Deliverable D4.2

National Reports – Citizen Panels

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1. Introduction

In the recent years, there have been numerous efforts to promote public engagement on the European, as well as the national research and innovation landscape. Currently, being part of the Responsible Research and Innovation (RRI) paradigm, public engagement is given a renewed impetus to contribute to bringing citizens' voices into scientific discourses, building a bridge between science and society and establishing new standards in the research and innovation (R&I) domain. To this end, however, more in-depth understanding is needed in terms of who the 'public' is, what their expectations are, how they see their role in the field of R&I, what motivates them to participate in public engagement initiatives and which the factors that constrain their participation are.

The PROSO project focuses on two types of actors – third sector organisations and non-organised citizens – and investigates their views, motivations and perceived barriers for being more actively engaged in R&I. A major effort within PROSO is answering the above questions through organising a series of meetings with citizens in 5 countries (Austria, Bulgaria, Germany, Portugal and the UK). In each country, two citizen panel meetings took place in October/November 2016 and in February 2017. The objectives of these meetings essentially were: i) to generate insights into the barriers and incentives for citizens to engage with R&I, from the citizens' perspectives; ii) to understand what citizens' views are on a number of challenges for citizen engagement, as well as on the policy and practice options, identified as a response to these challenges.

1.1   About this deliverable

This deliverable presents the national-level reports on the results of the first and second citizen panel meetings in the 5 participating countries. The qualitative data gathered in these reports will be analysed by the PROSO partners to achieve the above stated objectives.

The findings from the analysis of the national reports will be presented in PROSO Deliverable 4.3 "Synthesis report", which will be published by the end of May 2017. The synthesis report will feed into the major PROSO deliverable and contribution for developing policy and governance for the advancement of societal engagement under the terms of RRI – the PROSO Policy and Practice Guide.

1.2   The PROSO Citizen Panel Process

An elaborate methodology[1] (illustrated below) was developed in the frame of PROSO to elicit citizens' views in regard to the incentives and barriers for citizen engagement and the potential approaches to overcome the identified challenges for engagement.

The methodology consists of the following three stages:

1) **First Citizen Panel Meetings** were organised in October/November 2016 in the above mentioned countries. Citizens discussed their views on different public engagement opportunities in the fields within the focus of PROSO, namely bio-economy, nanotechnology and food & health.

2) **A Joint Expert Workshop** was organised in early December 2016 in Sofia, Bulgaria, to analyse the results of the first national citizen panel meetings and discuss approaches for fostering public engagement, taking into account citizens' perspectives.

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[1] See PROSO Deliverable 4.1 "Methodology Citizen Panels" at: http://www.proso-project.eu/publications/

3) **Second Citizen Panel Meetings** were organised in February 2017 in the 5 countries, where citizens discussed challenges for citizen engagement, as identified from the results of the first citizen panel meetings and possible policy and practice approaches to overcome these challenges. They also had the chance to develop messages to the engagement stakeholders on how public engagement should be fostered. These messages will be broadcasted to European and national level engagement stakeholders at a PROSO conference in June 2017.

Oct/Nov 2016	*1-2 Dec 2016*	*Feb 2017*	*May 2017*
First National Citizen Panel Meetings	**Expert workshop in Sofia, Bulgaria**	**Second National Citizen Panel Meetings**	**Synthesis report**

In each of the five countries the responsible partners recruited 15-18 citizens using selection criteria which aimed to ensure a wide diversity represented in the panels, especially in terms of gender, age, level of education and occupation. The same citizens took part in the two national-level meetings.
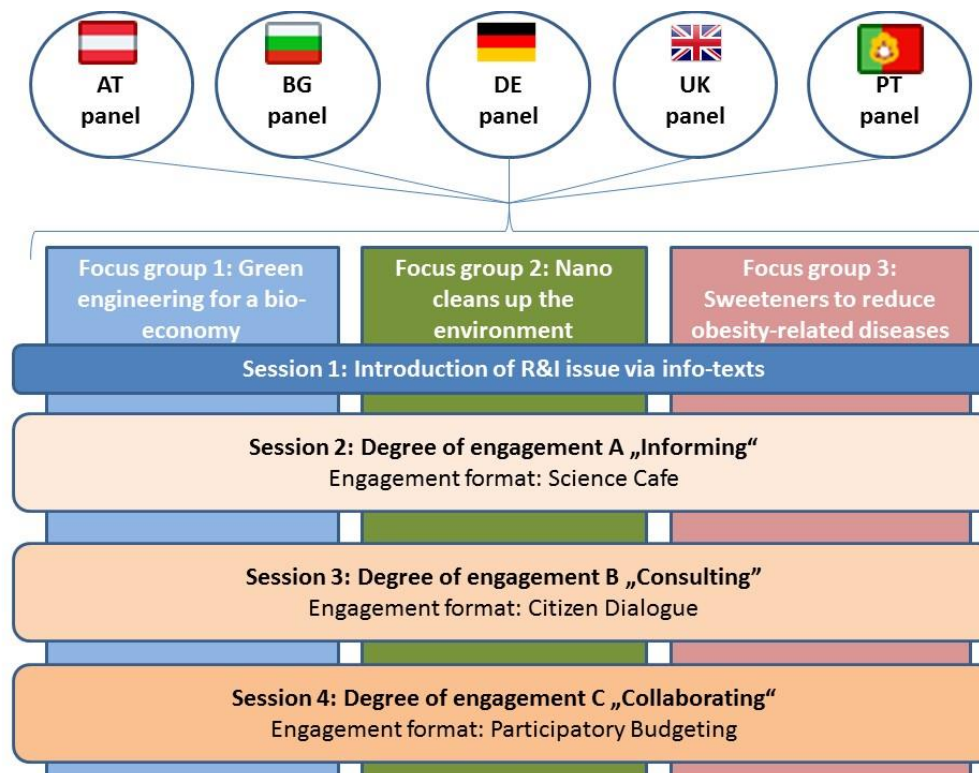
1.2.1   First citizen panel meetings

In order to understand whether and to what extent citizens' motivations and constraints to participate in engagement activities are affected by the *degree of citizen engagement*, or in other words, by the level of responsibility prescribed to the citizens, the potential for impact of citizens' inputs on the policy and research outcomes, and the level of commitment required by citizens, the participants at the citizen panels discussed their views on three formats of public engagement which require different degree of citizen involvement - Science Café, Citizen Dialogue and Citizen Evaluation Board. These formats were introduced to citizens in three consecutive sessions via fictitious invitation letters.

- **Science Café** *(illustrating degree of engagement 'Informing')* – the major objective is to inform and/or educate citizens. The information goes mainly from researchers/policy makers/funding institutions to the citizens (or other relevant stakeholders). There is no specific mechanism to handle the feedback provided by citizens.
- **Citizen Dialogue** *(illustrating degree of engagement 'Consulting')* – the major objective is to facilitate group deliberation and consultation on a certain issue where the outcome of the consultation may have an impact on decision-making. Information is exchanged between the initiator of the engagement activity (e.g. researchers, policy makers) and the involved participants (e.g. citizens or other stakeholders)*.
- **Citizen Evaluation Board** *(based on Participatory Budgeting, illustrating degree of engagement 'Collaborating')* – the objective is to assign citizens a clear role in the process of decision-making on R&I (in the particular case – on funding), while not necessarily giving them a decision-making power.

The citizen panel methodology was designed to also seek insights into the role that the *concrete research area* and the *engagement culture* play in shaping the motivations of citizens to take part in a concrete engagement activity.

The group discussions were organised as focus groups, with each panel featuring a series of 3, each responding to the same set of questions from the point of view of a different research area. The particular research areas were bio-economy, nanotechnology and food and health.

A graphic illustration of the process

1.2.2   Second citizen panel meetings

In preparing for the second citizen panel meetings, partners used the results of the first panel meetings to identify nationally-relevant challenges for public participation. They also created policy and practice options (PPOs), which could contribute to addressing these challenges. These PPOs were based on: i) the input of the PROSO expert workshop in Sofia; ii) partners desk research, previous knowledge and experience in the field of public engagement.

The participants at each panel meeting deliberated in small groups about the ethical, practical and other concerns associated with the challenges and the possible PPOs to address them, as identified and presented to them by the responsible partners. Citizens were also encouraged to propose new ways to address these challenges. Following was a session for developing messages about improved policy and practice vis-a-vis public engagement with science. These messages will be streamed at the PROSO conference in Brussels on 19 June 2017 in order to bring citizens' voices to the front in discussing public engagement in R&I.

The results of these meetings will be analysed and further discussed by PROSO partners and engagement stakeholders and used to formulate policy and practice options, which respond to citizens' concerns, incentives and perceived barriers for public engagement. These will be included in the Policy and Practice Guide that will be developed in the frame of the PROSO project.

2. National country reports

2.1 Austria

Authors: Partner OeAW (Anja Bauer, Alexander Bogner and Daniela Fuchs; Contributers: Rosa Friesacher, Rosa and Theres Friesacher)

2.1.1 *First citizen panel*

FOCUS GROUP 1

Table moderator name	*Anja Bauer*
Note taker name	*Michaela Scheriau*
Number of participants	*6*
Sub-domain discussed by the group	*Synthetic Biology / Bio-economy*

Group session 1 – Warm up

Q1. What experience do participants have with public engagement so far?

Brief Summary/Key Points	Notable Quotes
Experiences with **engagement formats:** The categories "information and discussion" and "volunteering and engaging" rank highest (5 points). Participants, for example, engage in volunteering organisations (e.g. charity, animal rights or for rent decrease) or have been active in the municipal council for environment. "Consultation and co-shaping" (4 points) as well "protests and mobilisation" (3 points) are also well-known engagement forms. One participant recalled a recent participation in her first flash mob as an inspiring experience. Participants have almost no experiences in regard to "research and development", and if they do, it relates to their capacity as a student (1 point).	*"I like helping, I like having people around me."*
Participants named a range of **motifs** for their engagement: to help others, to spent their free time in a meaningful way and with others (being in retirement), personal concerns (e.g. in regard to the housing situation) and to serve as a corrective for research and political processes that are going into the "wrong" direction or are too detached from citizens. Participants stressed that it is important to not only complain about something, but to do something. Participants emphasised responsibility towards the community and the future and hoped that science would become more grounded when including citizen perspectives.	*"It is not enough to be against something, you have to do something."* *"I like the feeling to have done something."* *"Everyone has responsibility for the community."* *"What is missing in science is seeing the bigger picture."*
Participants also reflected on **challenges** of citizen engagement, namely the discrepancy between protests and own behaviour (with regard to environmental issues) and the Not-in-my-backyard-character (NIMBY) of protests (in regard to wind energy, highways, etc.).	*"The biggest problem with citizen engagement is the 'Floriani-attitude'". [NIMBY]*

Q2. What motivates the participants to take part in this specific event and methodology?

Brief Summary/Key Points	Notable Quotes
Participants stated a general interest in public engagement activities and research related issues. Two participants had previously made positive experiences with such kind of events, i.e. dialogue forums. They appreciated the positive atmosphere and the opportunity to share their opinions and to learn about other opinions. Hence participants were interested in the opinions of others also regarding this event. The topic of this citizen panel sounded interesting. One participant mentioned the compensation as a motivation, because she intends to donate the money. One participant again emphasised that he aims to serve as a corrective to politics or narrow science.	*"It was a very positive day."* [the previous event] *"I thought this sounds exciting."* *"I am generally interested in research."* *"It is not a bad thing, if sometimes people without specialised knowledge can say 'I want this' or 'I don't want this."*

Q3. What are the participants' expectations and concerns related to the event and methodology?

Brief Summary/Key Points	Notable Quotes
Expectations: Participants expected that their opinions matter, are taken seriously. In the longer run, one participant hoped for more continuous and regular engagement processes, particularly in regard to (EU) policy-making. **Concerns:** Participants were strongly concerned that the event won't have any effects, only serves as a reassurance from the side of the EU or that the results end up in the drawer. Another concern was that the discussions would be misrepresented when analysed and interpreted by experts. In this regard the participants largely appreciated the opportunity to have a second meeting to discuss the expert statements. Beyond that participants asked for an update on the use of the results also further on, e.g. in a year or two.	*"I hope it is not a pseudo activity by the EU to make people believe that something is done."* *"I like that there is a feedback round."*

Group session 2: Introduction to 'their' sub-domain of R&I

Q4. How knowledgeable participants consider themselves to be in this particular area of research?

Brief Summary/Key Points	Notable Quotes
Before reading the information text, participants shared their associations with synthetic biology: genetic engineering, IVF, artificial culturing of something. Some participants had no ideas what synthetic biology could be. Overall participants were not familiar with the term or concept of synthetic biology prior to reading the info text, yet afterwards easily related to it by associating it with gene technology. Two participants were quite knowledgeable about the technical aspects of energy production, particularly hydrogen production, and explained details to other participants. All participants, to varying degrees, had some knowledge about the challenge of	

sustainable energy production and respective technical and social solutions (e.g. renewable energy production or energy savings).	

Q5. How relevant do they think this issue is to their everyday life as of nowadays? What about the future?

Brief Summary/Key Points	Notable Quotes
Participants did not articulate a strong relevance of synthetic biology for their everyday life now or in the future, with the exception of a (unanimously) felt strong personal objection of the technology. With regard to the societal challenge of sustainable energy production – participants more strongly related to their own life, having installed solar panels or having acquaintances with electro cars.	*"On the roof of my house there are 10 KW."* [solar panels]

Q6. How important do they think this issue is for the society as a whole? Why?

Brief Summary/Key Points	Notable Quotes
Most participants felt that sustainable energy production is a highly relevant societal issue. One participant highlighted that Austria has already quite sustainable power production with a high share of hydro energy. While participants were in favour of more sustainable energy production they vividly questioned and strongly opposed the contribution (and therewith relevance) of the presented example of altering micro-organisms for hydrogen production. Participants immediately asked for or introduced their own alternatives, including other technological options (electro cars, natural gas) and behavioural changes (energy savings). One participant mentioned that researchers should try to find natural bacteria which could fit for such purposes instead of genetically manipulating bacteria. The presented example of synthetic biology became mainly relevant as an area of concern and of (unknown and uncontrolled) risks. They stressed that the risks should be considered more seriously. In this regard one participant reflected about credibility of and trust in science and experts and their (potential) reassurance of safety. Participants partly questioned the motivations behind this research, suspecting them to be of monetary nature only. In more general terms participants discussed about the question in how far humans should interfere in nature and what kind of or level of 'artificiality' is acceptable. Opinions varied on this question, with some participants promoting "naturality" and others highlighting benefits of scientific progress (e.g. IVF, computers). Some participants were also more open to gene technology in regard to human health, yet, again, all agreed on their opposition towards the altering of bacteria for energy production. Participants emphasised that it is an ethical issues and citizens should become involved in its discussion.	*"The problem is not energy production but consumption."* *"The environmental issue is extremely important for me, but I wouldn't solve it in this way."* *"What are the alternatives?"* *"If we change cells, maybe something like Ebola will happen."* *"I hope it will not be kept a secret if there is a high risk that ecosystems will be destroyed.* *"* *"Nobody can tell me what happens when it escapes the laboratory."*

With regard to the future participants demanded the substitution of fossil fuels. In regards to synthetic biology, participants felt rather pessimistic – that it cannot be prevented if it brings profits, yet they did not see a positive societal potential in the technology.	

Group session 3: Category of engagement: Science Café

Q7. What are the motivations of citizens to take part in the Science Café?

Brief Summary/Key Points	Notable Quotes
Some participants straightaway stated their willingness to participate in the science café, the majority, however, was more reluctant and some participants stated that they probably would not attend the event. Motivations for participating mainly revolved around their interest in the issue and a general willingness to learn about new issues or research in general. If they wouldn't have heard about the issue before, some participants would inform in advance and then decide whether or not the issue is interesting enough to participate. The invitation conveyed a relaxed atmosphere of the events, indicated by wine and sandwich and the absence of titles in the names of the speakers [in Austria it is still very common to name titles, hence participants talked some time about their absence]. Still participants felt that the talk would be more informing than entertaining. Participants mainly appreciated this focus on information and were more sceptical of entertaining concepts (such as "Science Busters" - a popular science show in Austria). Some participants also felt they could attend the event as lay people and still understand it. Moreover, some participants looked forward to listen to the perspective of the speakers and other attendants at the events.	*"I would think that is not overly scientific; there is a chance that I will understand it."* *"I want to understand what it is about and I can only understand it when I collect as much information as possible."* *"I find it interesting; I can listen to different viewpoints."* *"I think science does not have to be serious, it can be relaxed, but If I attend the event I want to have information and not such superficial information I could google in one minute."*

Q8. What holds them back from doing so? What are their concerns and perceived obstacles for participation? What could change their position?

Brief Summary/Key Points	Notable Quotes
A main reason to not participate was that participants felt the issue was not that 'burning' for them. Some participants stated that they get a lot of invitations to similar events and have to select among them, ultimately indicating that the presented topic would be less attractive for them. One participant had the feeling that if he learns about many (new) topics, there would be a trade off with the specialised knowledge he aims for in his studies. Another participant stated that he generally likes to participate in events and discussion if he already has knowledge about an issue. Participants further strongly uttered concerns about the purpose of the event. The invitation was not clear enough in what the event aims to achieve and what contributions they could make. At the	*"I have so many possibilities to go somewhere – this would not be the event that interests me the most."* *"I am missing that it is clearly written 'with your participation you can influence science'."* *"I don't feel that I as a layperson can attend the event, ask a question and*

end participants felt it was more about information and that they could not really have an influence on the researchers. For many participants this focus on information was acceptable, others wished for more.	*therewith influence the research – maybe motivate, maybe emphasise ethics, but offering a pivotal thought - that is unthinkable.”*
Some participants felt that titles would give more authority to the speakers [yet as indicated above – participants were divided on this issue]. Participants would find the event more attractive if it had speakers with opposing viewpoints on synthetic biology – proponent and opponent. While the biologist was clearly identified as proponent, participants were not sure about the position and role of the philosopher and argued for a more obvious opponent.	*“A declared opponent would add zest.”* *“There have been talks [the participant attended] that I just left because they were incomprehensible.”*
One participant stated that the time of 90 minutes was too short, others found the duration adequate for an information event, not for serious discussions.	
Lastly, while participants preferred information over entertainment (see above) they also stated that the talks should not be too academic but understandable for normal people. In this regard participants also emphasised that the speakers should clearly explain why the issue is relevant for the citizens.	

Q9. What do participants see as possible benefits for them personally/the wider public/other stakeholder groups (incl. researchers/policy-makers/other decision-makers)?

Brief Summary/Key Points	Notable Quotes
Personal benefit: getting information about an issue that is of interest for them or they so far do not know much about.	*“Maybe they then pick up something [information]”*
Wider public: getting information about the issue and current research, have the possibility to form an opinion. Participants speculated that wine and sandwich could be the main motivations for citizens to attend the event. Some participants criticised this incentive and attitude and feared that this would attract 'the wrong kind of people', i.e. those that only want to eat and drink; others felt it is a good way to get people interested.	*“Maybe they advertise their new book.”* *“getting out of the laboratory”*
Researchers: Some participants speculated or even already had the experience that such events were used by researchers to promote their books. Other participants thought that researchers are genuinely interested in communicating their research to the public and search for new ways of doing so.	
Organisers: One participant assumed that organisers get money for organising such events.	

Group session 4: Category of engagement: Citizen Dialogue

Q10. What are the motivations of citizens to take part in the presented engagement opportunities?

Brief Summary/Key Points	Notable Quotes
For most participants the citizen dialogue was more attractive than the science café and participants agreed on their willingness	

Brief Summary/Key Points	Notable Quotes
to attend the dialogue. Particularly, participants felt that the purpose of the event is much clearer; they got an idea why the event is held and how they could contribute. In this context the science café was seen as an adequate event to prepare the citizen dialogue. One participant stated that they would obviously be interested in attending a citizen dialogue since they are currently attending a similar event. Participants were divided on the importance of the suggested compensation. For some participants it was important that there is some kind of compensation, however without stating the amount, one participant had quite clear 'rules' referring to €10/hour; for other participants compensations was not important at all, if the theme of the dialogue is of interest for them. The participants stated that the organiser is important to guarantee credibility and objectivity. The participants would trust the university as organisers (as suggested in the letter). Other credible organisers are the Academy of Sciences and also the ministry (not specified which). Participants wouldn't trust an event organised by firms. Participants liked the format of the citizen dialogue; the duration of the event was seen adequate.	*"The 'why' is really well explained in the letter, this is more appealing for me."* *"The compensation would attract me, but it wouldn't be severe if it was less than I wanted if the event was a good experience."* *"Information, discussion and consolidation – then there is really a result."*

Q11. What holds them back from doing so? What are their concerns and perceived obstacles for participation? What could change their position?

