainly due to a lack of anticipation from the research team. Indeed, the surveys were sent by email more than five days after the focus groups. At the time the research team chose to focus on the safe reception of transcripts/recordings from the local offices along with the analysis plan rather than the feedback surveys. In the future, the surveys should be sent out to local offices along with the debriefing session invitations in order to allow enough time for participants and moderators to answer. This would also ensure that the subject is fresh in their minds.

1.2. Debriefing sessions

The one-hour long debriefing sessions were organised by pairing local offices. The sessions meant to collect:

– Moderators' first impressions,

– General feedback on the discussions that took place,

– The tone and topic engagement,

– How useful the home diaries were for the participants' preparation,

– Top concerns raised during the workshops and,

– Efficacy of the expert cards.

The discussion between the paired countries allowed the exchange of perspectives and differences in experiences. The comparison happened to be fruitful to highlight interesting elements of discussion within each workshop. It also allowed to confirm which section worked well across countries and how each countries' specificities impacted the study.

The debriefing sessions with local offices were also useful to share important information related to logistics, such as deliverables guidelines and deadlines. Finally, the research team reminded the importance of receiving verbatim transcripts with the anonymised identifiers of participants. Nevertheless, the research team faced some important delays in the reception of transcripts from some local offices due to the verbatim aspect or the missing identifiers. Due to these delays, the debriefing sessions happened to be extremely useful for drafting the initial outline of the report and in having an overall idea of the top concerns and engaging topics across countries.

1.3. Research team and client debriefing

The research team invited the client to a debriefing meeting at the end of the fieldwork phase. The session was meant to collect client feedback and impressions of the workshops they had observed (e.g., to what extent they were satisfied with the data collected and the direction the discussions took, or the home task prior to the workshop), as well as the efficacy of the topic guide changes made following the pilot in Malta. The meeting was also used to collect first-hand comments and guidelines for the final report outline.

After the debriefs with all local offices and with the client, the research team held an internal meeting to assess the most and the less prevalent insights. The team discussed the draft outline, the first findings and the coding structure to be used in the transcripts' analysis. This meeting allowed the research team to coordinate the analysis and reporting phase but also to align views on the narrative of the report.

Finally, two weeks after the client's debriefing, the research team organised a meeting with the health expert, Ms. Meera Cush, to exchange on the main results and recommendations. Ms. Cush's role was crucial to present the research team with the legislative aspects of the food contact materials' regulations. She was able to comment on the first main results the team had collected at this stage. This meeting allowed the team to gather additional guidance on the conclusions and recommendations section of the final report. The expert provided relevant information regarding previous efforts to regulate the materials discussed at EU level. Additionally, the exert was able to enlighten the research team on level of danger of specific practices mentioned by citizens during the focus groups. This allowed the research team to correctly report on citizen behaviour in terms of health and safety identifying the safe from the unsafe behaviour.

GETTING IN TOUCH WITH THE EU

In person

All over the European Union there are hundreds of Europe Direct information centres. You can find the address of the centre nearest you at: https://europa.eu/european-union/contact_en

On the phone or by email

Europe Direct is a service that answers your questions about the European Union. You can contact this service:

- by freephone: 00 800 6 7 8 9 10 11 (certain operators may charge for these calls),

- at the following standard number: +32 22999696, or

- by electronic mail via: https://europa.eu/european-union/contact_en

FINDING INFORMATION ABOUT THE EU

Online

Information about the European Union in all the official languages of the EU is available on the Europa website at: https://europa.eu/european-union/index_en

EU publications

You can download or order free and priced EU publications from EU Bookshop at: https://publications.europa.eu/en/publications. Multiple copies of free publications may be obtained by contacting Europe Direct or your local information centre (see https://europa.eu/european-union/contact

EW-05-23-366-EN-N

doi: 10.2875/41315
ISBN: 978-92-68-07890-7