Brief Summary/Key Points	Notable Quotes
Though participants were willing to participate in the citizen dialogue, they suggested some concerns and ideas of improvements: - Timing: for students the suggested date in January would not be possible as this is exam time. - Participants wished that the invitation letter contained the names of the experts that will be present at the citizen dialogue. This would give them the possibility to inform in advance and also to assess the credibility of the event. - Some participants were concerned that the citizen dialogue as a single events with only 20 participants would be too small and hence of little impact. They stated that the event should be repeated in Austria with other samples of participants. Moreover participants suggested having similar dialogue forums across Europe. - One participant didn't like the gender-wise correctly written style of the invitation letter, another participant defended our approach.	*"It would be much more interesting if it involved more countries/Europe … It is important that this does not only happen here but elsewhere as well"* *"Are 40 [20] people really significant? It is a really small part of Austria"*

Q12. What do participants see as possible benefits for them personally/the wider public/other stakeholder groups (incl. researchers/policy-makers/other decision-makers)?

Brief Summary/Key Points	Notable Quotes

Personal: Participants had the feeling that they could really have a say and influence with this events. They expected to get informed but also to inform politicians about their opinion. **Politics**: Participants hoped for politicians to learn about the opinions of the citizens and to adjust their decisions accordingly. In this regard some participants suggested including the politicians already in the citizen dialogue and not only informing them at the end.	*"Politicians should not only be informed by lobbyists"*

Group session 5: Category of engagement: Citizen Evaluation Board

Q13. What are the motivations of citizens to take part in the presented engagement opportunities?

Brief Summary/Key Points	Notable Quotes
Participants generally liked the idea of the evaluation board and often compared it to a citizen jury in Austria's juridical system ('Schöffengericht'). However, they were not immediately enthusiastic and unconditionally willing to participant and rather raised many questions concerning the concrete procedure (see also below). Participants liked about the evaluation board that it is giving a lot of responsibilities to participants, offers a real opportunity to inform decisions and seems to have an impact. In this regard the participants strongly supported the advisory role of the board and did not wish to take the final decisions on which project gets funded and which not. Moreover, participants liked that the evaluation board offers the opportunity to give feedback to the researchers rather than giving only a strict 'yes' or 'no'.	*"A lot of responsibility – that can be good and that can be bad."* *"I like it when I can have a say, when I can influence decisions, when I can take responsibility."*

Q14. What holds them back from doing so? What are their concerns and perceived obstacles for participation? What could change their position?

Brief Summary/Key Points	Notable Quotes
While participants liked the concept of the evaluation board they were also apprehensive and discussed the following main concerns: - **Knowledge:** Participants strongly questioned whether they themselves and the randomly selected participants of the board would be knowledgeable enough to take part in the decision-making. Some participants felt that they themselves were not competent enough and also demanded that the initial questions asked to participants [suggested in the letter] should not only concern their socio-demographic features but also their knowledge of the issue. Other participants thought that previous knowledge is less important, comparing the board to a citizen jury, or they suggested that citizens should primarily discuss ethical questions rather than factual questions. - **Responsibility**: While some participants appreciated the responsibility that the evaluation board brings, other participants felt it was "too much responsibility". They	*"I don't think that I am capable of it. That is too much responsibility."* *"I don't think that I know enough to take responsibility. The problem is when you reject something that could be really important and interesting, only because you don't like it for some reason. I feel I am not competent enough."* *"20 randomly selected people join the board where they can*

didn't want to take responsibility for decisions that either approve of research that might have negative consequences or reject research that could be an important scientific or societal advancement. - **Timing:** Participants acknowledged that the board takes a lot of time, yet this was not a major obstacle. - **Participants**: The voluntary participation in the board was seen as a further potential challenge since it attracts particular people who have an interest or stake in the issue. Moreover, the problem of early withdrawal from the board. - **Issue framing**: Participants also recognised the thematic focus on synthetic biology as a potential challenge and suggested an evaluation board with a broader view and decision power on research, in which synthetic biology could be one research option. This would give them a better opportunity to influence the direction and focus of research.	*decide on things about which they don't have a clue and two years later another 20 people join."*

Q15. What do participants see as possible benefits for them personally/the wider public/other stakeholder groups (incl. researchers/policy-makers/other decision-makers)?

Brief Summary/Key Points	Notable Quotes
Participants expected for them **personally t**hat the board gives them responsibility, the opportunity to have a say, to change something and to have some control over important issues. In the same vein, participants stated that the board provides the **wider public**/other citizens with greater responsibility. Yet participants were not sure whether this was really wanted by the majority of people. **Researchers** would benefit from the board by getting feedback from the public and aligning their research to citizens' needs, particularly when ethical issues are at play. The evaluation board could broaden the view of (supposedly narrowly focused) scientists. Participants also thought that science currently too often follows economic rationales. In this regard the evaluation board could be a corrective. Yet, participants also discussed some unintended consequences for science. They particularly feared that in the evaluation board good presenters are favoured over good science. The board could lead to a situation in which those researchers are funded who can present themselves best but don't have necessarily the best research proposal.	*„I think it is better to say afterwards, ,o.k. I decided incorrectly but at least I have tried to change or improve something."* *"I think, people [other citizens] feel comfortable in not having to do something but being able to complain – here [referring to the board] they don't have an excuse anymore."* *"They [scientists] often don't see things that people who are not involved see."* *"A deadly boring presentation could save the world."*

Group session 6: Comparisons of the three forms of engagement

Q16. In a comparative perspective, which opportunity is most/least attracting to participants and why?

Brief Summary/Key Points	Notable Quotes

Overall participants liked the citizen dialogue (second opportunity) the most and would like to participate in it. The third opportunity – evaluation board- also ranked high. Participants wished for the existence for such a board but their own willingness to participate was less compared to the dialogue. With both, the dialogue and the evaluation board, participants felt to have an opportunity to co-decide on important issues. Only one participant preferred the science café over all other forms, because he felt that this format resonated best with his (lack of) knowledge on the issue. Participants strongly favoured a combination or even sequence of the events, starting with the Science Café as an information event that comes before the other two.	14

Q17. Which opportunity brings most benefits to the different stakeholder groups (the public at large, researchers, policy-makers/politicians), etc.?

Brief Summary/Key Points	Notable Quotes
One of the participants stated that the first format would bring the most benefit for politicians, since it appears as a superficial event, it could - so to say - soothe the people´s bad mood against synthetic biology (gene engineering) → (this argument appears as a very sceptical and discontented attitude against the Austrian politics). Other participants also conceived the two other formats as important for politicians and researchers; especially the third format could be interesting and crucial for researchers (see above).	

FOCUS GROUP 2

Table moderator name	*Daniela Fuchs*
Note taker name	*Theres Friesacher*
Number of participants	*6*
Sub-domain discussed by the group	*Nanotechnology*

Group session 1 – Warm up

Q1. What experience do participants have with public engagement so far?

Brief Summary/Key Points	Notable Quotes
In general, all participants have made at least one experience with public engagement so far, whereas the types of engagement are very diverse. Nevertheless, some of the participants prefer petitions and opinion polls as a quick and commode way to take part in public engagement. A few participants mentioned a conflict between their job and other, more time-consuming types of engagement. The number of participants, who take part in more sophisticated ways of engagement regularly, is significantly lower. Protesting and engagement in diverse organisations, primarily in social or political fields, as well as active participation in the research and scientific process, such as summer-schools or open-science-labs, were mentioned in this context. Only one participant has explicitly said to have already taken part in citizen panels and discussions. The perceived importance of public engagement varies remarkably between the participants. Two participants seem to be extremely involved in these kinds of events, whereas the rest of the participants showed a more moderate attitude towards this topic.	*"I study microbiology and I have participated in summer schools where you could work in a laboratory without any particular previous knowledge and I have participated in the 'Lange Nacht der Forschung' (long night of research)."* *"In general, I participate in opinion polling and petitions."*

Q2. What motivates the participants to take part in this specific event and methodology?

Brief Summary/Key Points	Notable Quotes
One of the participants' main reasons for taking part in specific events concerning public engagement is the personal interest in the discussed field and the possibility of experiencing new aspects of scientific, economic and political topics. One participant claimed that protecting the environment and endangered animals is the main cause for being interested in diverse petitions in this context. Another motivation is that many of the participants seem to be unhappy with the limited opportunities to influence decision-making, be it in industry or politics. Most participants wish to be more involved in decision-making processes referring not only to social and political topics, but also to scientific topics. The participants agreed that they surely wouldn't be able to decide about scientific details, but they would like to have at least an influence on the direction of present and future research. They also mentioned several reasons for not participating in public engagement, such as the fear of knowing too little, especially when	*"I am concerned about the fact that banks and industry control the actions of citizens. The opinion of citizens has been marginalised; politicians only think about themselves and the industry only about money. Citizens play a minor role."* *"As citizen you cannot decide about details of research, but you can tell which direction research should take. […] By common*

it comes to scientific topics, or simply having no interest in public engagement. When it comes to active engagement in science, participants found it difficult to become engaged because of a lack of appropriate equipment - e.g. for taking part in biodiversity projects that were given as example for involvement – or an improperly organised information process.	*sense you can often decide if a particular research makes sense or not; there is a lot of research going on that is not necessary. In my opinion, it should be mandatory that citizens have a say which direction research should take."* *"Other people may have more important problems, such as poverty and daily life. [...]I find the indifference of people appalling." (note: upon request - reasons not to participate in general)* *"Citizens should be able to involve themselves from the beginning in research, not only in the end."*

Q3. What are the participants' expectations and concerns related to the event and methodology?

Brief Summary/Key Points	Notable Quotes
All the participants are very interested in the event. Most of them don't seem to have distinct expectations or concerns; they just would like to experience the day. With their participation, most of the participants hope to support a change of the current political situation, so that they are able to have a greater influence on decision-making processes related to scientific, political and social issues in the future.	*"I see that research is more and more dependent on industry and financial capital. There never was a totally independent research, but research needs to be more independent than it is now. [...] I think that (public) participation should become a mandatory part of research or at least state-of-the-art. Many people are dissatisfied because they feel that research and innovation do not care about their opinion."* *"The common good of society should be a criterion for subvention of research projects."* *"That's the problem with economic growths: We need new alternatives to the*

	growth model and we should work on how to increase life quality for as many people as possible."

Group session 2: Introduction to 'their' sub-domain of R&I

Q4. How knowledgeable participants consider themselves to be in this particular area of research?

Brief Summary/Key Points	Notable Quotes
Nanotechnology feels like a field which is rather unknown by the participants, because many of them haven't been in contact with this topic before. A few of the participants were able to name products, which consist partly of nanoparticles, such as sun blockers or car polish but apart from these examples the technology behind this field is completely unknown among the participants.	

Q5. How relevant do they think this issue is to their everyday life as of nowadays? What about the future?

Brief Summary/Key Points	Notable Quotes
Due to the fact that the participants are quite unexperienced in this field, there aren't really strong opinions about the question whether the participants consider this issue relevant to their life. So it can be said that nanotechnology plays a rather minor role in the lives of the participants right now. In contrast, the participants strongly believe that the relevance of this technology will increase dramatically and that its usage will become very relevant in the future.	*"I don't feel ready to decide what to investigate further, because I can't evaluate if research in this area is beneficial in general. But I am for a rather broad approach to science and research since I can't evaluate the results. Just like in this text: there are too many claims I cannot evaluate."* *"I think that the issue will become more and more important in the future. But if nanoparticles can harm bacteria in the soil, it is likely that they also harm cells. The next question for me is if it is possible to filter them out of the drinking water and what happens to human health if this is not possible. If nanoparticles have adverse health effects or are carcinogen, I am against a broad application. I don't think that a substance that*

	could harm the environmental or human health should be applied long-term, but I also find it hard to imagine a future without this technology. But for me, the impacts on health are the most important thing when it comes to application of these substances." *"I don't know where and how titanium is procured."*

Q6. How important do they think this issue is for the society as a whole? Why?

Brief Summary/Key Points	Notable Quotes
The participants think that nanotechnology is definitely a field whose influence will gain dramatically in the future. Based on the concrete example they also agreed that it was very important to consider not only the advantages, but the disadvantages for both nature and humanity, too. They added that instead of choosing a technological approach to fix problems that are caused by fundamental structures of our society, the cause of the original problem should be eliminated. In the case of increasing pollution, the use of nanotechnology application should be accompanied (or even substituted) by a regulation of traffic or industry. The whole discussion had a tendency to become off-topic. For one participant, research should deliver meaningful results for humanity and the earth. This participant strongly stood up for a narrower and more specialised orientation of scientific research that should always be pursued in the most auspicious direction. According to the participant's opinion, researches in fields which do not provide any advantages for humanity should be cut off. In contrast, another participant is convinced that research should not be restricted to a specific area. However, he/she does not consider himself/herself capable of making decisions such as determining the direction of scientific research. A few participants also agree that research should be in general more flexible and that the application of new approaches (e.g. nanotechnology) should be treated like a temporary solution limited to a certain time span until a better solution is found to treat the origin of the problem. This is to prevent an accumulation of problems caused by this first invention.	*"I think the topic (nanotechnology) will become more important for some areas in the future."* *"In the case of environmental pollution, political decision-makers have an important task to do because the application of nanotechnology to reduce pollution does not tackle the problem at its roots. This text depicts nanotechnology as a kind of magic potion, but I am not willing to accept that."* *"We should introduce a certain time frame for innovations and then adapt them adequately or abandon them again while taking into account the gained experiences. Then you avoid a technological lock-in."*

Group session 3: Category of engagement: Science Café

Q7. What are the motivations of citizens to take part in the Science Café?

Brief Summary/Key Points	Notable Quotes
Note of note taker: The participants also discussed about who should be informed about events like the science café. In the end, they	*"It is difficult to get attention to the flyer. I*

agreed that it should be tried to invite as many people as possible, in order to reach and inform most of the citizens.	*would prefer a shorter and more concise version."*
In general, all of the participants think that they would go to the Science Café if they have time mostly because of personal interest. They expect to get basic information about the topic and do not think that any kind of previous knowledge is expected from them. One participant doubted that the audience would be involved in the discussion process in this format: for her/him, the term 'Science Café' suggests an event where citizens are more actively involved than described in the text. A few participants came up with tips for the layout of the flyer to motivate people to come. The main issues, which were brought up in this context, were the usage of brighter and more attractive colours as well as an enlargement of the size of the date and time.	*"The layout and the colours could be more appealing."* *"I am irritated by the word 'café' because the word does not show in the text. I think this event is a panel discussion with subsequent get together rather than a science café."*
In contrast, the participants did not agree on the length of the text. Some would prefer a shorter and more concise text, whereas several think that the length of the text is very suitable for the purpose to inform people about the event and to give a short overview over the topic. There was no consensus whether the choice of the moderator could influence the motivation of people to participate.	*"I would go there because I think environmental issues are important, not so much the technological details."* *"I would expect to get some information in the run of the event."*

Q8. What holds them back from doing so? What are their concerns and perceived obstacles for participation? What could change their position?

Brief Summary/Key Points	Notable Quotes
The participants can imagine several reasons causing people to not taking part in this form of public engagement. Some people simply might not be interested in the topic, perhaps do not feel involved or do not want to have any responsibilities in public fields. Another reason could be that people are afraid of getting overwhelmed or that they are scared of being asked about their opinion, which might be non-existent because of a lack of knowledge or interest. Additionally, many citizens might not have the time to spend their leisure time with public engagement, because of kids or everyday problems. They proposed to avoid the term "science" but use a more common (German) word. The participants made suggestions which could make it easier to integrate people in these kinds of event. Firstly, it is important that the flyer is suitable for the audience targeted. Secondly, examples of everyday situations related to this topic could be mentioned in the text, so that the reader feels more addressed. Additional internet platforms where people can sign up to get information about public engagement events were considered helpful.	*"I think the topic is too detached from people's everyday lives, they don't know anything about it or they think it does not concern them. [..] But it is impossible to do something about a general lack of interest."* *"I would prefer an event with 20 interested people to one with 90 uninterested ones because those 20 will communicate further what they have heard and form an (informal) network on their own."*

Q9. What do participants see as possible benefits for them personally/the wider public/other stakeholder groups (incl. researchers/policy-makers/other decision-makers)?

Brief Summary/Key Points	Notable Quotes
Firstly, one of the mentioned benefits for the participants is that events like the Science Café offer an opportunity to inform themselves. Furthermore, the participant can communicate newly	*"Whenever a group of people discuss, new*

obtained knowledge to friends and relatives to form a network of interested people. Secondly, the participants agree that there is a certain distance between scientists and the wider public, which might be caused by (or which might cause) a respectful or even slightly fearful attitude of people towards science. A dialogue between scientists and people, who are not involved in research processes, could help to narrow the gap between society and science. Thirdly, the participants can also see clear benefits for other stakeholder groups by taking the results of discussions as input for their work (in science, politics and other fields). The participants complained that neither the politics nor science cared about an adequate communication and information process between science and the wider public and that the level of knowledge which the wider public had about current scientific research did not seem to be important in any kind of way.	*approaches will be developed."* *"It should be that way that science meets the citizens, but also gets an echo from a certain target group. Scientists seem to live apart from society and without any contact to other people. I think there would be less fear of scientists who are in contact with society and who are willing to learn from citizens."* *"I don't think that a pre-selection of citizens (note: e.g. by targeted information) would be appropriate, because it would be good to influence as many people as possible by such event. In general, there are not many opportunities to get involved in these issues, thus information should be delivered broadly to avoid an indifferent, uninformed mass."*

Group session 4: Category of engagement: Citizen Dialogue

Q10. What are the motivations of citizens to take part in the presented engagement opportunities?

Brief Summary/Key Points	Notable Quotes
In general, most of the participants think that they would participate in the Citizen Dialogue given they have time. Reasons for this are the possibility to learn something about a new field, but also the opportunity to get into contact with other people. It turned out that the chance of really changing something in society at a political level would motivate many of the participants to take part in this format. In principle, the motivation of most of the participants to join such an event seems rather high. Only one person claimed to be more interested in getting an input about this topic than being actively involved. Referring to the length of the invitation letter, most of the participants would prefer a shorter and more concise text; only one participant considered the length of the text suitable for the purpose. One person also mentioned that a kind of expense allowance could be a quite important motivation. The fact that the	*"For me, the most interesting aspect of participating would be to get in contact with other (interested) people."* *"I think it is a nice way to get information about the topic."* *"I think it is important to get the opportunity to directly interact with scientists."*

| invitation letter is personally addressed was considered to be an important point to raise the willingness to read it.

The participants brought up the topic of data protection as many of them were concerned about how the operating institute might have obtained their addresses and data.	*"A direct contact to scientists is good because no one knows how the scientists think (about their work). It is also important that the results are communicated to policy-makers to influence their decisions. I also think that it is crucial that people know what happens with the results; policy makers should think about what exactly they want to do with the information they get."*

Q11. What holds them back from doing so? What are their concerns and perceived obstacles for participation? What could change their position?

Brief Summary/Key Points	Notable Quotes
There was only one participant who would refuse going to this event, mainly because of time management problems. The participant thinks that he/she would go to this event, if he/she had more time, but that the long duration might have a repulsive impact on people with full-time jobs. The participants criticised that the invitation letter was not informative enough regarding the handling and usage of the data obtained during the discussions. In their opinion it would be important to know about the further process after the event. Additionally, they submitted that a limit of participants could be a problem if there were too much people interested in taking part in the format. It is also very worth mentioning that one could feel a certain resignation among the participants due to the fact that they feel unnoticed and not taken seriously by the government. They have serious doubts whether the results of such a format would have an impact in any way and therefore they are not sure about how sensible it would be to participate. There were brought up a few ideas about measures that could help to increase the political and scientific impact of such events, such as introducing an obligatory and systematic public engagement in those fields as well as improving the communication between citizens, scientists and politicians.	*"For people who work, the event is too long. People working full time, maybe having a family cannot afford to spend a whole day of their weekend at this event."*

"The text does not say what the Ministry will do with the results. I would hesitate to participate if I didn't know what they use it for."
"We cannot influence what happens afterwards with the results, but maybe it is enough to start a thinking process (note: among decision-makers)."

"Participation in a systematic way would be important, but here we have the problem of an ongoing change within the Ministries and parties. However, not all of them change all the time, so it would be important that the ministry feels bound to certain procedures." |

	"The policy-makers should publicly comment on the results of the panel so we see the impact right away."

Q12. What do participants see as possible benefits for them personally/the wider public/other stakeholder groups (incl. researchers/policy-makers/other decision-makers)?

Brief Summary/Key Points	Notable Quotes
Talking about this way of public engagement, the participants primarily talked about its possible benefits for citizens. In this context, the main benefit is that such events might help to eliminate certain fears which specially exists in all technology related topics among the citizens. In the opinion of one participant the citizens are unable to make decisions or to influence this research field due to a lack of knowledge about those complex topics. Minimizing this fear is a process which was considered to be very relevant in order to enable a proper engagement of citizens possible in this field.	*"Political decision-makers are responsible for us and therefore should be grateful to have the opinion of the public. Citizen Panels should gain influence because people have a right to participate and have a say in such issues."* *"When it comes to technologies, there is a lot of helplessness because people have the feeling they do not know much or not enough. […] I think the difficulty lies in the communication of such topics – the fear of technology has to vanish."*

Group session 5: Category of engagement: Citizen Evaluation Board

Q13. What are the motivations of citizens to take part in the presented engagement opportunities?

Brief Summary/Key Points	Notable Quotes
The main motivation for the participants to take part in this engagement opportunity is that the Evaluation Board is considered to be the most sensible and influencing way of participation. Although the participants are aware of the great responsibilities connected with this engagement activity, several of them praised the concept of this format. In their opinion, events like this are a very serious opportunity to change something and to have an influence on a political level. One participant mentioned that his/her motivation would depend on how much the results of the committee would be considered in the further decision-making process. Furthermore, the structure of this format enables a learning process among all participants that might positively affect the quality of the results (in contrast to the citizen dialogue as a one-day event). Most of the participants think that the invitation letter is too	*"I like to take responsibility, so I would join the Citizen Evaluation Board."* *"This format is of higher significance than the other two because you have more in-depth discussions. That calls for more effort to produce a reasonable result. And you can make use of your own experiences you gathered during these two years. For me, this is the*

long. Only one participant argued that the length of the text is suitable for the purpose to provide enough information to decide whether to participate or not.	*most productive form because all participants undergo a learning process."*

Q14. What holds them back from doing so? What are their concerns and perceived obstacles for participation? What could change their position?

Brief Summary/Key Points	Notable Quotes
One participant considered the assigned responsibility quite big. But the main reason for the participants to prefer not taking part in the Evaluation Board is the time they have to invest in this format. They added for consideration that especially people with full-time jobs maybe had problems with spending their weekends in this way. A solution for this problem could be a regulation which allows participants of the evaluation board to take off more days or which guarantees other benefits for the volunteers. Another idea is to replace public holidays with days reserved for public engagement events. Furthermore, it was mentioned that a reward or other types of expense allowances would have a positive influence on the motivation of citizens to participate.	*"I find it deterrent that it takes a whole weekend. For me, that's simply too much."* *"If I could be sure that the results are heard, I would participate even though it takes a whole weekend. Otherwise, no."* *"There are many Boards, but are the participants being paid? If yes, it can be considered "real" work."* *"It would be more attractive if there were like official days off for such activities for those people who would like to participate."* *"In the private sector, I think it would not work to get a day off for this because the employers already complain about too many paid leave days. […]"*

Q15. What do participants see as possible benefits for them personally/the wider public/other stakeholder groups (incl. researchers/policy-makers/other decision-makers)?

Brief Summary/Key Points	Notable Quotes
The participants did not answer the question about personal benefits in context with this format in a detailed way. However, they agreed about the importance of a connection between the citizens, science and politics in order to ensure a research in the purpose of the society. The participants clearly agreed that the Evaluation Board should help to find a suitable direction for scientific and political problems. They also strongly believe that organisational aspects, like the funding of scientific projects, should not be the job of the committee.	*"This format is about having the chance to correct the course of science.* *"The Board should focus on a small area which can be understood and communicated by citizens. They should have a say in the direction where research should develop to, but not care about the conditions. I*

	think considering the financial part of the project would take it too far."

Group session 6: Comparisons of the three forms of engagement

Q16. In a comparative perspective, which opportunity is most/least attracting to participants and why?

Brief Summary/Key Points	Notable Quotes
There was no consensus about a most or least attractive participation format. Only one participant prefers the Science Café as an informative and fast way of public engagement. Two persons prefer the Citizen Dialogue due to the fact that – in their opinion - it balances impact on decision-making and appropriate time frame. The Evaluating Committee is preferred by one participant because of its influence on politics and science. Two persons like the idea of combining the formats in a way that the Science Café that should serve as a kick-off event where participants are introduced into the topic, is followed by the establishment of an evaluation committee that was considered to be the best way of having an impact on political and scientific issues. The participants did not mention clearly their least favourable format. A few participants think that the Science Café is way too short for the purpose of a serious involvement of the public in scientific or political processes. In contrast, in the opinion of some participants the Evaluation Board is not feasible due to required time. Several of the participants also claimed that their willingness to participate in the different formats depended on the topic. If they are unfamiliar with the topic, the Science Café seems like a good way to get an introduction to the field. One participant claimed that the Evaluation Board deems a big responsibility and requires knowledge of the field discussed in order to enable a sensible result.	*"I would prefer a combination: the café would be best to get an idea if one is interested in the topic. For a serious participation, the third version would be best because there is enough time to discuss. The dialogue is too short, there are too little results. The Evaluation Board could provide reasonable results."* *"My willingness to participate depends on the topic. If I don't have a clue about the issue at stake, I'd rather go to the science café, but if I have knowledge about the issue, I would also participate in the Evaluation Board. But altogether, I think that the Citizen Dialogue would be the best form."* *"If you don't have an idea about the issue, I find it irresponsible to participate in the Evaluation Board."*

Q17. Which opportunity brings most benefits to the different stakeholder groups (the public at large, researchers, policy-makers/politicians), etc.?

Brief Summary/Key Points	Notable Quotes
The participants did not mention clearly separated benefits for the different stakeholder groups.	

FOCUS GROUP 3

Table moderator name	*Alexander Bogner*
Note taker name	*Rosa Friesacher*
Number of participants	*6*
Sub-domain discussed by the group	*Food and Health*

Group session 1 – Warm up

Q1. What experience do participants have with public engagement so far?

Brief Summary/Key Points	Notable Quotes
Every participant had already gained experience in different kinds of public engagement. A minimum of 2 people had attended different demonstrations (for example against TTIP and CETA or for the protection of animals). Many participants had already committed themselves to different topics by signing petitions. These topics include (amongst others) petitions for human rights (Amnesty international) and for digital participation, as well as against abortion ban in Poland. However, almost all participants showed interest in gathering information regarding different scientific and non-scientific issues. Participants mentioned topics like the protection of the environment, medicine and health (for example cancer research) and physics (particle physics). One participant had already engaged by advising companies professionally as he works in the information technology field. In addition, many participants mentioned a regular participation in polls of opinion research centres. Another participant described his engagement by working as a volunteer in an institution, which had provided accommodation for homeless EU-citizens. All participants seemed to be very interested in public engagement. It was often emphasised that it was important to discuss and share opinions with other people and to influence politics by presenting and making one´s view public. In addition, the participants were interested in codetermining the decision whether a product should be launched.	*"It is important to stand up and to raise your voice."* *"I have signed petitions on digital co-determination and for Amnesty International. If enough people sign it has the chance to influence politicians."* *"I want to state my opinion. […] I also like the exchange with strangers."*

Q2. What motivates the participants to take part in this specific event and methodology?

Brief Summary/Key Points	Notable Quotes
All participants seemed to be interested in this event and in the participation of citizens in scientific research. It was also said that it was crucial to share opinions and views with other people and to learn all about the possibilities how to participate in scientific research. It was said that citizens should support increasing public involvement in political decisions concerning scientifically-developed products.	*"I read 'Academy of Sciences' and thought 'this can only be good'."* *"I find the issue interesting and wanted to know 'what are the opportunities', 'how can I co-create science'."*

However, participants often claimed, that it was very difficult to influence politics as on the one hand there was often a lack of information to build an independent and reasonable opinion about a product (for example genetic altered food). On the other hand, politicians often seem to avoid involvement of citizens in important decisions and to manipulate people by representing only advantages or disadvantage of a product or a topic, but never both of them.	
One participant claimed that opinions of single citizens would not influence politics as money often played a more important role for politicians. Citizens have to band together and make their opinions public. That is the only way how people are able to influence politics. What´s more is that citizens should get involved in scientific research to get information about different topics. There are many examples, which show that uninformed citizens build opinions based on common views and rumours. This is the reason why prejudices and fears arise among the people. Citizens have to get involved in scientific research, so that these prejudices and fears are reduced.	

Q3. What are the participants' expectations and concerns related to the event and methodology?

Brief Summary/Key Points	Notable Quotes
The participants wished to increase the influence and codetermination of citizens regarding scientific research. Furthermore, they wanted to get informed about what scientists and especially politicians are working on. The participants accused politicians of keeping important information as a secret and of manipulating the population, so that the citizens agree with the politicians´ opinions and attitudes.	
Some of the participants claimed that public engagement was useless regarding as it was often unclear, what the aim and the final results of the research were. Furthermore, it is nearly impossible for citizens to participate in specific areas of scientific research due to the complexity of the topics.	

Group session 2: Introduction to 'their' sub-domain of R&I

Q4. How knowledgeable participants consider themselves to be in this particular area of research?

Brief Summary/Key Points	Notable Quotes
The participants did not answer this question in great detail. Some participants seemed to have good knowledge of the situation in Austria regarding sweeteners and „food and health", so that a serious discussion was possible.	*"There is enough information out there."*
One participant claimed that it was not difficult to get information about sweeteners or other ingredients itself, but that there is often a problem with getting intelligible information about the ingredients of a product.	

Q5. How relevant do they think this issue is to their everyday life as of nowadays? What about the future?

Brief Summary/Key Points	Notable Quotes
All participants agreed about the importance of this issue. It was emphasised that especially the nutrition of babies and children is a tricky issue, as it will influence their further development and health. The participants complained that there are often no sugar- free alternatives to unhealthy products, which contain sugar (for example Yoghurt for children).	

Q6. How important do they think this issue is for the society as a whole? Why?

Brief Summary/Key Points	Notable Quotes
Food and health was considered a crucial issue for our society. Since there is a lack of knowledge about correct nutrition among our society, many people do not have a balanced diet. The participants also mentioned people´s addiction to sugar and it´s harmful influence on their health and pointed out, that this matter often appears combined with a lack of physical activity. These behaviour leads to an unhealthy lifestyle, which many parents mostly unconsciously pass on to their children. According to some participants another problem appears regarding the use of sweeteners: Many people make the wrong conclusion, that sugar- free products with sweeteners are automatically healthy. As consumers are often unaware about the fact that products with sweeteners and without sugar can be as unhealthy as products with sugar, they tend to eat even more believing that they are eating healthily.	*"One has to bring it into schools and kindergarten – kids should learn the importance of the issue in a playful manner."* *"The first vegan was an outsider, and today it is a real trend."*
The participants considered sweeteners useless for healthy people (apart from diabetics). General education about the handling of sugar and healthy nutrition is needed instead. Health and a healthy lifestyle have to become popular among people (for example by using advertisement). The participants emphasised that there is a huge lack of knowledge and information about how to lead a healthy life among people. An easy access to reliable information about healthy nutrition and about physical activity should be provided. Instead of advertising a product, companies should inform people about the ingredients and effects on people´s health.	

Group session 3: Category of engagement: Science Café

Q7. What are the motivations of citizens to take part in the Science Café?

Brief Summary/Key Points	Notable Quotes
All participants considered this event a great opportunity to gain information about a specific topic. The Science Café provides a great basis of information for further public engagement regarding this topic (for example for consolatory engagement). It is also a great opportunity to find out if this issue is interesting and worth engaging. Furthermore the participants liked the idea of this event	*"One should go there and listen to it. That is good for forming an opinion."*

| and that pros and cons about a topic are presented to the audience, so that people can build their own opinion about it. Another advantage is that people can join this event for free providing all social groups access to important information.

One participant said that time and date of this event were good for working people who had children, so that it was also possible for them to attend this event. | |

Q8. What holds them back from doing so? What are their concerns and perceived obstacles for participation? What could change their position?

Brief Summary/Key Points	Notable Quotes
The biggest problem turned out to be the date and the time of this event. All participants claimed that it would be better if the same event took place on different days, so that people could choose between several dates. This would provide more people access to this information, since many, especially young people do not have time on Saturday evening. Furthermore, it is advisable to change the design of the invitation so that it can be distinguished from advertising letters. The layout should be interesting and appealing.	*„Several dates would be better to address the wider public."* *"Science Busters is a good example how to broker science." [in contrast to group 1 that didn't like the entertaining approach of Science Busters]* *"I would throw away the leaflet. It looks like advertisement."*

Q9. What do participants see as possible benefits for them personally/the wider public/other stakeholder groups (incl. researchers/policy-makers/other decision-makers)?

Brief Summary/Key Points	Notable Quotes
All participants considered this event a good opportunity to collect information about a specific topic. This can be useful for further public engagement regarding this topic. However, it was suggested providing more people with the information given to the audience in the Science Cafe by setting up a website, where all people who are interested in the topic could inform themselves. Another good idea would be uploading a podcast of these meetings, so that people who were not able to join the Science Café can get informed. The participants encouraged science policy to set up a kind of "Research You Tube" project in order to develop a digital infrastructure supporting continuous and much broader public engagement with science. With a view to the restricted number of participants in traditional engagement events and with regard to the restricted flexibility of face-to-face interaction in traditional events participants were strongly in favour of an increased digitalization in the field of participation. Furthermore, the participants mentioned that it would be helpful if citizens could get in contact with the scientists (who also take part in the Science Café) to ask questions (for example by chatting online with the citizens). This internet platform could also be used for companies	*"One has to use the possibilities of the Internet; otherwise the diffusion [of information] is limited."*

for describing their products (for example for publishing a list of ingredients).	
The participants complained that politicians often withheld important information and that they only presented their point of view to the population, so that people would support their political actions. If people would be well- informed, they could go with their gut and make up their own opinions.	

Group session 4: Category of engagement: Citizen Dialogue

Q10. What are the motivations of citizens to take part in the presented engagement opportunities?

Brief Summary/Key Points	Notable Quotes
All participants agreed that this event was not suitable for many people as it was very time- consuming. This event attracts people, who have already addressed this topic or people who have problems regarding this topic (for example an event about sweeteners will attract people with health problems as diabetes II) The participants showed hardly any motivation to take part in the engagement (for further explanation read the answer to the question below).	

Q11. What holds them back from doing so? What are their concerns and perceived obstacles for participation? What could change their position?

Brief Summary/Key Points	Notable Quotes
The first point of criticism relates to the small number of people who are involved in this event. The participants claimed that the opinion of a group of 20 citizens would not be taken seriously and would not influence further developments in this area. The influence would be much greater if there were 2000 instead of 20 participants, who passed an opinion. Involving the internet and social media, many citizens could be asked, independent of time and date.	*"This format is not suited for the wider public."* *"Why should I take part in the discussion if I have no knowledge? My opinion is of no use in this case."*
Second, participants profoundly criticised the framing of the citizen dialogue: Since most of relevant research with regard to nutrition and health is carried by industry, citizen dialogues primarily addressing academic research facilitated by politics and public money are not very helpful. So, with a view to the particular issue citizen dialogues are not considered to be an appropriate tool to effectively influence the direction of research. In sum, the participants profoundly criticised the approach: In the field of food and health there is no way of influencing research by commenting on research programmes supported by research politics.	*"In my opinion there is no chance that something is changed"* *"With 20 people you don't achieve much."*
Furthermore, some participants refused to go to this event as they had too little knowledge about this topic. A participant claimed that his advices would be useless for experts as he did not know anything about the addressed topic. And even if people got information by several expert inputs, the wisdom of the crowd may be reduced to the experts' rationality. However, some participants	

were also concerned that this event could be some kind of advertisement for a pharmaceutical company. Furthermore, many people would be put off as this event is very time- consuming.

Q12. What do participants see as possible benefits for them personally/the wider public/other stakeholder groups (incl. researchers/policy-makers/other decision-makers)?

Brief Summary/Key Points	Notable Quotes
The participants claimed that neither scientists, nor politicians, nor citizens could benefit from this engagement. First, the participants´ opinion is not useful as they have too little knowledge about these specific topics. They will be influenced by the scientists´ opinions, so that the participants will finally share their views with the scientists. Second, the participants considered this engagement useless, as the influence of the opinion of 20 citizens will not change the scientists´ or politicians´ attitude towards a topic. Third, participants do not consider citizen dialogues helpful to effectively influence research in this particular area (food and health) as most research is sponsored by industry. The participants explained that it was more important to inform people about how to keep well and fit and to raise awareness for the importance of healthy food and physical activity. Citizens should be involved at the moment when it comes to the question whether a product should be introduced to the market.	

Group session 5: Category of engagement: Citizen Evaluation Board

Q13. What are the motivations of citizens to take part in the presented engagement opportunities?

Brief Summary/Key Points	Notable Quotes
The participants liked the idea of influencing the distribution of research funds. Citizens are able to co-determine, where their money, which was paid in the form of taxes, will be used ("citizen as a sovereign regarding activities sponsored by public money"). People even suggested defining the participation in these evaluation panels as a compulsory task (similar to the case of "courts of lay assessors" in Austria).	*"If my taxpayer's money is used, I can decide for what it is used. For what do we want the funding budget?"*

Q14. What holds them back from doing so? What are their concerns and perceived obstacles for participation? What could change their position?

Brief Summary/Key Points	Notable Quotes
Almost all participants agreed that public engagement regarding basic research was useless, as it was often unclear, what the aim and the final results of the research was. Furthermore, it is nearly impossible for citizens to evaluate research projects and to decide which of them should be financially supported, because these projects often go into too much detail and are too complex for non-experts. One participant worried that if citizens could decide which projects should be financially supported, projects which treat popular topics, like cancer and HIV, would be favoured over those,	*"Only when a final product is held out in prospect, it makes sense to ask these questions, so only in applied research."* *"People would favour research area that are obviously useful to them"*

which address also very important, but less popular problems and questions.	[ignoring other potentially important research areas]
However, some participants were also concerned that people, who are engaging in this event, can be manipulated and bribed easily (by expert information and presentations – in the end all research is presented as a means to contribute to the war against cancer….). This could be prevented by involving more people using internet platforms and online polls, how research funds should be distributed.	
Another participant problematised the specific focus of the evaluation panel: Since there is a long way to go from basic research to technical applications citizen are not able to effectively contribute to "responsible" innovation by judging research proposals.	

Q15. What do participants see as possible benefits for them personally/the wider public/other stakeholder groups (incl. researchers/policy-makers/other decision-makers)?

Brief Summary/Key Points	Notable Quotes
It seemed that all participants liked the general idea of this type of engagement as they are able to influence the distribution of tax money. Although some participants also seemed to be interested in specialised research projects, many of them agreed, that it would be better for citizens to influence the financial support of research not based on single projects, but on large scientific domains (like medicine or educational research). This information could be gathered by conducting an online- poll, so that every citizen run a chance to influence the outcomes. This means, participants voted for a kind of "reframing" of the event: Evaluation panels should not deal with single issues (research proposals) but with the importance of different research areas. Evaluation panels might be useful if people are called to prioritise wider research areas (such as health, nutrition, medicine, technology, science and society etc.)	*"Research is a delicate area. Actually nobody should butt in what happens in research. But if it's not the citizens, then politicians will do it - and then the question is whether it isn't better to relinquish it to a bigger group of citizens".*

Group session 6: Comparisons of the three forms of engagement

Q16. In a comparative perspective, which opportunity is most/least attracting to participants and why?

Brief Summary/Key Points	Notable Quotes
All participants preferred the first (Science Café) and the third form (Evaluation Board) of engagement, as they considered them the most sensible ways of engagement. The first event is useful to collect information and to create a basis of knowledge for further engagement. However, participants strongly voted for engagement tools going online. The third event provides citizens the opportunity to influence the distribution of tax money. However, the participants criticised the narrow framing of the evaluation event:	*"In the second format the time resources are too demanding for so little impact"*

Citizens' evaluation should refer to wider research areas instead of single research projects.	
The second event (Citizen Dialogue) was the most disadvantageous for the participants, as it is time- consuming and the outcome is unlikely to influence scientists or politicians. Furthermore the citizens will have too little knowledge about the discussed topic, so that citizens´ opinions will not be valuable, as most of them will not be able to give sensible advice to the scientists.	

Q17. Which opportunity brings most benefits to the different stakeholder groups (the public at large, researchers, policy-makers/politicians), etc.?

Brief Summary/Key Points	Notable Quotes
The Science Café was considered the most useful opportunity for the population, as many people can get informed about a specific topic (especially when social media and the Internet are used for dissemination).	*"In all three formats new media should be involved."*
According to the participants, the second event is not useful, as it collects opinions of non-experts about topics, which demand views and opinions of professionals (which includes the problem of laypeople being strongly influenced by the expert discourse). The participants liked the idea of the third event. By changing it in a sensible way (for example that citizens are able to influence the distribution of research fund over large scientific areas) this event would be a great opportunity for citizens to engage in research.	
The participants often emphasised the importance of the internet to spread information and to get opinions from many people. They repeatedly wished for an internet platform, where citizens can get reliable information and considered online polls a sensible strategy, how to involve as many citizens as possible in scientific research. Another advantage of using the internet is that many people would be encouraged to share their views as they do not have to express their opinion in presence of many people.	

Any other comments:

Generally, all participants agreed that there was no need to develop new food or ingredients (like sweeteners), as the offer of different food is big enough. It is important to face the lack of knowledge regarding healthy lifestyle among the population. People have to get informed about how to lead a healthy life and how to keep fit as well as which ingredients are healthy and which should be avoided. It is crucial to raise the awareness for the importance of physical activity and a healthy lifestyle in general. If people change their lifestyle in favour of a healthy nutrition, industrial research will change their focus due to rising demand for healthy food. This matter will be regulated by the market itself. Furthermore, participants agreed that upstream engagement may not be very helpful as it primarily addresses basic research; rather, the "informed consumer" was considered to be the pivotal tool to control or to govern controversial food issues. Involving citizens in the development of new food is not sensible because all engaging citizens would try to influence scientific research, following their own interests and tastes. Many participants would focus on sweets and other unhealthy products, as they are very popular in our society.

However, the participants also agreed that a database which provides information about the ingredients of all products and which could give people advice about healthy nutrition would be helpful.

2.1.2   Second citizen panel

Challenge 1

1) Please, describe the challenge and the respective policy and practice options you have developed to address it.

Challenge: How much knowledge does responsibility need?

Some citizens think that they lack the knowledge to take responsibility in question on research and innovation. Other citizens think that one can and should take part in discussions on research even with little knowledge; detailed knowledge is not necessary.

Policy and practice options

- Option 1: Public engagement similar to the citizen jury model: Lay knowledge of citizens is ascribed a clear value in this system. Participation becomes civic duty. Accordingly, citizens are guaranteed to get leave from work and are compensated.
- Option 2: Knowledge questions are dealt with in expert advisory bodies. Citizens get a role in a supervisory committee and oversee the procedures of expert bodies. Therewith the workings of expert bodies remain transparent, for example in the selection of experts.
- Option 3: In engagement events, citizens deliberate fundamental directions of research (for example the funding of particular areas). Knowledge questions or concrete funding decisions (e.g. on projects) are dealt with by experts.
- Option 4: Citizens that want to participate in engagement processes have to show willingness to inform themselves before entering the process. The necessary information will be provided.

2) Why did you select this challenge and PPOs?

The challenge combines two important issues that were raised during the first citizen panel and are closely interlinked, i.e. knowledge and responsibility. The question of whether citizens have to be knowledgeable at least to some degree is a recurrent one in engagement literature and practice, particularly when dealing with complex scientific and technological issues. On the one side lay perspectives are explicitly sought to include societal values, needs and perspectives. On the other side discussions on complex scientific and technological issues might come to nothing if participants lack a fundamental understanding of scientific topics. Particularly when participants of the first citizen panel were asked to take more responsibility (i.e. in the format citizen evaluation board) they sometimes felt that they may be lacking the necessary knowledge to co-decide on the respective issues.

The four selected PPOs reflect different and partly contradictory strategies to address this challenge. PPO1 "engagement similar to citizen jury" represents a strategy in which engagement gets institutionalised and even becomes a civic duty. With this institutionalization lay knowledge is explicitly validated. The option also includes that taking responsibility in form of engagement is made easier by guaranteed free days from work and compensation mechanisms. PPO2 "citizens as supervisors of expert bodies" stands for a strategy that more strongly emphasises the need for expert knowledge in complex STI issues. In this option citizens do not need knowledge about the issues at stake because they mainly supervise and control the procedures and practical work of expert bodies. Responsibility does not lie in making topical decisions but in giving procedural feedback, thereby ensuring the transparency and traceability of the experts' recommendations. In this way PPO1 and PPO2 represent competing strategies for citizen engagement. By including both we wanted to ensure that citizens are not directed one-sidedly.

PPO3, similar to PPO2, concerns the content of citizen deliberations. In this option engagement is not delegated to procedural aspects but rather concerns fundamental questions regarding the directions

of research. This option was selected because in the first citizen panel citizens frequently stated that they would not feel comfortable with co-deciding on the funding of concrete projects.

With PPO4 we wanted to introduce another perspective, i.e. the question whether citizens think that they themselves should meet some requirements before entering engagement processes.

Overall we aimed for a variety of PPOs that reflect different aspects or even strategies for a further institutionalisation of citizen engagement.

3) Summary of groups' discussions on the challenge

Overall, the group discussions confirmed the validity of the challenge. Participants generally agreed that depending on the issue at stake some kind of knowledge is necessary to take part in deliberations. Yet they did not feel that a solid knowledge base should be a prerequisite for participating in deliberations. Referring to political institutions and processes some participants stated that politicians often do not have expert knowledge on specific issues as demonstrated by frequent change in offices and hence it should not be a requirement for citizens. Important is the availability of information and the willingness to get informed. Hence participants strongly supported PPO4. Citizens who want to attend public engagement events must in principle be motivated to inform themselves and show interest in the topic of the discussion. Organisers of engagement events should include this requirement in the selection process, i.e. invite only those citizens who are willing to read information material. In order to facilitate the information of citizens, participants asked that clear and easily understandable information material should be provided. They further demanded that scientists should be able to formulate their research in an accessible manner. In addition, they demanded that the information material should be balanced and published by an independent institution.

Participants in all three groups lively discussed the first PPO, i.e. the institutionalization of engagement similar to a citizen jury. The majority of participants did not fully support the citizen jury model. Participants liked that in such a model citizens could represent the public will and act as a democratic force alongside experts that provide scientific knowledge. However, participants were very concerned about the obligatory character of the citizen jury model. They reaffirmed that they (and other citizens) wanted to take responsibility on research and innovation issues and that citizen engagement in R&I should be strengthened. However, this engagement should occur on a voluntary basis. Citizens should never be obliged to participate, because unmotivated and unwilling participants would be more obstructive than constructive. Hence, referring to the concrete model of a citizen jury, participants asked that people who are not interested in the topic should be able to opt out. Some participants proposed that a pool of volunteers should be compiled in advance from which participants for committees or an evaluation board (or a similar engagement process) would be sampled. When a person is registered as a potential participant for public engagement, he or she is obliged to take part. Furthermore, participants asked from political actors to establish the necessary framework conditions to enable all willing citizens to participate in such formats. The participants argued that people, who are already fully occupied with a (full-time) job, family life and/or other obligations, should be able to take part in public engagement events and therefore should be released from work. This could be done by introducing regulation that makes it possible for citizens to get a day off if they aim to attend a public engagement event. In addition, participants should receive an adequate remuneration.

The second PPO, the "supervisory committee" gained less attention by the participants and was perceived differently across the three groups. One group (G1) explicitly favoured this model while the participants of another group (G3) rejected the model outright without much further discussion. Participants in group 1 particularly liked the claim for transparency in this model and its potential longevity. Participants in group 1, however, demanded that experts and citizens should not be separated to ensure the transfer of knowledge. Participants in the other groups demanded that citizens have a more direct straightforward say on decisions regarding research (than only supervising

the process). Participants on all three groups agreed, however, that citizens should rather deliberate on basic issues about the direction of research than on concrete projects or detailed questions. Participants were further concerned that citizens should not limit research but co-decide on its application.

Participants in group 3 further developed the idea that schools should address the importance of public engagement and therewith impart some kind of responsibility early on, maybe already in school age. In addition, citizens should be informed about the value and benefits of public engagement by advertisements and about current scientific topic by information campaigns.

Challenge 2

1) Please, describe the challenge and the respective policy and practice options you have developed to address it.

Challenge: How many participants does good public participation need?
Some citizens believe that a large number of participants ensure better and more representative results. In this respect online-formats reach out to more citizens, but offer little room for discussions. Other citizens prefer small groups with face-to-face interactions. While fewer citizens are reached in this format, it allows for more intense discussions.
Policy and practice options

- Option 1: More and broader engagement initiatives with face-to-face interaction are initiated and supported (e.g. more citizens, at different places, at different times). More money is provided for these initiatives.
- Option 2: Research on the impacts of different engagement formats (online/offline) is intensified.
- Option 3: Online- and offline-engagement formats are more intensively linked to benefit from the advantages of both approaches.
- Option 4: It will be clearly communicated that small groups, in which diverse perspectives are represented, have a great value as an advisory element. Yet citizen engagement does not substitute traditional forms of policy-making.

2) Why did you select this challenge and PPOs?
The challenge was a key concern emerging from the first citizen panel and particularly related to engagement formats with potentially greater impact (i.e. citizen dialogue and citizen evaluation board). Citizen wondered whether a small group of around 20 people could really be representative. In the course of the first citizen panel the use of online deliberation formats was suggested by some citizens. The comparison with the citizen panels in other countries revealed that the challenge is also perceived to be important in other countries.

The PPOs reflect different strategies to deal with this challenge, from propagating and strengthening face-to-face formats by providing more money (PPO1), to the combination of online and offline formats (PPO3) and the communication of the role of and expectations towards smaller groups (PPO4). By choosing such different options the participants should be encouraged to think in different directions.

3) Summary of groups' discussions on the challenge

Participants in the three groups reacted differently to this challenge, some emphasising representativeness others emphasising diversity. Particularly in regard to the use of online formats

the opinions differed across the groups. Some participants appreciated the opportunities that online formats offer whereas other participants were much more sceptical about the idea of online engagement.

Inspired by PPO2, one group (G2) extensively developed a three stage model for the process of public engagement. The first step would consist of an online inquiry with the aim to capture the opinions of as many citizens as possible. The second stage would include several chat rooms, where representatives of the different groups with opposing opinions discuss and agree on one position. The third step would be a face-to-face deliberation, where selected members of the chat rooms come together to come to a final statement. The participants were divided over the details of the system and in the end they agreed that a refining process of the model would strongly depend on the situation and on the issue to be at stake. Some group members liked the idea that every citizen should be able to specify how much he or she would like to be involved in the public engagement project at the registration for the online inquiry. Additionally, there was a strong agreement among the participants that people who want to take part in this form of online public engagement should identify themselves as a citizen in order to avoid manipulation. Furthermore, it was claimed that not everybody ought to be able to participate, but only the members of the group of people, who are somehow affected by the issue. One participant also considered that if all three stages of the model would be organised online, an internationalization of public engagement would be facilitated. Interestingly, the issue of discrimination, e.g. via difficulties of access, was not at all brought up.

Also the other two groups suggested the combination of online and offline formats without being that specific and partly with different emphasis. Participants in group 1 and 3 were generally more sceptical about online formats. Participants considered online polls and teleconferences to be unreliable as people can often get distracted when sitting in front of the computer. Participants also feared that online formats would easily allow manipulation. In addition online formats were perceived as less suitable for in-depth discussions on specific issues. Overall these participants saw the primary role of online formats in information provision, preparatory work and for getting a broad and general overview on the opinions of citizens. However, online formats should not substitute face-to-face deliberations. Hence face-to-face deliberations were clearly preferred by many participants as they allow for more focused and intense discussions. In this respect, participants strongly supported PPO1. Participants emphasised the need for a diversity of perspectives. They demanded that all citizens in Austria, also those in remote areas, should get the possibility to participate. Hence citizen engagement should take place at several places in Austria. Moreover, participants demanded to broaden citizen engagement to the whole of the EU or even other countries. Depending on the scope of political decisions more people and countries should be involved. In this regard participants demanded that (EU) politicians should provide the necessary money to organise citizen panels and committees in different regions and countries and at different dates.

Moreover, participants of group 3 supported PPO2 and wished for more scientific research regarding the effectiveness of online and offline participation as they felt that, so far, little is known about the concrete benefits and impacts of single formats.

Challenge 3

1) Please, describe the challenge and the respective policy and practice options you have developed to address it.

Challenge: What kind of impact might engagement activities have?

Many citizens doubt that the results of citizen engagement events have any influence on research and innovation. They believe or have experienced, that scientists and politicians are not interested in the

opinions of citizens. They fear that the results are not or hardly considered in the daily work of decision-makers.

Policy and practice options

- Option 1: Actors that are advised by citizen engagement processes are obliged to provide a statement on what happened with the results of citizen engagement processes. Whether and how recommendations of citizens are implemented is communicated in a transparent manner.
- Option 2: In the engagement process it is clearly communicated what the process is able to achieve and which role it plays in the innovation process.
- Option 3: Citizens have the opportunity to inform themselves about the engagement's impact subsequent to the engagement process.
- Option 4: Engagement processes are more intensively accompanied by media reporting. Therewith politicians and scientists have to publicly deal with the results.

2) Why did you select this challenge and PPOs?

The challenge is paramount to the willingness of citizens to participate in engagement events. If citizens don't consider standing a chance of being heard, they will hardly invest their time and energy to attend engagement events. The challenge was therefore present in all group discussions of the first citizen panel in all five countries. On a more general level the challenge also touches upon a general distance and distrust between citizens, scientists and politicians.

The selected PPOs address different actors and aspects, including a closer linking of engagement processes with decision-makers (PPO1), an open communication on the role of the particular engagement process (PPO2), the citizens' rights to be informed about the engagement's impact (PPO3) and the linking to media reporting (PPO4).

3) Summary of groups' discussions on the challenge

Participants in all three groups strongly confirmed that this challenge is a main concern for them. They fear that their opinions have little value in actual decision-making on research and innovation issues even if they participate in related engagement processes. Lobbying groups and political interests are perceived as much more influential actors and factors. Participants also think that politicians and other actors give greater authority to expert opinions. Against this background the participants in all three groups strongly demanded that their voices are heard and have some influence on decision-makers in research and innovation.

Overall, participants supported all four suggested PPOs with a strong emphasis on PPO1 combined with PPO3. Participants in all groups emphasised that they want to get more information on what happens with the results of citizen engagement and see the role of citizen advice strengthened in STI decision-making. In this respect all three groups strongly supported PPO1, i.e. that political (and potentially other actors) are formally obliged to provide a statement on how the results of citizen engagement have been dealt with, whether and how they have been incorporated in policies or why not. Such statements should be a formal part of the whole procedure of citizen engagement. By this procedure participants hoped that the commitment of political actors to consider citizens' opinions would be increased. Participants further demanded that a short and easily understandable follow-up report should be published to ensure transparency. Group 3 further suggested that citizens get the possibility to react on such statement by political or other actors. The group also discussed the establishment of some kind of supervisory authority, which should trace the influence and publish the results of their investigations.

In addition, participants asked that politicians should provide regular statements about the distribution of money among scientific projects to prove whether and how they have adhered to the decisions of the citizens. Scientists should be obliged to demonstrate transparently, how they use public funds and whether this is in accordance with the results of public deliberations.

Participants in all three groups also supported PPO4 and demanded that media reporting on citizen engagement and the respective results and impacts are increased. Participants expected that media reporting would prevail on political actors to openly deal with citizens' recommendations, would increase transparency and ultimately would increase trust.

Most participants acknowledged that citizen engagement should not have a decisive character but is of advisory nature. In this respect, some participants demanded that it is clearly communicated that citizen engagement has an advisory character in order to avoid false expectations (PPO2).

Messages

Participants in all three groups developed several messages close to the challenges and suggested PPOs. Although they were encouraged to think about different actors, participants had a hard time to imagine actors other than politicians to which they could address their messages.

GROUP 1

1) What needs to be done to make citizen engagement in R&I (more) attractive?

Message 1: EU politicians: Citizen engagement should be organised in form of a supervisory council because it can be used for a broad spectrum of issues. The supervisory council should also decide on the appropriate methods of engagement. Laypeople and experts should stay in close contact. The selection of participants should be random and participation needs to be voluntary.

Message 2: Online formats should be used for the provision of information and for broad opinion surveys as well as a precursor for more intensive ('face-to-face') deliberation.

Message 3: Politicians and organisers of engagement processes should clarify in advance that citizen engagement has an advisory character and does not substitute political decision-making.

Message 4: Political actors should be obliged to give a statement whether and how the recommendations of citizens have been implemented. Organisers of engagement processes should document the whole process (including the statement).

Message 5: Media should increase its reporting about engagement processes and the respective political considerations.

GROUP 2

1) What needs to be done to make citizen engagement in R&I (more) attractive?

Message 1: Political actors (particularly national ones) should establish a model of citizen engagement similar to a citizen jury. Participation should be voluntary. This group should co-decide on fundamental decisions in research. Political actors are obliged to consider these recommendations.

Message 2: Political actors: Develop and implement a 3-step-model of online survey, moderated chat groups and offline face-to-face deliberations.

Message 3: Political actors should be obliged to give a statement of what has happened with the results of citizen engagement.

GROUP 3

1) What needs to be done to make citizen engagement in R&I (more) attractive?

Message 1: EU-politics should involve citizens in decisions regarding scientific research and develop respective engagement formats.

Message 2: Engagement activities should be appreciated and facilitated by guaranteed and compensated leave from work.

Message 3: Schools should early on address the value and benefits of public engagement.

Message 4: We cherish the quality of interactions. Hence political actors should provide the financial resources to enable engagement processes at different places (regions, countries) and at different dates.

Message 5: Science should increase research on the potential and impacts of online and offline formats.

Message 6: We want to make a difference. Hence we ask that politicians, scientists and industry give short and clear statements on what happens with the results of engagement processes and beyond that, how respective funds have been used. Citizens should then have the opportunity to give a further statement.

2.2 **Bulgaria**

Authors: Partner ARC Fund (Blagovesta Chonkova, Desislava Asenova and Ventselsav Kozarev)

2.2.1 *First citizen panel*

FOCUS GROUP 1

Table moderator name	*Reneta Veneva*
Note taker name	*Zlatka Dragneva*
Number of participants	*6*
Sub-domain discussed by the group	*Food and Health*

Group session 1 – Warm up

Q1. What experience do participants have with public engagement so far?

Brief Summary/Key Points	Notable Quotes
Some participants have had relevant experience, such as involvement in projects and working for NGOs with various causes, initiatives and aims (working with children, historical and spiritual values in the community, etc.) Some have been involved in forms of public engagement discussions: theatre of the oppressed, youth parliament, online surveys, etc. Some participants have participated in small working groups, e.g. under the Rural Development Programme, or in discussions initiated by citizens in their residential area.	

Q2. What motivates the participants to take part in this specific event and methodology?

Brief Summary/Key Points	Notable Quotes
Two of the participants mention that they would like to contribute to society by being actively involved in such discussions and also by setting an example to fellow citizens. Others are rather more interested to learn something new which they can use in their work or personal life. One of the participants also mentioned she is interested in the process of the panel, namely how citizens will arrive at common goals.	*„If each individual changes, we will be able to change the world."*

Q3. What are the participants' expectations and concerns related to the event and methodology?

Brief Summary/Key Points	Notable Quotes
The expectations of the participants were related to meeting new and interesting people, getting informed about the issue (highlighting issues and problems, getting a wider perspective), contributing to a positive change with participating in the panel and getting a feedback on what has been achieved in the project and how the results of the discussions were used.	
The concerns of the participants were mostly focused on the impact of the panel. The participants feared the results of the panel won't	

be used further on and won't have any impact on future R&I processes. Some participants were concerned with the experts' evaluation and interpretation of the discussions of the panel.	

Group session 2: Introduction to 'their' sub-domain of R&I

Q4. How knowledgeable participants consider themselves to be in this particular area of research?

Brief Summary/Key Points	Notable Quotes
Participants evaluated their knowledge in the area as rather substantial. Five out of six participants affirmed that they have a personal interest in the issue of healthy nutrition, they have read about it and practice it.	

Q5. How relevant do they think this issue is to their everyday life as of nowadays? What about the future?

Brief Summary/Key Points	Notable Quotes
All participants agreed that this topic is highly relevant for them, their families and their everyday life (as well as for the society as a whole). The link to agriculture and healthcare have also been mentioned as healthy nutrition is an area which very much affects other important sectors as well.	

Q6. How important do they think this issue is for the society as a whole? Why?

Brief Summary/Key Points	Notable Quotes
Participants highlighted the great importance of the issue for society. Some of the aspects they mentioned included: i) nutrition in the future (next 20-50 years) should be the single most important priority of humanity; more and more people will become interested in nutrition in the future; ii) child nutrition is critical. It depends not only upon families' choices but also upon the environment (e.g. the food provided in schools and nursery schools); iii) workplaces don't offer opportunities to get proper food.	*"When we get to know ourselves, we start to understand what we have to eat to be healthier and happier."*

Group session 3: Category of engagement: Citizen Dialogue

Q7. What are the motivations of citizens to take part in the Science Café?

Brief Summary/Key Points	Notable Quotes
The motivations of the participants could be divided into several groups: Personal motivations: - Personal interest in the issue; - Participants are interested to hear more about the topic and the information provided in the invitation; - Participants would like to make new contacts; - Some participants would like to attend in order to validate their own views on the issue;	*"I joined in to hear an expert opinion, but I am definitely against chemically manipulated anyway."* *"Science should support good habits instead of harmful ones."*

- Participants have been invited by someone close to them, thus, they'd participate for reasons of loyalty and responsibility to that person.
Issue-related motivations:
   - The issue is of relevance to the participants;
   - The opportunity to hear what experts think about the issue;
   - The opportunity to ask questions about the issue.
Process-related motivations:
The fact that information about the content and nature of the group session was sent in advance.	

Q8. What holds them back from doing so? What are their concerns and perceived obstacles for participation? What could change their position?

Brief Summary/Key Points	Notable Quotes

Personal factors:
   - A few participants stressed that they wouldn't participate if they disagree with the goals of the discussed research/policies (or the definition thereof) or if the issue is a source of negative emotions for the participants due to previous personal experience;
   - Another reason not to take part in such an event would be time conflict and the unavailability of the participant at the specific time of the event;
   - Some suggested that they might feel they are taking advantage of;
   - Lack of personal interest in the topic is also a factor which deters the participation of some citizens;
   - If the event is commercially oriented.
Factors of organisational character:
   - The expectation that inviting so many expert speakers would make the meeting boring;
   - Presenting the information improperly (unclearly, too much expert jargon, etc);
   - Some participants also suggested that this form of public engagement lacks clarity as to the follow-up of its outcomes.
Factors pertaining to the invitation's content:
   - Too much information;
   - Perception that the invitation contains manipulated information;
   - When participants have a sense that there is hidden agenda, such as advertising a particular person or organisation.
	„Attention should be driven to the impact of food and the applicability of the discovery."
	
	„I would feel like a test animal."

Q9. What do participants see as possible benefits for them personally/the wider public/other stakeholder groups (incl. researchers/policy-makers/other decision-makers)?

Brief Summary/Key Points	Notable Quotes

Possible personal benefits: - Opportunity to be informed, learn something new and share something one already knows; - To be able to voice your own opinion; - To make both personal and professional contacts for the organisation one represents; - Feeling of partaking in something significant. Participants stated that unless the issue "grips" them, they wouldn't be encouraged by any "bonus".	*"My need to know and the ensuing personal informed choice."* *"I actually got a reward for the time I spared."*

Group session 4: Category of engagement: Science Café

Q10. What are the motivations of citizens to take part in the presented engagement opportunities?

Brief Summary/Key Points	Notable Quotes
<u>Process-related factors:</u> - Access is open to more people; - A smaller number of speakers and participants in an informal environment; - Offers an opportunity for discussion, voicing one's personal opinion and sharing one's personal point of view; - Well-structured; - More concrete than the previous invitation (i.e. citizen dialogue): with names, researchers, place; - Set at a convenient time (proposed day and hour) and place (local café). <u>Factors pertaining to the invitation's content:</u> - Words that sound "opening", positive, such as "discussion" and "public"; - It manages to show the relation between science and everyday life; - It mentions concrete names that can be checked, participants can learn about their professional achievements. <u>Personal factors:</u> Well-structured and providing opportunity for sharing one's personal point of view on the issue.	

Q11. What holds them back from doing so? What are their concerns and perceived obstacles for participation? What could change their position?

Brief Summary/Key Points	Notable Quotes
<u>Obstacles of personal character:</u> - Personal commitments made for the working day. - The venue of the event. <u>Obstacles arising from the invitation's content:</u> - The invitation's first part is too formal; - Availability of places – participants shared that they might decide not to take part in the event if there is no	

information provided on whether there are any available places left; - If participants felt that the event has a commercial character.	

Q12. What do participants see as possible benefits for them personally/the wider public/other stakeholder groups (incl. researchers/policy-makers/other decision-makers)?

Brief Summary/Key Points	Notable Quotes
The participants saw the following as major benefits of the application of the discussed format: - Opportunity to ask questions and to have a discussion on the issue; - The contacts made. Opportunity for the researchers to get feedback on topics they work on, to see how citizens perceive the topic.	

Group session 5: Category of engagement: Citizen Evaluation Board

Q13. What are the motivations of citizens to take part in the presented engagement opportunities?

Brief Summary/Key Points	Notable Quotes
Factors pertaining to the invitation's content: - It defines clearly the purpose, the concrete details, the compensations, the process, the extent of involvement and the feedback to be expected. Personal factors: - Participants felt that this format gives an impression that citizens' views are important; the smaller number of participants further strengthens the impression that one's opinion is important and one's voice will be heard; - The opportunity to get a more in-depth understanding about the topic as well as to think over what is happening from the perspective of time.	*"Informal engagement of people who are directly concerned and interested in the issue."*

Q14. What holds them back from doing so? What are their concerns and perceived obstacles for participation? What could change their position?

Brief Summary/Key Points	Notable Quotes
Obstacles of personal character: The long-term engagement which has a binding character and requires a particular responsibility (in the discussion of this issue the panel's members concluded that this engagement is contingent on the participant's professional status, i.e. it would be a problem for a working family person, while a pensioner would be able to better balance this with other engagements). The format should be arranged so, as to be able to replace members of the panel with other members with a similar opinion and stance towards an issue. If any of them is not able to attend, the other one should be given the chance to share the absent person's opinion, so that it is taken into account.	

Obstacles arising from the invitation's content: The use of the term "research" does not make it clear whether the invitation refers to the function or the application of research; thus, it could be replaced with "applied research". It is again cramped with information, the text is too long.	

Q15. What do participants see as possible benefits for them personally/the wider public/other stakeholder groups (incl. researchers/policy-makers/other decision-makers)?

Brief Summary/Key Points	Notable Quotes
Participants can get a more in-depth understanding of the topic at stake and think over the issue from the perspective of time. Participants have the opportunity to share their opinion and have an impact.	

Group session 6: Comparisons of the three forms of engagement

Q16. In a comparative perspective, which opportunity is most/least attracting to participants and why?

Brief Summary/Key Points	Notable Quotes
The participants decided to first select several criteria by which to decide on the most and least attractive format of engagement. In the discussion that ensued they came to the conclusion that the format of citizen engagement is related to the issue and the purpose. On this basis, they selected as the most attractive format the citizen evaluation panel. Motives: - Citizens have the opportunity to follow the whole process. - They can also take part in the development of its individual phases. - This format helps participants turn into a community. - The format has a clear focus, purposes and issue oriented concrete details. - Participants accept a more serious and long-term commitment. - Participants have the opportunity to voice their opinion throughout the process. This engagement format allows citizens to have an impact on institutions.	

Q17. Which opportunity brings most benefits to the different stakeholder groups (the public at large, researchers, policy-makers/politicians), etc.?

Brief Summary/Key Points	Notable Quotes
Participants once again decided that the citizen evaluation panel would bring most benefits to the following stakeholder groups: - NGOs - Research teams - The administration and management at various levels	

- The participants themselves - Citizens This is so for the following reasons: its duration, the long-term engagement of participants and the opportunity to modify the benefit of the expected outcomes, e.g. if a particular nutrition substitute is developed, to find another application for it instead of that of nutrition substitute.	

FOCUS GROUP 2

Table moderator name	*Maria Shishkova*
Note taker name	*Ilia Marincheshki*
Number of participants	*6*
Sub-domain discussed by the group	*Nanotechnology*

Group session 1 – Warm up

Q1. What experience do participants have with public engagement so far?

Brief Summary/Key Points	Notable Quotes
Some of the participants have attended public discussions before. Others have friends of theirs who have attended forms of citizen engagement in policy making, e.g. drafting recommendations for strategies developed in a particular professional domain. Another participant has been involved in discussions and forums on youth engagement organised by the National Alliance for Volunteer Action.	

Q2. What motivates the participants to take part in this specific event and methodology?

Brief Summary/Key Points	Notable Quotes
Participants listed the following reasons to get involved in this panel: - **Generation dialogue.** Older citizens are interested in hearing what younger people think and identifying the differences in their way of thinking. This makes them feel up-to-date and well-informed. They do not insulate themselves, but make valuable contacts with a variety of people. - The direct participation in the processes and the **desire to change the environment.** Although this change sets in slowly and painfully, they feel the need to get involved in the process. This is perceived as contributing to the public benefit and the development of society. - **Breaking the daily routine.** Such engagement panels are challenging and different from the typical weekend.	

Q3. What are the participants' expectations and concerns related to the event and methodology?

Brief Summary/Key Points	Notable Quotes
The group expects to participate in an interesting discussion. Some are interested in the topic of nanotechnology itself and expect to expand their knowledge. They think their opinion can make a difference by speeding up the adoption of nanotechnology in our lives. They do not have any concerns about their participation in the discussion. They think that they will be able to freely share their opinion, and will have the opportunity to learn what they don't know yet. They are interested in hearing what other participants have to say.	

Group session 2: Introduction to 'their' sub-domain of R&I

Q4. How knowledgeable participants consider themselves to be in this particular area of research?

Brief Summary/Key Points	Notable Quotes
Participants find the subject extremely provocative. One of the participants is a journalist and has taken an interview from a nanotechnology expert. On this occasion, he had to prepare for the interview by reading articles on the topic. Another participant admitted to not having any knowledge about the issue. It makes her ask herself lots of questions and she wants to know whether nanotechnology would be useful for humanity and environmentally friendly. Each new invention raises concerns that it could be used for a good or a bad purpose depending on whose hands it is in. The word "nano" suggest that it refers to micro technologies and small particles, but it is not clear what exactly their use is. Yet another participant said he had learnt about the topic from films and fiction. He would like to know how much of it is true and when such technologies could be directly used in reality. Participants associate their knowledge about the topic primarily with medicine. The mean grade of the group measuring their knowledge about the topic on a scale from 1 to 5 is 2.5.	

Q5. How relevant do they think this issue is to their everyday life as of nowadays? What about the future?

Brief Summary/Key Points	Notable Quotes
Everyone acknowledges that this area certainly has to be developed and is relevant to a lot of spheres in their everyday life. Citizens, however, emphasised that nanotechnologies will certainly be more relevant for them in the future then they are currently. They mentioned a few fields of application of nanotechnologies, which are highly relevant to citizens' life, such as medicine and environmental protection.	

Q6. How important do they think this issue is for the society as a whole? Why?

Brief Summary/Key Points	Notable Quotes
Citizens see nanotechnologies as very important for societal development and solving current global issues. In particular, they see nanotechnologies as relevant for the further advance in healthcare, construction, ecology, electronics, electrical engineering, and many other areas. The focus is on the type of material used. One of the participants said it would be a positive thing if nanotechnology could be applied in food processing as well. The participants strongly hope the nanotechnologies that could be used for air purification and the decrease of urban pollution will be developed. They think, however,	

that their most important application is the prevention of serious diseases.	

Group session 3: Category of engagement: Citizen Dialogue

Q7. What are the motivations of citizens to take part in the Science Café?

Brief Summary/Key Points	Notable Quotes
The participants who are interested in the issue, would be strongly motivated to join the citizen dialogue. A major motif to participate is the perception that they could learn something new and interesting about science and technology, and the research area's potential development in the future. The topic opens a perspective for new ways of thinking and citizens would want to make a contribution. Even though having little knowledge about the issue, they feel they could contribute to a structured and meaningful citizen dialogue.

A participant shared he would join, driven by the idea of citizen engagement itself. A strong motif to attend is the fact that citizens' opinion will be heard.

Last but not least, even without another motivation, they would join in if the issue of environmental protection is brought forward. | |

Q8. What holds them back from doing so? What are their concerns and perceived obstacles for participation? What could change their position?

Brief Summary/Key Points	Notable Quotes
One of the concerns is the duration of the citizen dialogue. If it is 8 hours or longer, that would be too much and some of the participants would reconsider their decision to take part.

Another factor that could hold people back is the issue itself, which is not an integral part of people's everyday life.

All participants shared the opinion that if a particular sum is mentioned as a financial compensation for taking part, that would be interpreted as an insult and would provoke the suspicion that some people are joining for financial reasons only, and not with the intention of contributing to the process.

Participants did not approve of the text in the invitation mentioning that they will be contacted by phone for further questions. This made them think that their competence would be tested and they expressed concern that there is no information about the nature of these further questions.

The organiser of the event is also a factor that could motivate or hold them back from participating. They find it important whether they know the inviting organisation, whether they have been in touch before, etc. | |

Q9. What do participants see as possible benefits for them personally/the wider public/other stakeholder groups (incl. researchers/policy-makers/other decision-makers)?

Brief Summary/Key Points	Notable Quotes
Being informed on the subject, the feeling of importance, the fact that citizens can contribute and bring about change. Such panels help participants learn how to be tolerant, listen to other points of view, learn new and useful things.	

Group session 4: Category of engagement: Science Café

Q10. What are the motivations of citizens to take part in the presented engagement opportunities?

Brief Summary/Key Points	Notable Quotes
The main motif is personal interest in the topic and getting information about the issue. Nanotechnology is an interesting and fairly unknown subject as far as research and experimentation are concerned, but the opportunity to expand one's knowledge and ask questions is a crucial factor. If the lecturers are proven authorities and attractive speakers it will serve as an additional stimulus to participate at the event.	*"If it was a different topic, say nanotechnology in animal rearing, I would not go because I am not currently interested in this."*

Q11. What holds them back from doing so? What are their concerns and perceived obstacles for participation? What could change their position?

Brief Summary/Key Points	Notable Quotes
The participants showed concern that the invitation did not make it clear what the linguistic level of the lecture would be. Participants would be held back if the language was highly professional, as this would prevent them from comprehending the content. Another obstacle is the subject itself, as it does not have a direct impact on peoples' everyday lives. Additionally, the limit on the number of participants would also demotivate them. As it is not clear in advance how many people will take part, participants thought there could be too many or too few attendees. The invitation does not make it clear how it has reached a particular participant. If one presumes that it was mass mailing, that will be demotivating for lack of personal attitude. Some expressed concern that they could be forced to ask questions. Other obstacles are conflicting engagements and the feeling that one is not prepared for this kind of event.	

Q12. What do participants see as possible benefits for them personally/the wider public/other stakeholder groups (incl. researchers/policy-makers/other decision-makers)?

Brief Summary/Key Points	Notable Quotes
Providing information to citizens is a benefit, as it raises the level of knowledge and capacities of the public in general. This is a new model of presenting information, one gets to know a new range of	*„I will broaden my world view, will learn more, will get educated more."*

people whose views are interesting for participants. The Q&A and the discussion themselves are also of direct benefit to everyone involved.	

Group session 5: Category of engagement: Citizen Evaluation Board

Q13. What are the motivations of citizens to take part in the presented engagement opportunities?

Brief Summary/Key Points	Notable Quotes
All participants shared the opinion that it would be a long-term active engagement, that they would be able to contribute and that their opinions and support would be resorted to during a prolonged period.	*"This format perhaps has the chance of enduring."*
This panel presupposes a more "serious" approach and the way participants interact would be more interesting.	
The fact that the meetings will be at diverse places is stimulating and a pre-condition for the work to be more focused and productive.	
Participants said they dreamed that after the panel is over, they would be able to create and change policies. The change that has been made would be visible, as would be the results between the two phases. Participants would benefit the event more if there is feedback on the level of each person's contributions.	
Quality accommodation and recreational opportunities would additionally motivate people to take part.	

Q14. What holds them back from doing so? What are their concerns and perceived obstacles for participation? What could change their position?

Brief Summary/Key Points	Notable Quotes
Weaknesses that could hold people back are: unclear planning of the meetings, lack of diverse and fresh perspectives as the group of participants stays one and the same, the feeling that the engagement requires commitment and is too long-term.	
One of the participants shared a negative experience from such long-term participation. If there is no consistent interest, the group can fall apart and become unproductive.	

Q15. What do participants see as possible benefits for them personally/the wider public/other stakeholder groups (incl. researchers/policy-makers/other decision-makers)?

Brief Summary/Key Points	Notable Quotes
This is the format that has the greatest potential of direct influence on policies. Citizens would be most satisfied from their engagement. The creation of sustainable contacts and networks is also a good incentive.	*"The diversity of venues in the country would help people be more productive in generating ideas compared to holding the events in their own town. In the latter case their thoughts would*

	immediately return to their everyday routines."

Group session 6: Comparisons of the three forms of engagement

Q16. In a comparative perspective, which opportunity is most/least attracting to participants and why?

Brief Summary/Key Points	Notable Quotes
60% of participants find the third opportunity most preferable. It combines elements of the first two forms of engagement: part of it is a lecture by virtue of which one can acquire new knowledge, but it also offers ample opportunity to share one's opinion. Its results are most tangible, and it enables participants to actively express a civil stance. Citizens are also given the time to get prepared on the subject, to expand their knowledge and to be more productive. The other two formats were also suitable in different contexts and for different purposes, thus, participants could not identify which of the two would be least attracting.	

Q17. Which opportunity brings most benefits to the different stakeholder groups (the public at large, researchers, policy-makers/politicians), etc.?

Brief Summary/Key Points	Notable Quotes
Again, this is the third opportunity for the same reasons.	

FOCUS GROUP 3

Table moderator name	*Kiril Kirilov*
Note taker name	*Konstantin Ivanov*
Number of participants	*6*
Sub-domain discussed by the group	*Synthetic Biology / Bio-economy*

Group session 1 – Warm up

Q1. What experience do participants have with public engagement so far?

Brief Summary/Key Points	Notable Quotes
Part of the group members have participated in volunteering initiatives. Participants testify to being experienced in initiatives such as subscription lists and meetings on various issues, e.g. environmental pollution, relations in the neighbourhood / apartment building, etc. Some of their relatives and friends are also partially experienced in such initiatives.	

Q2. What motivates the participants to take part in this specific event and methodology?

Brief Summary/Key Points	Notable Quotes
One of the motives is that the issues discussed are topical and interesting. Such events are intriguing, as they bring up topics that people don't usually stop to think about. Participants think that the engagement panel would add to their knowledge and that this format is capable of showing people's opinion. Being able to voice a personal opinion is satisfactory. Such events are useful because they provide a forum to learn about particular subjects and issues as well as new facts. Participation in a citizens' panel will allow them to make personal contacts as well. Participation could also mitigate their feelings of anger and helplessness deriving from their previous disengagement. Such engagement is constructive, satisfactory, makes them feel a part of something larger. Engagement panels are the way to change, instigated by citizens themselves. Such change, moreover, is undoubtedly positive.	

Q3. What are the participants' expectations and concerns related to the event and methodology?

Brief Summary/Key Points	Notable Quotes
In general, participants have vague expectations, at least at the start of the session. They expect a beneficial participation, a productive discussion. The group finds emotions important. They are something different from ideas. Emotions will endure, participants claim and add that ideas may fade away, but the experience will remain as an emotion. Being part of the engagement panel is not an	

| embarrassment, but rather a challenge. Participants compared it to being offered to taste something one has never tasted before. They also expect something interesting, exciting, enhancing and meaningful. | |

Group session 2: Introduction to 'their' sub-domain of R&I

Q4. How knowledgeable participants consider themselves to be in this particular area of research?

Brief Summary/Key Points	Notable Quotes
Some participants claim to know what the area covers, giving as examples solar panels, bio-fuels, etc. Others mention that they barely know anything about the research area – they say that they only know the term. Grading their competence in the scale from 1 to 5, the six people arrived at the following results: 3, 2.5, 1, 2, 2, 3. Participants judge the significance of bio-economy by the extent to which it affects energy production. Participants claim that they are aware of the area's importance and of the risks and abuses it is subject to.	

Q5. How relevant do they think this issue is to their everyday life as of nowadays? What about the future?

Brief Summary/Key Points	Notable Quotes
The development of this research area rather does not influence the individuals and their everyday lives. Participants mention again GMO, underlining that there is a kind of mass psychosis concerning GMO food. Their main concerns are that the processes are related to economic interests, rather than aiming to achieve bio-improvement, and that products are developed from mercenary motives. A participant pointed out how widely it is propagated that everything "bio" is healthy and modern. The group agreed that there should be a well-measured risk when developing bio-economical products. Some participants said that bio fuels are not the best solution and that there are less risky ways of energy production. Such an alternative, they said, is solar energy. Other participants claimed that a number of the bio-economical solutions are not applicable in everyday life and are not quite practicable.	

Q6. How important do they think this issue is for the society as a whole? Why?

Brief Summary/Key Points	Notable Quotes
At the start someone said that "society – this is me and my close ones". The participants agreed that the area is important for everyone and for the society in general. They discussed different applications of the area, such as: the use of bio fuels, which they thinks will not necessarily be cheaper and more feasible in the future. Nevertheless, bio fuels' application in everyday life would bring about certain improvements – house heating, affordability, lowering of harmful emissions, a cleaner environment. One of the	

participants assumed that bio fuels may be more expensive than the fuels in current use and this will lead to a decrease of the number of motor cars (since less people would be able to afford to buy fuel, i.e. for financial reasons). The issue of arable land was also brought forward. The cultivation of certain crops could lead to cleaner air, but could also cause de-forestation in the pursuit of more and more arable land. The concern was raised that vital crops growing would be cut off at the expense of specific crops growing. Here, the subject of genetic mutations was raised again as carrying serious risks. Participants think that diseases will grow, rather than diminish in scale as a result of genetic mutations in organisms.	

Group session 3: Category of engagement: Citizen Dialogue

Q7. What are the motivations of citizens to take part in the Science Café?

Brief Summary/Key Points	Notable Quotes
After reading the invitation letter to join the citizen dialogue, several different opinions were formed. The following answers were given to the question "Would you attend this citizen dialogue": "I'd rather not", "yes", "yes", "yes", "I don't know", "I'm not sure". Some participants claimed that if they receive such a letter by email, they would not open it, unless it was sent by a friend or an acquaintance. If it was sent by regular mail, they might as well open and read it. As regards the format, some participants said the letter was too long, which is rather a turn-off, particularly if one is not directly concerned. Another participant pointed out that the details of "when, where, how long, etc." should be placed at the letter's beginning. Yet others said that if the letter called for joining a citizen dialogue and the time overlapped with some personal engagement or their spare time, they would rather not pay any particular attention to it. Those that would go to the event like the fact that the issue will be examined in its complexity, allowing for the discussion of both its prospects and the concerns it raises. An example was given with the paragraph raising the question whether and how research in this area can be promoted, i.e. it is important that citizens are given the opportunity to have their say on socially significant subjects and have the perception that their opinion matters.	

Q8. What holds them back from doing so? What are their concerns and perceived obstacles for participation? What could change their position?

Brief Summary/Key Points	Notable Quotes
According to a participant, one of the obstacles is the fact that the event is planned for a Saturday. He thinks that people's private time is valuable and it is a turn-off to disregard this. Most participants find the compensation not motivating enough. They	

place priority on professional commitments and spending time with their family. Nevertheless, some consider the presence of compensation important enough for certain social groups, such as pensioners, single parents, single people, etc. Other obstacles that may arise are: an unexpected health issue, a previous commitment, some other engagement and the weekend timing of the panel.	

Several suggestions were made concerning the format: to shorten the invitation letter, to place the information about "where, when and how" at its beginning, to include pictures or other visual aids. It was said certain problems may arise from the topic's remoteness and was suggested that the organisers send additional materials to the invitees in advance, so as to provide a broader picture of the issue. The invitation should also mention whether prospective participants should have any previous preparation or at least a certain degree of knowledge about the research area.

Most participants agreed that the event organiser should be a legitimate, trustworthy and recongnisable entity, and also such that will make participants feel safe.

Q9. What do participants see as possible benefits for them personally/the wider public/other stakeholder groups (incl. researchers/policy-makers/other decision-makers)?

Brief Summary/Key Points	Notable Quotes
One of the personal benefits mentioned is the removal of the feeling of helplessness and disengagement on topics "important for us and our close ones".	
Another benefit is the chance to make new personal contacts. The event could also give one a good chance to socialise and spend one's day if one hasn't got any previous plans.	
The financial compensation is also a kind of benefit and should not be underestimated.	
Concerning other stakeholders, participants are sceptical as to how much policy makers are interested and would benefit from the event. One group member said that a potential benefit for policy makers would be ideas for new projects and policy instruments. As could the pending elections, of course.	
It was universally agreed that business representatives would be more interested, taking into account they could explore and open new business niches, expand or improve their business models. A participant said oil tycoons would not be interested (or would even try to hamper such an event), as it would meddle with their business.	
What researchers could gain from the citizen dialogue is an enhancement of their professional expertise, new contacts, knowledge, and exchange of good practices. One of the participants, though, thought such an event would not be of interests to expert researchers.	

Group session 4: Category of engagement: Science Café

Q10. What are the motivations of citizens to take part in the presented engagement opportunities?

Brief Summary/Key Points	Notable Quotes
Some of the participants consider there is a clash of ideas between the terms '*café*' and '*science*'. Others think that setting the event for the late afternoon bears the risk of participants being tired and to some extent not up to par. The whole group thought that most potential participants in this engagement format would attend to listen and learn something, rather than be actively involved. The fact that the names of expert speakers to share information on the latest research were mentioned in the invitation was regarded as a plus. It was generally accepted that the invitation had a more professional look than the previous one (about the citizen dialogue). Most group members would rather join this particular event. One of them said he would not go, while another could not make up his mind. It was considered inconvenient that the event is planned for a week day, that it was not clear how one could reach the venue after the work day, and that possibly all places might be occupied. Some of the older participants were worried that they might have to use a computer to register for the event.	

Q11. What holds them back from doing so? What are their concerns and perceived obstacles for participation? What could change their position?

Brief Summary/Key Points	Notable Quotes
One of the hitches, for some of the participants, was the event being held on a week day. The crucial factor is whether the participant has had a good day and is in good shape after work. The lack of previous knowledge of the research area is not an obstacle, but rather a motivation to join in order to learn something new. A participant claimed that the collocation *science café* automatically reduces the range of people willing to attend by dissuading non-experts from going. The fact that concrete expert names, including research and teaching titles, were mentioned was considered a definite plus. Most participants view themselves in the role of listeners in this citizen panel. Other possible hindrances mentioned were: health issues, the unknown surroundings and attendees, the road repairs that could cause traffic jams.	

Q12. What do participants see as possible benefits for them personally/the wider public/other stakeholder groups (incl. researchers/policy-makers/other decision-makers)?

Brief Summary/Key Points	Notable Quotes
Participants will be able to ask questions and get answers, and hence, broaden their knowledge; they will get information about the issues and progress made in the research area. The speakers will also benefit by learning what citizens think about the research area's development. If policy makers / politicians are present, the focus could be shifted to political issues; however, they should be able to benefit by default, as their main task is policy making. It was	

generally agreed that researchers would benefit most from the event.	

Group session 5: Category of engagement: Citizen Evaluation Board

Q13. What are the motivations of citizens to take part in the presented engagement opportunities?

Brief Summary/Key Points	Notable Quotes
Opinions about the citizen evaluation panel and its benefits for the participants were quite divided. Half of the participants decided that they would rather go to such a panel, while the rest replied with "No" and "Rather not".	
Compensation turned out a strong incentive, as it is a kind of extra income. The possibility was noted that some people may join for the money, rather than for making any contribution.	
A participant considered that the subject's importance is crucial– one could even pay to join such an event given that the subject was of interest.	
Everyone agreed that the organiser of the event is also important.	
Both the time of the event and the whole process are well defined, which was considered an incentive as well.	

Q14. What holds them back from doing so? What are their concerns and perceived obstacles for participation? What could change their position?

Brief Summary/Key Points	Notable Quotes
Some of the participants prefer shorter formats, events in the town where they live and less travel to avoid the effort of planning. Others are worried that it is too much of a responsibility – the evaluation and decision has to do with scientific research and if one is not knowledgeable about the subject, one could not give adequate recommendations and evaluations.	
A participant pointed out that meeting every six months for three days off is too time-consuming and requires a long-term commitment. The event's dates should be made known in advance, so that conflicting engagements are avoided. For some the distance to be travelled is an obstacle to participate.	
Some would not go, unless it is a professional engagement.	

Q15. What do participants see as possible benefits for them personally/the wider public/other stakeholder groups (incl. researchers/policy-makers/other decision-makers)?

Brief Summary/Key Points	Notable Quotes
One of the participants pointed out that it would be a benefit to find good solutions for the various problems. Participants' families would take part indirectly and their opinions could also be shared during the following event in the series, which is also a benefit. According to the group, business people would be too occupied to reserve	

three days for such a meeting. Researchers would benefit from hearing fresh points of view and aspects of the subject.	

Group session 6: Comparisons of the three forms of engagement

Q16. In a comparative perspective, which opportunity is most/least attracting to participants and why?

Brief Summary/Key Points	Notable Quotes
The citizen dialogue turned out most attractive to all participants. The other two formats gained 50% approval, but were rated second in all cases. Despite the contradiction, participants placed the science café before the citizen evaluation panel. The citizen dialogue format takes only a day and includes a financial compensation. The format allows one to participate both as a citizen who is being informed, and as a source of possible solutions for the problems in the area.	

Q17. Which opportunity brings most benefits to the different stakeholder groups (the public at large, researchers, policy-makers/politicians), etc.?

Brief Summary/Key Points	Notable Quotes
The citizen evaluation panel was almost unanimously defined as the most beneficial to the wider public. They underlined that it is the most prolonged, but involves the greatest responsibility and enables the presentation of the widest spectrum of aspects of the research area. What held group members back from joining in was mostly the time this format takes, but they were aware that the subject could be discussed in real depth only given more time. The science café was described as the second most beneficial, perhaps because it was least engaging. Perhaps paradoxically, the group defined the citizen dialogue as the most beneficial in a personal perspective, while the citizen evaluation panel was deemed most beneficial for society. Participants defined citizens themselves as the most interested stakeholder group, as they are directly concerned. Other interested groups listed were: the project implementing organisations, the funding entities, other NGOs, institutions, the administration. Several people underscored that the length and sustainability of the projects is also quite important, as it has a direct impact on the operation of institutions.	

2.2.2   Second citizen panel

1) Please, describe the challenge and the respective policy and practice options you have developed to address it.

Challenge: Citizens are in favour of engagement formats such as Citizen Evaluation Panels but many dread the responsibility and long-term commitment the format implies.

Policy and practice options:

- Option 1: Providing financial incentives for citizen' participation.
- Option 2: Institutionalisation of citizen engagement as a civic duty.
- Option 3: Promoting civic culture favouring active participation in similar formats.

2) Why did you select this challenge and PPOs?
This challenge proved to be especially relevant in Bulgaria. At the first citizen panel meeting all three groups of participants had similar concerns regarding their participation at the Citizen Evaluation Panel. By selecting this challenge, we aimed to elicit insights into how to deal with the two conflicting sentiments of the public, i.e. on the one hand, the desire to be more actively engaged in science and innovation and have an impact on R&I outcomes and processes, and on the other hand, the concern that this most impactful format requires long-term commitment (the invitation letter specified that citizens will take part in several meetings, which take place in the course of 2 years; the format further instills greater citizen responsibility over the outcomes produced, as citizens are assigned a particular role in the decision-making process of funding research proposals.)

The selected PPOs were chosen to bring light into some dilemmas from the first citizen panel meeting and to present to citizens, to a certain degree, alternative views (although they can also be complementary) on how this challenge can be dealt with.

The first PPO focuses on financial rewards for participating. While the provision of a financial incentive has been acclaimed by the majority of participants in the first panel, a lot of them also pointed out to the dilemma that this approach may lead to bringing in people, who are more interested in the financial compensation rather than to genuinely contribute with their views and experiences to the process. Yet, others claimed that financial compensation will allow citizens from a more disadvantaged background (such as pensioners, single parents) to also take part in the engagement processes. In order to bring further light into this dilemma, we chose this as one of the PPO to be presented to citizens.

The other PPO constitutes a strategy for institutionalising citizen engagement as a civic duty, thus, invited citizens are obliged to take part in engagement activities. The option further stipulates that citizens will be entitled to a paid leave for the days of the citizen engagement formats. This PPO provides, to some extent, an alternative to the first one, focusing rather on the obligation / duty of citizens to take part in engagement formats than on incentivising participation. The third PPO envisages the encoding of engagement as part of the civic culture of citizens.

3) Summary of groups' discussions on the challenge
The participants in the groups agreed that the described issue constitutes a challenge for citizen engagement. They further recognised Citizen Evaluation Board as an important form of citizen participation. The participants offered a number of reasons why a person who takes part in a Citizen

Evaluation Board (CEB) might be prevented from participating in all the sessions of the panel (e.g. time conflict with professional engagements). Yet, they also highlighted that if citizens recognise these formats as something that is important and valuable for themselves and the society as a whole, they will be more willing to accept the responsibility and commitment implied by the format. Citizens also agreed on the importance of providing specific information about the duties of the members of the Citizen Evaluation Board, such as what, when and how is going to happen, as well as a schedule with the planned dates in advance.

The first PPO, namely providing citizens with financial stimuli to take part in CEB, was generally approved by the participants, yet many emphasised that the financial incentive can be an important but should not be the major reason to take part in the panel. In order to allow for participants from more disadvantaged background to participate in similar events, financial compensation is critical. Yet, this is an option which cannot and should not be the only incentive for citizens to be engaged. It should be implemented in parallel with other initiatives, such as awareness raising about the importance of citizen engagement for the quality of R&I outcomes as well as stimulating the perception of engagement as part of the civic culture.

Citizens' opinions regarding the second PPO were more incongruent than the ones on the first PPO. While all participants reacted positively to the idea of providing citizens with paid leave for the days of the engagement activities, many participants disapproved the institutionalisation of engagement as an obligation, stressing that it should be a voluntary and not compulsory activity (in their words, it should be a right, not an obligation).

In respect to the right of paid or unpaid leave (participants couldn't agree whether it should be paid or unpaid), it was suggested that employers should be stimulated to put greater value on engagement events and should be aware that engagement promotes developing a range of soft skills and competencies in their employees, such as interpersonal skills, presentation skills, etc. The right to a leave can be arranged as part of the Labour Code, such as the leave allowed for a wedding, blood donation, etc. Yet, the number of days per year should be restricted. Some citizens further elaborated that citizen engagement can be institutionalised as part of the national level lifelong learning strategies and supported by EU funding programmes.

Participants further stressed on the importance to seek support in the implementation of the respective policy option by all stakeholders involved, including the employers themselves in order to ensure their successful implementation and positive outcomes.

The third PPO, related to stimulating civic culture and the recognition of citizen engagement as a key part of it, also gained a large number of proponents among the participants. They emphasised that the process of recognising engagement as part of the system of values defining civic culture would be a long and cumbersome process. Thus, participants proposed that it should start with working with the young people. They should be empowered to engage in such initiatives, for example by organising panels in schools and universities, where pupils are given the opportunity to express their views on the topic at stake.

In order to build and foster civil consciousness people should be systematically informed. They should see that their opinion is heard. Trust between participants and event organisers is also important. CEB's participants should be granted access to libraries, websites and materials for additional training in case of long-term commitment.

In regard to the stakeholders who would be involved in implementing the respective PPO, the participants mentioned national and local authorities, NGOs, engagement practitioners, academia, trade unions and citizens themselves. They often also highlighted the role of the European institutions as well which, according to the participants, should promote engagement through regulatory acts and funding instruments.

As further PPOs to be considered in dealing with the particular challenge, citizens also stressed the importance of recruiting an extra number of citizens to be involved in the process if there is anybody who has to discontinue his/her engagement due to personal circumstances. These extra citizens could be involved in the meetings as listeners and substitute somebody if the need arises.

Another suggestion was to use surveys/polls online to gather a database of a large number of volunteers for such citizen boards. In this way, citizens will also be able to choose topics which are of interest to them.

Challenge 2

1) Please, describe the challenge and the respective policy and practice options you have developed to address it.

Challenge: Citizens often feel insufficiently prepared and/or knowledgeable to take part in discussions related to science and innovation. According to some, citizens without expert knowledge cannot and should not take part in decision-making processes in the field of science and innovation.

Policy and practice options:

- Option 1: Information sessions and distribution of information materials are provided prior to the engagement event.
- Option 2: Organisers specify in the invitation whether citizens should have any prior knowledge and experience in the topic.
- Option 3: Conducting parallel or joint consultations with experts (scientists, business, etc.).
- Option 4: Wider coverage in the media, encouraging museums etc.

2) Why did you select this challenge and PPOs?
A lot of citizens in the Bulgarian first citizen panel meeting expressed concern that they might not have sufficient knowledge to take part in discussions on scientific topics in the different engagement formats. Some worried they will need to ask questions on topics they are not familiar with. With presenting this challenge to the participants, we wanted to get more insights into how this perception of citizens can be changed, to what extent is this an issue for them and, above all, once again verify that citizens want to have a role in R&I processes and want to have their voices heard, as was suggested by the results of the first citizen panel in Bulgaria.

3) Summary of groups' discussions on the challenge
The majority of citizens do not consider the lack of knowledge in a specific area as a serious challenge for engagement. According to them citizens should be moderately informed about the issue at stake in order to express an opinion and a position on a topic. Some of the participants emphasised that when a person is not professionally engaged in a certain field, one can provide a different viewpoint, which brings in more creativity and innovation to the R&I processes.

Citizens to a large extent agreed with the need to implement the first two options presented to them. They agreed that providing information prior to the event (in a form of information leaflet) would be helpful to some citizens and would give them greater confidence in discussing the issues at stake. They further suggested that organisers should provide subject-matter information to the participants (in language which is accessible for lay citizens) as an introductory session to any engagement event. This is considered the most efficient way to inform citizens prior/during the actual engagement.

Providing clear instructions in the invitation for participation as to the level of knowledge citizens should have in the specific area to be able to partake in an engagement format was seen by participants as an effective way to boost the interest in engagement events.

The third option provoked heated debates in regard to the joint participation of experts and lay citizens in engagement events. Many acknowledged that if experts attend engagement formats together with citizens they will be able to provide subject-matter information and correct any misunderstandings and misconceptions citizens might hold in regard to the issue at stake. Others, however, stressed on the negative impact experts might have on citizen engagement events. These include: i) citizens might feel intimidated during the discussions; ii) experts might try to manipulate the discussions and thus the immediate outputs of the event.

In regard to the fourth option, participants generally approved its implementation. Yet, they also emphasised that media coverage of scientific issues is not what is most important. Rather, it matters more *how* media cover scientific topics. Citizens gave an example with documentaries which are not well done and scare citizens away from the issue. On the contrary, a well thought documentary can help citizens understand why the issue at stake is relevant to them and can motivate their interest in the topic. Celebrities can also attract lay citizens' attention.

Besides scientific issues, media should also cover citizen engagement events and other forms of participation. The role of online and social media was also highlighted as essential, especially in targeting the younger audience. Media should be encouraged to cover scientific discoveries, youth activities and other topics which foster civic culture in citizens in general. It was admitted that media lack interest in covering these issues. Government intervention was required in this regard.

The active role of citizens themselves to seek information was also mentioned as essential.

Panellists also urged for a closer contact between scientists and citizens, via the organisation of e.g. open lectures/events outside of the universities as well as seeking novel approaches to popularise the work of scientists among the wider public. The role of schools in fostering youngsters' interest in science (also by greater cooperation with actors, such as businesses, health care facilities and others), as well as in teaching children to be engaged citizens was also emphasised by the participants.

Challenge 3

1) Please, describe the challenge and the respective policy and practice options you have developed to address it.

Challenge: Perceived distance between science and society.

Some citizens perceive a certain distance between scientists and the wider public that makes scientists and their research seem inaccessible. This perception may result in a respectful or even fearful attitude of people towards science.

Policy and practice options:

- Option 1: Use formats which incorporate fun and interactive elements (e.g. theatre) to enhance the understanding and interaction between scientists and the public.
- Option 2: Improve incentives for scientists to engage with citizens (via e.g. public lectures, media appearances, Night of the Sciences, engagement formats, etc.).
- Option 3: Promote media coverage of scientific topics.

2) Why did you select this challenge and PPOs?
This challenge has been presented to the citizens taking part in the Bulgarian citizen panel due to its great relevance to the Bulgarian context. We wanted to hear from citizens themselves whether they perceive this as a challenge for public engagement and what would be the approaches to address this challenge. The presented PPOs have been inspired by the Expert workshop in Sofia. Citizens were encouraged to share their ideas on how this obstacle can be overcome.

3) Summary of groups' discussions on the challenge

All participants agreed that there is a distance between science and society. There was, however, disagreement regarding to what extent this is a challenge for public engagement. While some see this as a barrier for the improved communication between science and society at large, saying that scientists are staying in their closed circles and are not searching for contact with citizens, others stated that this is normal (such as in arts – not everyone is interested in arts) and, thus, should not be considered a challenge. There was also a disagreement as to which actors bear the responsibility for the distance between science and society. For some, the distance is due to lack of interest in science among citizens, for others, it is due to the lack of initiative by scientists to communicate with citizens.

Overall, citizens express a moderate endorsement of the first option. While they approve the inclusion of entertaining and interactive elements in science communication projects, they also warn against science going 'down' to the public, rather than the public going 'up' to science, in other words – science should not be commercialised and simplified to be made understandable for citizens. Rather citizens should be educated in order to understand real science. Using formats (such as ted.com) which translate scientific discoveries to the public and using accessible language were also highlighted as very important.

In regard to the second option, in general participants agreed that incentives need to be provided to scientists to more actively engage with citizens. A few participants, however, shared that according to them citizens should be stimulated to seek contact with science rather the other way around.

As possible incentives to scientists, citizens pointed out to the following: i) citizens becoming advocates for scientific causes; ii) feedback from citizens to the relevance of scientific research; iii) attestation provided from universities to scientists who have taken part/organised engagement activities. Stimuli should be created for the institutions as well, not just for individual scientists.

As a potential obstacle for the successful implementation of this option many pointed out to the increasing average age of scientists in Bulgaria, thus, intergenerational differences and difficulties in communication. Furthermore, according to the participants, many scientists lack skills for making interesting presentations. Thus, it was suggested that institutions should have their own departments for science communication.

One way to approach the particular challenge, according to a number of citizens, is presenting scientists as citizens themselves. Another effective measure would be to organise international workshop for scientists to exchange good practices in citizen engagement in research and innovation.

Messages

GROUP 1

What needs to be done to make citizen engagement in R&I (more) attractive?

The message of the first group responded to Challenge 2, namely "Citizens often feel insufficiently prepared and/or knowledgeable to take part in discussions related to science and innovation. According to some, citizens without expert knowledge cannot and should not take part in decision-making processes in the field of science and innovation".

1) Explain scientific information in an accessible for lay citizens language – by engagement practitioners, researchers;
2) Prepare information materials for citizens prior to the engagement even – by engagement practitioners and their partners;
3) Clearly specify in the invitation whether citizens should have any specialised knowledge and in the topic – by engagement practitioners and thematic experts;

4) Choose suitable moderator and presenters and media to broadcast the results – by engagement practitioners and media representatives.

GROUP 2

What needs to be done to make citizen engagement in R&I (more) attractive?

The message of the first group responded to Challenge 3, namely "Perceived distance between science and society. Some citizens perceive a certain distance between scientists and the wider public that make scientists and their research seem inaccessible."

1) Stimulate civic culture in schools.
2) Involve museums and libraries in the efforts to popularise STI topics.
3) Promote the collaboration between businesses and scientific institutions.
4) Scientists should go out of their offices and put efforts to actively popularise their work, e.g. through open laboratories in the city centre.
5) Media should play an active role by broadcasting scientific achievements and their application in the everyday life of people.
6) Citizens should be active as well. They should communicate to scientists which are the topics which are of interest and use to them.
7) Experts should be present at events for discussing scientific issues among citizens.

Who should do it?

National and local authorities, educational institutions (schools and universities), citizens, engagement practitioners, businesses.

GROUP 3

What needs to be done to make citizen engagement in R&I (more) attractive?

The message of the first group responded to Challenge 1, namely "Citizens are in favour of engagement formats such as Citizen Evaluation Panels but many dread the responsibility and long-term commitment the format implies".

1) Initiate an information campaign to explain why citizen participation in R&I is important.
2) The participation in the Citizen Evaluation Board should be incorporated into the Lifelong learning concept.
3) Introduce changes to the labour law, ensuring that each citizen can take a number of days off for partaking in such engagement formats.
4) Provide citizens with a certificate for participation.
5) Raise awareness among employers on the benefits of participation for the employees.
6) Attract celebrities to the cause. They can explain in an understandable language why it is important to take part in engagement events.

Who should do it?

Citizens, NGOs, media and celebrities, national and local authorities, businesses, engagement advocates, EU policy-makers.

2.3   Germany

Authors: Partner USTUTT (Christian Hofmaier and Jürgen Hampel)

2.3.1   First citizen panel

FOCUS GROUP 1

Table moderator name	*Christian Hofmaier*
Note taker name	-
Number of participants	*6*
Sub-domain discussed by the group	*Nanotechnology*

Group session 1 – Warm up

Q1. What experience do participants have with public engagement so far?

Brief Summary/Key Points	Notable Quotes
For the majority of the group it is the first participation in a public engagement event. Some participated in market research events and online surveys.	

Q2. What motivates the participants to take part in this specific event and methodology?

Brief Summary/Key Points	Notable Quotes
Most were interested in the concept of the event because it was something they did not know it existed. Two participants mentioned the compensation made the decision to participate easier.	

Q3. What are the participants' expectations and concerns related to the event and methodology?

Brief Summary/Key Points	Notable Quotes
Some participants were concerned that they would not know enough about the research domain to make valuable contributions to the discussion. The group was open for the unknown methodology and some expressed their delight that the voice of citizens is heard in this context. At the same time, they were concerned about the impact of such an event.	

Group session 2: Introduction to 'their' sub-domain of R&I

Q4. How knowledgeable participants consider themselves to be in this particular area of research?

Brief Summary/Key Points	Notable Quotes
The participants considered their own level of knowledge in nanotechnology as low. Some knew about consumer products like cars or chip coating in mobile phones where nanotechnology is used and one basic concept (the lotus effect). Beyond that, the	

participants had not come in contact with nanotechnology or discussions about it.	

Q5. How relevant do they think this issue is to their everyday life as of nowadays? What about the future?

Brief Summary/Key Points	Notable Quotes
The participants deemed nanotechnology not relevant for their everyday life nowadays.	

Q6. How important do they think this issue is for the society as a whole? Why?

Brief Summary/Key Points	Notable Quotes
For the society as a whole regarding innovation and future developments it will become more relevant. They were of the opinion that there are new possibilities, yet undetected or not communicated to the wider public, which will have positive effects. But risks and side effects should be considered during this development. An unmonitored innovation process and undifferentiated reports on new developments are considered not tolerable. Some participants thought that this technology will become more important but that it would take a long time before effects on society were visible. Others were of the opinion that this development will occur in a nearer future.	

Group session 3: Category of engagement: Citizen Evaluation Board

Q7. What are the motivations of citizens to take part in the Citizen Evaluation Panel?

Brief Summary/Key Points	Notable Quotes
• Most of the participants considered the possibility to take responsibility and to influence research funding decisions with their input as main motivation. The invitation letter gave them well-structured information about the tasks and was clear about what was expected of them and how their input will be used. The impact would make a participation worthwhile although they are no experts in the field. • The personalised invitation made the event more attractive. The participants would not enlist themselves on their own account if they came in contact with the evaluation panel event via general call. • The organising institution lends credibility to the event.	

Q8. What holds them back from doing so? What are their concerns and perceived obstacles for participation? What could change their position?

Brief Summary/Key Points	Notable Quotes
• Expenses like travel costs, accommodation and a small allowance would have to be met, but the event should not be sponsored by a company.	

• The participants disagreed about the right amount of time consumed: For some, when interested in the topic, the amount of time spent was appropriate, some wanted to meet more. A combination between live meetings (maybe in different cities across the country) and online meetings was proposed). • The number of people on the panel was deemed too small and not representative. They proposed a two level design (nationwide/regional was often proposed, with representatives of the regional groups in the evaluation board). It could also be supported by online meetings, so the time spent for travelling is reduced. • Some participants feared that they would have not enough knowledge on the subject to make informed decision. The fear of making the wrong decisions pro or contra a research proposal and thus hindering the innovation process was present. This is closely linked to the fear of making decisions based on 'shiny', well presented proposals rather than on the contents of research projects.	

Q9. What do participants see as possible benefits for them personally/the wider public/other stakeholder groups (incl. researchers/policy-makers/other decision-makers)?

Brief Summary/Key Points	Notable Quotes
The group was of the opinion that there are only benefits if the citizens are taken seriously. That said, the participants appreciated that they could have their say and be heard and that they could take responsibility (respectively society can take responsibility in such matters). Additionally, on a personal level, the long duration of the panel enables them to become familiar with the research field and gain insights and knowledge.	

Group session 4: Category of engagement: Science Café

Q10. What are the motivations of citizens to take part in the Science Café?

Brief Summary/Key Points	Notable Quotes
• The event is only attractive for those who are already interested in the topic. • The duration, venue and event design favours a decision to participate on a short notice. • The event provides (hopefully) condensed knowledge from different perspectives in a short amount of time. However, such an information event creates no commitment.	

Q11. What holds them back from doing so? What are their concerns and perceived obstacles for participation? What could change their position?

Brief Summary/Key Points	Notable Quotes
• The event is only attractive for those who are already interested in the topic and therefore for a small target group.	

- At such events, there is no time for a real discussion with other participants and there are too many information events already present: A question and answer session is no real discussion and the voiced concerns, values and expectations have no impact whatsoever. For all those willing to spend more time on the issue the time for discussion should be much longer (with an officially announced possibility to leave for the ones who don't want to stay that long).
- Other resources like the internet could be used to gather the information given on such an event with less effort. Such information events create no commitment.
- If it is designed as a kick-off or recruiting event for other engagement methods with a higher level of real participation, the format would create more commitment.
- The flyers are a waste of paper if they come with the daily mail because they would be considered as spam along with all the other advertisements. They are only useful in specific contexts like libraries. Such kind of events should not be standalone events where the organisers wait that interested people come to them. Rather the organisers should conduct such events in places and contexts where interested people already are.

Q12. What do participants see as possible benefits for them personally/the wider public/other stakeholder groups (incl. researchers/policy-makers/other decision-makers)?

Brief Summary/Key Points	Notable Quotes
The event provides (hopefully) condensed knowledge from different perspectives in a short amount of time. The group could not find other benefits apart from this.	

Group session 5: Category of engagement: Citizen Dialogue

Q13. What are the motivations of citizens to take part in the Citizen Dialogue?

Brief Summary/Key Points	Notable Quotes
• The personalised invitation made the event more attractive. It creates commitment. The participants would not enlist themselves on their own account if they came in contact with the evaluation panel event via a general call for participation. • The opportunity for a citizen to have an impact on policy was appealing to the whole group. The event shows that politicians are interested in what the citizens have to say. But opinions deferred on whether the time is enough to tackle an issue like this. • The organising institution lends credibility to the event.	

Q14. What holds them back from doing so? What are their concerns and perceived obstacles for participation? What could change their position?

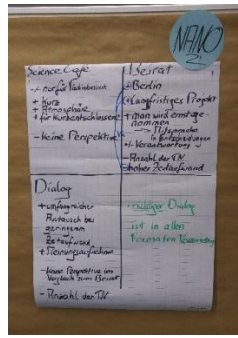| Brief Summary/Key Points	Notable Quotes
• Although the event shows that politicians are interested in what the citizens have to say, there were some doubts that	

that kind of event is just an alibi. There should be feedback in regard to: i) what happened to the results in the end and ii) a reasonable justification if citizens' proposals were not taken into account. • Travel costs have to be met and a small allowance should be paid. • The number of people was deemed too small and not representative. • The duration of the event (8h) is too long. • The group was divided concerning the right amount of information in the letter. For some, it was too much and confusing information, whereas others would like to be provided more information.	

Q15. What do participants see as possible benefits for them personally/the wider public/other stakeholder groups (incl. researchers/policy-makers/other decision-makers)?

Brief Summary/Key Points	Notable Quotes
The stated personal benefits were the possibility to voice their own fears and concerns about the issue at hand and the possibility to become familiar with a complicated research area. An event like that could foster the individual enthusiasm for engagement activities and research in general. The wider public would be more at ease with new technologies if they were sure that their concerns were taken seriously.	

Group session 6: Comparisons of the three forms of engagement

Q16. In a comparative perspective, which opportunity is most/least attracting to participants and why?

Brief Summary/Key Points	Notable Quotes
The least appealing engagement event was the science cafe, because it was not seen as participation but a source of information only (and there are many other ways to gather information). Overall, the most appealing was the evaluation panel, because there lay the most potential to participate, which would be worthwhile irrespective of the issue. In the end, they proposed a combination of citizen dialogue (regional level) and evaluation panel (national level) with representatives of the regional citizen dialogues to tackle the mentioned barrier of the small number of people in the evaluation panel. Two favoured the Citizen Dialogue.	

Q17. Which engagement opportunity brings most benefits to the different stakeholder groups (the public at large, researchers, policy-makers/politicians), according to the participants?

Brief Summary/Key Points	Notable Quotes
Again, the Evaluation Panel, as it was considered an engagement method with a clear mandate and impact. There was fear that the Citizen Dialogue is just an 'alibi'.	

FOCUS GROUP 2

Table moderator name	*Jürgen Hampel*
Note taker name	*Julian Koepff*
Number of participants	*6*
Sub-domain discussed by the group	*Synthetic Biology / Bio-economy*

Group session 1 – Warm up

Q1. What experience do participants have with public engagement so far?

Brief Summary/Key Points	Notable Quotes
Most of the group have not participated in public engagement events so far. Some of the participant were familiar with the general concept, other knew about similar events in market research. Two were not aware these events.	*'I am surprised that such things exist.'*

Q2. What motivates the participants to take part in this specific event and methodology?

Brief Summary/Key Points	Notable Quotes
One participant stated that the allowance was a main factor. For most of the others it was the possibility to voice their opinion and that it is taken into account. Curiosity and the possibility to gain insights into actual research and research policy in general was also an incentive to participate.	

Q3. What are the participants' expectations and concerns related to the event and methodology?

Brief Summary/Key Points	Notable Quotes
The participants expected to learn something new, in particular on how citizen participation in research works and how citizens can contribute to the decision making processes. The design of the event is better than expected.	*'I imagined, we would all sit around a long table in a very stiff setting and try to discuss with choice words about matters, on which we have no clue about.'*

Group session 2: Introduction to 'their' sub-domain of R&I

Q4. How knowledgeable participants consider themselves to be in this particular area of research?

Brief Summary/Key Points	Notable Quotes
No one in the group deemed himself/herself knowledgeable in this field. It is an unknown research area for them. Only one remembered something from a TV show.	

Q5. How relevant do they think this issue is to their everyday life as of nowadays? What about the future?

Brief Summary/Key Points	Notable Quotes
The attitude towards synthetic biology was overall positive. The group was of the opinion that creating energy out of alternative	

sources should be relevant for everyone. That it is not relevant nowadays but promising for the future.	

Q6. How important do they think this issue is for the society as a whole? Why?

Brief Summary/Key Points	Notable Quotes
Additionally, it would be important for society to know more about risks and consequences. Only with sufficient knowledge, society can decide if synthetic biology should become more relevant.	

Group session 3: Category of engagement: Citizen Evaluation Board

Q7. What are the motivations of citizens to take part in the Citizen Evaluation Panel?

Brief Summary/Key Points	Notable Quotes
• The group found the personalised invitation letter appealing. • Some of them had personal interest in energy gaining processes. • Most of the participants considered the possibility to take responsibility and to influence research funding decisions with their input as main motivation; even those who were not interested in the issue itself. • The amount of time was seen as adequate and travelling to the capital appealed to most of the group.	*'It is a good feeling to be taken seriously.'*

Q8. What holds them back from doing so? What are their concerns and perceived obstacles for participation? What could change their position?

Brief Summary/Key Points	Notable Quotes
• The low representativeness of the event was a big issue for the group. They considered 20 participants too few. They proposed a mix of regional and national panels. • Besides the numbers, the participants were not sure if they would be competent enough to decide about huge amounts of money and preferred to leave the decision to experts. In the end, a mix of experts and lay people was proposed. • There has to be a possibility for people with kids (child care) during the time of the event. Otherwise for those people it would be impossible to participate. • It is difficult for young people and people with job responsibility at weekends to participate in such events. • The possible decline after showing the will to participate because of demographic reasons was an affront for some.	*'For me, that's not engagement […] There have to be more people involved.'* *'That's only one per Bundesland plus four others.'*

Q9. What do participants see as possible benefits for them personally/the wider public/other stakeholder groups (incl. researchers/policy-makers/other decision-makers)?

Brief Summary/Key Points	Notable Quotes
Researchers would benefit from new perspectives.	

Group session 4: Category of engagement: Science Café

Q10. What are the motivations of citizens to take part in the Science Café?

Brief Summary/Key Points	Notable Quotes
• It is free for all • Time, setting and venue • Known moderator • Experts with different backgrounds and presentations from different perspectives promise an intriguing discussion between the experts • Personal interest in the issue	

Q11. What holds them back from doing so? What are their concerns and perceived obstacles for participation? What could change their position?

Brief Summary/Key Points	Notable Quotes
• Only an information event. The opinions of the participants do not count. There is no impact on anything. • No real discussion between participants and experts is possible in such a short time. • The invitation is not personal. It is not visible enough in a flood of invitations for similar events. • There are other sources where the same information can be gathered with less effort. • Without commitment and resulting impact of the event the only real motivation for participation in this kind of event would be to be interested in the topic.	

Q12. What do participants see as possible benefits for them personally/the wider public/other stakeholder groups (incl. researchers**/policy-makers/other decision-makers)?**

Brief Summary/Key Points	Notable Quotes
• Personal benefits: entertainment, information • No benefit for society because it is no engagement. Maybe as starting point for a debate.	*'It's like an entertainment talkshow.'*

Group session 5: Category of engagement: Citizen Dialogue

Q13. What are the motivations of citizens to take part in the Citizen Dialogue?

Brief Summary/Key Points	Notable Quotes
• The personalised letter of invitation was important for the participants. In contrast to the invitation for the Science Café, it creates commitment. • The introduction to the research at hand delivered by scientists made them confident that they would be able to come to an informed decision. The design promised to offer interesting and serious discussions. • The mention of the ministry as the receiver of the output lends credibility to the event. The opportunity for a citizen to have an impact on policy was appealing to the whole group. The event shows that politicians are interested in what the citizens have to say. But there were some doubts about the actual impact (see below).	*'We should have definitely more citizen engagement. And we only get started if we'll do it [ourselves].'*

Q14. What holds them back from doing so? What are their concerns and perceived obstacles for participation? What could change their position?
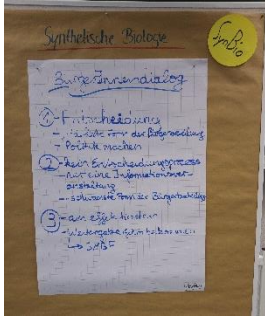
Brief Summary/Key Points	Notable Quotes
• Although the event shows that politicians are interested in what the citizens have to say, there were some doubts that that kind of event is just an alibi. There should be feedback in regards to: i) what happened to the results in the end and ii) a reasonable justification if citizens' proposals were not taken into account. • Regarding the method design, a combination between citizen dialogue and evaluation panel would be appealing. Again, 20 people are way too few and it would be more sensible if there were such dialogues across the nation. • The information on allowance should be more precise and the invitation should be easier to read. • A big issue was the duration of the event. The whole group agreed that eight hours for one day is too much and that it would be a reason for not participating.	

Q15. What do participants see as possible benefits for them personally/the wider public/other stakeholder groups (incl. researchers/policy-makers/other decision-makers)?

Brief Summary/Key Points	Notable Quotes
• For the group, possible personal benefits were the gain of knowledge, the discussion with and learning from experts and their possible impact on politics. • Policy makers would gain insights into citizens' opinions and be provided with a basis for decision-making. • More events of that kind could be the basis for a more and more ongoing engagement culture.	

Group session 6: Comparisons of the three forms of engagement

Q16. In a comparative perspective, which opportunity is most/least attracting to participants and why?

Brief Summary/Key Points	Notable Quotes
For the whole group, the least attracting opportunity is the science café because it is an event for information only. They would prefer the evaluation panel, as the method with the highest engagement level, but they did not feel competent enough to decide on single and highly complex research proposals. So the most sensible format for the whole group is the citizen dialogue, which provides tasks with which the participants are confident.	*'The most appealing is the evaluation panel, the most sensible the citizen dialogue.'*

Q17. Which engagement opportunity brings most benefits to the different stakeholder groups (the public at large, researchers, policy-makers/politicians), according to the participants?

Brief Summary/Key Points	Notable Quotes
See above	

FOCUS GROUP 3

Table moderator name	*Sarah Wist*
Note taker name	*Julia Zürn*
Number of participants	*6*
Sub-domain discussed by the group	*Food & Health*

Group session 1 – Warm up

Q1. What experience do participants have with public engagement so far?

Brief Summary/Key Points	Notable Quotes
Some members of the group had experiences with engagement events in the past, e.g. in the context of building a new train station (Stuttgart 21), redesigning a square in the city or the implementation of a new school system (Ganztagsschule).	

Q2. What motivates the participants to take part in this specific event and methodology?

Brief Summary/Key Points	Notable Quotes
For some, the main motivation was pure curiosity or the interest in issues around the domain food & health. Another motivation was to support science and use the opportunity to voice one's opinion. One participant stated that in some milieus science and engagement were non-existent, respectively play no important role at all and he/she wanted to take the chance to participate.	

Q3. What are the participants' expectations and concerns related to the event and methodology?

Brief Summary/Key Points	Notable Quotes
The main expectations were to gain knowledge about the research domains and experience an engagement event at first hand.	

Group session 2: Introduction to 'their' sub-domain of R&I

Q4. How knowledgeable participants consider themselves to be in this particular area of research?

Brief Summary/Key Points	Notable Quotes
Most of the participants consider themselves as experienced in the food and health domain. They gained their knowledge through documentaries on TV and in print media or own experiences with diseases. They named several examples of burning issues in the food and health domain on their own accord.	

Q5. How relevant do they think this issue is to their everyday life as of nowadays? What about the future?

Brief Summary/Key Points	Notable Quotes
The whole group deemed the research domain food and health highly relevant. Many diseases like adiposity and diabetes can be	

results of wrong nutrition. And with rising costs of the healthcare system, it is a financial issue, too.
With the situation in the US in mind, where there is a high rate of obesity, food and health will definitely stay relevant in the future for individuals and societies all around the world.

Q6. How important do they think this issue is for the society as a whole? Why?

Brief Summary/Key Points	Notable Quotes
See above. Society faces and will face many challenges now and in the future. The most relevant in the opinion of the group is the reduction of sugar in consumer products.	

Group session 3: Category of engagement: Citizen Evaluation Board

Q7. What are the motivations of citizens to take part in Evaluation Panel?

Brief Summary/Key Points	Notable Quotes
• For the group there are burning issues concerning food and health, with diabetes and obesity posing a threat to society. Therefore they want to support research in that area and be part of the process. The very informative, personalised letter of invitation appealed to most of them (for the others, the text was too long). • Expenses like travel costs, accommodation and a small allowance should definitely be met. • The time spent (two times a year) seemed adequate to most members of the group.	

Q8. What holds them back from doing so? What are their concerns and perceived obstacles for participation? What could change their position?

Brief Summary/Key Points	Notable Quotes
• While the actual time spent working in the process was deemed adequate, the binding participation for two years seemed too long. Too much could change in one's personal life in that time. The group proposed 1 or 1 ½ year binding participation with an option to participate for the whole duration. • The group was of the opinion that it would be difficult for people with families or with job obligations to participate on weekends and in holiday seasons. But they should not be excluded. • A big issue for the group was the number of participants. The group wanted more people on the panel and an engagement event in every Bundesland because otherwise it would not be representative.	

Q9. What do participants see as possible benefits for them personally/the wider public/other stakeholder groups (incl. researchers/policy-makers/other decision-makers)?

Brief Summary/Key Points	Notable Quotes

Personal benefits mentioned were the contribution to new developments and the gain of knowledge. The society would only benefit if the contributions were heeded. Policy makers would gain insights into the citizens' opinions. If not informing policy makers' decisions at least it would make them think.	

Group session 4: Category of engagement: Science Café

Q10. What are the motivations of citizens to take part in the Science Café?

Brief Summary/Key Points	Notable Quotes
The event is not time consuming, both in duration and time needed to get to the local location. Much information in one or two presentations with the possibility to discuss the topic at the end.	

Q11. What holds them back from doing so? What are their concerns and perceived obstacles for participation? What could change their position?

Brief Summary/Key Points	Notable Quotes
• There exist too many information events (e.g. organised by hospitals or health insurance companies). • No allowance. • No possible impact on anything. • There are other sources for getting information like books/papers, internet. • The event is scheduled too late in the evening and Fridays would be better. • Flyers are a waste of paper (bad for the environment), better promotion via other ways.	

Q12. What do participants see as possible benefits for them personally/the wider public/other stakeholder groups (incl. researchers/policy-makers/other decision-makers)?

Brief Summary/Key Points	Notable Quotes
Personal benefits: New information/knowledge about the research field without it being organised from a company (e.g. for a market research), being able to express criticism. Such a dialogue is useful for everyone who has to rely on alternative products due to allergies and diseases.	

Group session 5: Category of engagement: Citizen Dialogue

Q13. What are the motivations of citizens to take part in the presented engagement opportunities?

Brief Summary/Key Points	Notable Quotes
• The letter is informative. • It is not that time consuming as the evaluation panel (only one date and the event is local). • The emphasis on 'Your opinion counts' is seen as positive. Citizens feel taken seriously. • The discussion with researchers promises to be interesting.	

Q14. What holds them back from doing so? What are their concerns and perceived obstacles for participation? What could change their position?

Brief Summary/Key Points	Notable Quotes
- A bit too much information in the letter; participants would feel overwhelmed. - The issue is too narrowly defined with no possibility for the participants to influence. - More people should be engaged. 20 people is too few. - The details of the allowance and compensation should be mentioned in the letter (including lunch). 9°°-17°° (8h) is too long for one day.	

Q15. What do participants see as possible benefits for them personally/the wider public/other stakeholder groups (incl. researchers/policy-makers/other decision-makers)?

Brief Summary/Key Points	Notable Quotes
There is only benefit if there is sustainable impact. Otherwise, it will always raise question about whether the issue at hand is worth the time.	

Group session 6: Comparisons of the three forms of engagement

Q16. In a comparative perspective, which opportunity is most/least attracting to participants and why?

Brief Summary/Key Points	Notable Quotes
The participants see the Science Café only as another possibility of getting information, among many others, thus for them it is the least attractive format. In regards to both the evaluation panel and the citizen dialogue, participants criticise the small number of participants, but if these would be conducted in more cities at the same time, they would approve both formats. The citizen dialogue was deemed to be more sensible because the commitment of two years in the case of the panel is too long.	*"Why should these formats be separate? They complement each other."*

Q17. Which engagement opportunity brings most benefits to the different stakeholder groups (the public at large, researchers, policy-makers/politicians), according to the participants?

Brief Summary/Key Points	Notable Quotes
Both the panel and the dialogue were deemed to create the most impact and thus were considered most beneficial for every group.	

2.3.2   Second citizen panel

1) Please, describe the challenge and the respective policy and practice options you have developed to address it.

Challenge: There is a perception among citizens that a small group of 20 people (e.g. in citizen evaluation board and citizen dialogue) cannot have an impact, as it is not representative.

Policy and practice options

- Option 1: Communicate important information about sampling during recruiting already (spread awareness that no representativeness is sought, but only a certain diversity to reveal the different perspectives on the issue). This could be done, for instance, through internet links, through which potential participants could find this information even prior to taking a decision whether to participate.
- Option 2: As far as possible, link offline (face-to-face) engagement formats with online formats. This will allow combining the strengths of both approaches, including the wider outreach of offline formats.
- Option 3: Combine engagement of citizens with engagement of other actor groups, as in practice, engagement formats do show this complexity.
- Option 4: Explain what impact the engagement formats will (not) have.

2) Why did you select this challenge and PPOs?
The issue of a lack of representativeness in the case of the formats of the evaluation panel and of the citizen dialogue was emphasised across groups during the first citizen panel meeting. In their opinion such a small number of people could not decide on behalf of the whole country. The participants proposed a mix of online and offline formats to reach more people and to conduct such events nationwide at the same time.

3) Summary of groups' discussions on the challenge
The participants across groups were happy that this challenge was addressed in the second citizen panel meeting. They remembered it as a main issue raised at the first panel.

Concerning the first option, the participants stated that of course those events should be organised as transparent as possible. Not only in terms of recruiting but also in terms of the resulting impact and what is going to happen with the output of the event. Nevertheless, there was a broad consent within the groups that a transparent procedure for the selection of participants would not solve the general problem raised by the small number of persons participating in the process. Twenty persons were not perceived to be sufficient to represent a country with 80 million inhabitants. Although most of the participants understood that limited budgets will be a problem if every issue is addressed on such a large scale, they were persistent that those processes should include definitely more people.

To tackle that problem, the combination of online- and offline procedures was strongly supported. However, some participants mentioned their negative experiences with online surveys, where participation in such activities has led to their mail boxes flooded by numerous spam e-mails. Therefore, to address this concern, those online formats should be designed professionally and with partners like ministries or public authorities which evoke trust.

To broaden the reach of the participation process, the live events should either take place in several cities at the same time (e.g. one event in the capital of every region/Bundesland or at least in northern, middle and southern Germany) or there should be a live stream for those who are not able to travel to the event's location. This live stream should either be broadcasted via web (on platforms like google hangout, facebook or linkedin) so that people can watch it from home or at local and 'official' places

like town halls, universities, libraries or cinemas. Online designs should include a possibility to interact with each other via chats and possibilities to post questions to the speakers. A pure online approach of participation formats was rejected because the participants considered face to face discussions still to be the best way.

For the groups, the third option 'Combine engagement of citizens with engagement of other actor groups' was formulated too vague, but could not provide a more adequate way to phrase it. The organisers should definitely make sure, that the participants have all the input they need to come to an informed decision.

Regarding measure 4, the participants were of the opinion, that a detailed explanation about what happens with the event's output should be a given. However, the general problem of the underrepresentation with 20 participants, would not be solved by detailed explanations. If the influence of the participatory process is strong, then 20 participants are not perceived to be sufficient; if the influence of the participatory process is only weak, the reason to participate in such a process was questioned.

Challenge 2

1) Please, describe the challenge and the respective policy and practice options you have developed to address it.

Challenge: Citizens do not trust the results they produce will have an impact on decisions made/research due to, e.g. previous experience, distrust in science, and distrust in policy-makers.

Policy and practice options

- Option 1: Set expectations right from the beginning – explain what impact the results might (not) have;
- Option 2: Produce concrete output after the event (e.g. conclusions, a declaration, final document) which is delivered to the citizens and published by the responsible authority for dissemination and further discussion (e.g. in a blog);
- Option 3: Implement procedures/mechanisms for tracing impact more long-term (to the extent possible) and inform citizens after the event how their results were used and what impact they have had.

2) Why did you select this challenge and PPOs?
Across groups during the first citizen panel meeting the participants voiced their concern about what happens with the results of those formats like the citizen dialogue or the evaluation panel. Either directly, wondering if the events were just used as an alibi for policy makers or more subtle, when talking about possible benefits in combination with phrases like "… if the results would be heeded."

3) Summary of groups' discussions on the challenge
Information is perceived to be of high value. All participants were very happy with the general idea of the three options to i) provide a clear mandate, ii) produce concrete output like reports and iii) produce a long-term documentation and agreed that every participatory process should include all three of them. On the other hand, information about the potential impact of the participatory procedure also can reduce the willingness to participate. The mandate of the process should justify the efforts of the participants. The major issue of the debate was the problem how information should be organised. The participants required information that attracts people's attention and that is understandable for people without an academic background. Instead of long papers short reports of 2 or 3 pages are preferred. The reports should include clear messages and be distributed not only to the participants themselves but also to the whole society (via information multipliers, websites, newsletters). The

information should not come in one big package but in several smaller steps, and be summarised on a blog. The first results should not be published more than half a year after the participation event.

The greatest need for information was on the process itself. The participants demanded that the organisers of participatory event explain in detail their reasons in cases when their final decisions deviate from the result of the process.

Challenge 3

1) Please, describe the challenge and the respective policy and practice options you have developed to address it.

Challenge: For various reasons (e.g. time, money, interest, etc.), not every citizen is able to participate in public engagement events. However, in many engagement forms (e.g. citizen dialogue and evaluation panel) the diversity of the perspectives represented by participants is central in order to ensure that no special interests prevail in the discussions providing inputs to scientists and science policy and decision makers. Attracting participants with diverse perspectives and not just those who have a stake in the issue or have a special interest in it is a challenge.

Policy and practice options

- Option 1: Provide the opposing views, the pros and cons at the event, to make it more intriguing for the participants who have not had interest in the topic before;
- Option 2: Give practical examples of applications of the particular technology and its impacts on the everyday life of people;
- Option 3: Use theatre and other forms of entertainment to enhance understanding and interaction between scientists and the public;
- Option 4: Make sure the participants are adequately compensated.
- Option 5: Take duration and timing into consideration, so no group in society (e.g. professions with special working hours, families, single parents, young /old people).
- Option 6: Promote science journalism and more talk about science in the media.

2) Why did you select this challenge and PPOs?
Many times during the first citizen panel meeting the issue arose that it is difficult to include all perspective present in society. All the more if only 20 participants take part in the process. So it should be as easy as possible for everyone to participate.

3) Summary of groups' discussions on the challenge

The participants acknowledged again the importance of including different perspectives in the process. All the suggestions made were supported except the inclusion of entertainment formats. They were deemed not serious enough for such important issues and would rather paint the whole process in an unfavourable light and as too light-hearted and thus not trustworthy. The main discussions were again about representativeness (which perspectives should be brought into the process) and about how to use online formats to make a participation for people easier.

Concerning the organisational aspects, the communication about the process should begin a long time before the events to give the participants enough time to plan ahead and thus to organise for example shifts or a babysitter. For the participation at live events, the efforts made by the people should not be too big or they should be sufficiently compensated. The participants claimed in particular the importance of a financial compensation for travel, accommodation, food and time spent. For an online

participation format different streaming times of the same event should be provided for those working in shifts.

Messages

GROUP 1

What needs to be done to make citizen engagement in R&I (more) attractive?

i) Make sure that the whole participatory process is transparent and that the output gets disseminated to the whole society.

ii) Furthermore, the results must have an impact and be taken into account during the decision making process.

GROUP 2

What needs to be done to make citizen engagement in R&I (more) attractive?

iii) Link online with offline formats of citizen engagement events. It is the only way to reach and include all the different groups within society.

iv) Make sure that the level of influence of the results is communicated properly beforehand. Distribute the results of the events as soon as possible to the participants and the whole society.

2.4   Portugal

Authors: Partner SPI (Susana Seabra and João Gonçalves)

2.4.1   *First citizen panel*

FOCUS GROUP 1

Table moderator name	*João Gonçalves*
Note taker name	-
Number of participants	*6*
Sub-domain discussed by the group	*Synthetic Biology / Bio-economy*

Group session 1 – Warm up

Q1. What experience do participants have with public engagement so far?

Brief Summary/Key Points	Notable Quotes
− Most participants showed an active interest in public engagement. Some had an experience in local participatory budgeting (neighbourhood level). Some also equated public engagement to demonstrations in the public realm or even elections (e.g. every 4 years). − A participant stated that he had joined a political party in his youth but gave up shortly after as a result of disaffection with the political processes, namely their complexities, siloing and lack of efficacy. − Another participant declared an active role. He had created a theatre company in a small town. The company still exists and plays a relevant role in bringing the town to life. He was also a local leader.	*"I created a theatre group in my little town"*

Q2. What motivates the participants to take part in this specific event and methodology?

Brief Summary/Key Points	Notable Quotes
− Most participants were motivated to take part in this event. They shared a common understanding that participation in the public life is a way to improve life for themselves and society. − A participant gave the example of the need to build a wastewater treatment facility, which was not addressed by the competent authorities. As a result, he himself got together with a group of people to make the local council take responsibility and build the facility. − There was a clear perception that most citizens did not share this willingness. Most people are not engaged to partake in public events. The younger generations and the older generations are viewed as the most disenfranchised in the population. − Results clearly matter to make people more engaged in their community, in the public arena. Some of the events	*"I am participating to hear different opinions, to learn something and to feel I cooperated"* *"There are more people just staying home and conforming."* *"The younger and older generations are not willing to participate".*

Brief Summary/Key Points	Notable Quotes
promoted in this area, have not been careful in showing the end-results, so people grew more suspicious of similar processes.	

Q3. What are the participants' expectations and concerns related to the event and methodology?

Brief Summary/Key Points	Notable Quotes
− Participants wanted to take part in a discussion about the various topics, to learn new perspectives and cooperate. As a result they wanted their views to be heard by politicians / decision makers. − Participants mentioned difficulties in attending similar events. It is complicated to a citizen to have an effective action: lack of time, especially if you have children. − They also stated a need to be willing and make an effort to participate.	*"It's complicated to have an effective intervention in public life"* *"It is more complicated when you have children".*

Group session 2: Introduction to 'their' sub-domain of R&I

Q4. How knowledgeable participants consider themselves to be in this particular area of research?

Brief Summary/Key Points	Notable Quotes
− There was a participant that knew a lot about the area. The others only stated general knowledge in the area.	

Q5. How relevant do they think this issue is to their everyday life as of nowadays? What about the future?

Brief Summary/Key Points	Notable Quotes
− The issue was viewed as very relevant for the environmental crisis we are living in present times. Humans are clearly living above the Earth's capacity so we have to find out alternative solutions. The critical system is transportation by road. − The fossil fuel lobby was also viewed as a culprit in the delay to pursuit greener means of transportation. The price hike some years ago was viewed as a way to prevent alternative sources. − A discussion ensued about if the required change should be radical or gradual.	*"I am interested in knowing how we will see some change in the way we use fuels if there is a very strong fossil fuels lobby".* *"We are destined to use alternative fuels"* *"The question is not so much on alternative technologies, but alternative lifestyles – no technology per se is going to solve all our problems".*

Q6. How important do they think this issue is for the society as a whole? Why?

Brief Summary/Key Points	Notable Quotes

− There were considerations about the specific sub-theme. Participants thought people will be increasingly more conscious about such issues. They stated that we are on the way to increase the use of alternative fuels. Some years ago there was no mention of hybrid or electric cars, and that now they are everywhere. Slowly society will change to produce more cars like this. A participant asked the other participants if they thought it was enough to change technology or the consumption society had a limit and a change on the way we live, use resources and organise ourselves would be necessary. The response was that we must try to reduce our ecological footprint, by seeing what our priorities are. But most considered that biofuels were not the answer. Technology has continuously presented new ways and resources. However, used oils were considered a good alternative. Another participant stated that there should be a ban on all fossil fuels. − A participant stated an example on the importance of having a "real" experience. He proceeded in detailing the way his journey across Morocco raised this awareness about the issue of ecological footprint (see quote). − Participants agreed the scientific community should be concerned about the environment. And the citizens too.	*"As elements of society, do we think that scientists and technology will be enough and the way of life will continue as it is? Or we think that this resource consumption has a limit and we have to change the way we live and use resources?"* *"I did not have sensitivity to this issue. But last year I did a 200km drive in Morocco, in the South. For that distance In either side of the road there were plastic bags. This experience really made me realise what is at stake. 200 km is truly a brutal thing. My ecological conscience was awaken from that point."* *"Wood is sustainable. The burning of the wood represents release of CO_2 to the atmosphere, but growing a tree would represent a removal of equal amount of CO_2"*

Group session 3: Category of engagement: Science Café

Q7. What are the motivations of citizens to take part in the presented engagement opportunities?

Brief Summary/Key Points	Notable Quotes
− Participants stated a general interest in attending the Science Café event. − The main motivation was that it was an informal chat about the topic. Most thought it was an interesting event to attend. − The presence of a radio moderator was deemed interesting. These professionals have a talent for communication and translating complex issues that most of the times scientists do not. It would be interesting to have the Science Café broadcast in radio. − A philosopher was also considered a good addition, as they can present methods or tools to support effective discussions. − Dinner time was deemed difficult for parents, but acceptable for those who do not have children.	*"These professionals have a talent for communication and translating complex issues that most of the times scientists do not. It would be interesting to have the Science Café broadcast in radio."* *"I agree with the incorporation of a philosopher. In these issues their role should be explored, as they have the tools to help us deal with these complex issues."*

Q8. What holds them back from doing so? What are their concerns and perceived obstacles for participation? What could change their position?

Brief Summary/Key Points	Notable Quotes
− Attendees thought the invitation was not appealing to the common citizen. It was an interesting event for the scientists' community, but citizens have to understand the benefits for themselves and the community. − The event should convey practical examples – to take the message across. − The invitation should also explain the topic in simple terms. − Local opinion leaders are important to build trust in the audience. There are a few names that people respect and would feel more interested in attending. − It is very important that the event grants both (or other) sides of the question. People need to realise that the issue is complex, and that multiple solutions are possible. − It is important to have a diversified panel, i.e., with people with diverse susceptibilities, backgrounds and knowledge areas. − A fun and interesting event should be organised: games, pedagogical and ludic activities. "Ciência Viva" (a Portuguese Science communication network) is a good example of balancing science and fun. This network uses a well-proven method – to entice children to bring their parents as well. − Theatre can be used to communicate science. − The event should be headlined by a multidisciplinary team. To convince new people a complete toolbox is needed.	*"The event must be sold."* *"We have to if we would go to that information session or debate."*

Q9. What do participants see as possible benefits for them personally/the wider public/other stakeholder groups (incl. researchers/policy-makers/other decision-makers)?

Brief Summary/Key Points	Notable Quotes
− Participants considered that everyone that would attend such an event would benefit. Bio-economy is an interesting subject and some areas such as Biofuels are perfectly applicable to the everyday life. − In the rural areas a different approach would be needed. They are not used to this kind of events. − Decision-makers would get new knowledge. They seldom have contact with the real opinion of people. An event like this would be an opportunity to communicate concerns and priorities of the population. − Politicians should participate as speakers as well – give their point of view on the issues. But local politicians and not national figures. − Researchers would benefit as they would get closer to community concerns and world-view. − The communication skills of scientists should be fine-tuned before these events.	*"I believe local politicians instead of bigger names would be more interesting to hear"* *"Researchers work is very detached from day to day concerns. It is important that the scientific community partakes with the general population and their needs."*

Group session 4: Category of engagement: Citizen Evaluation Board

Q10. What are the motivations of citizens to take part in the presented engagement opportunities?

Brief Summary/Key Points	Notable Quotes
− All participants stated an interest in such an event. They considered it to be a perfect event to ponder research and research areas in Portugal. − Meeting frequency seems not to be overbearing, even though it means a commitment until 2018.	

Q11. What holds them back from doing so? What are their concerns and perceived obstacles for participation? What could change their position?

Brief Summary/Key Points	Notable Quotes
− A preliminary information package should be sent to participants. Most of them would be unaware of the issues in an area such as Bio-economy. − Informed citizens are an important precondition. Prior information and the researchers' presentation would suffice. − The invitation seems too complex to the average citizen in Portugal. − Questions were raised about the timing of the event (weekend). A participant said that the government should provide support and integrate participation into the labour law. There should be mechanisms to prevent it from influencing personal life. − The event should be organised on a work-day. − It would be more interesting for people who live closer to Lisbon, as the trip is long. There should also be events like this locally. − The challenge would be to turn technical knowledge into comprehensible information. − The format of the letter must be friendlier and more intelligible for non-specialists. The letter must catch the attention of the common citizen. The language should be simplified. − Bio-economy is an interesting area for the common citizen. − Important factor: how the panel is set-up. Measures to build a representative panel must be put in place to assure different points of view are taken into account. − Publicity / promotion techniques should be employed to raise interest in the event. − There should be a session for raising awareness, for example a Science Café session. − The local administration should be involved. − The event could also take place on the internet, by making use of modern social media technologies.	*"The invitation seems too complex to the average citizen in Portugal"* *"Why on the weekend? Civic work such as this one should take place on the working hours. This is clearly a civic duty issue."* *"The letter is too dense and complex. Normally this letter would be thrown out."* *"Why restrict to a live session? Why not using new ICT tools and let the citizens decide online?"*

Q12. What do participants see as possible benefits for them personally/the wider public/other stakeholder groups (incl. researchers/policy-makers/other decision-makers)?

Brief Summary/Key Points	Notable Quotes
− Participants saw as main benefits the reinforcement of civic duties, citizenship. They stated that money would not be a key precondition. Participation in such an event would be possible merely on account of civic duties. − The decision-makers would have more information and grounds to decide upon. Their role to serve society would be increased.	

Group session 5: Category of engagement: Citizen Dialogue

Q13. What are the motivations of citizens to take part in the presented engagement opportunities?

Brief Summary/Key Points	Notable Quotes
− There was some interest in the event because of its debating format, and a hope that the potential conclusions would be taken into account by the politicians, but there is no guarantee that this would happen. − An important motivation to participate would be the condition of reaching a conclusion in the end.	*"I would go, but there is no guarantee that the politicians would heed any of it"*

Q14. What holds them back from doing so? What are their concerns and perceived obstacles for participation? What could change their position?

Brief Summary/Key Points	Notable Quotes
− The theme was considered interesting but the mode of participation was not. − The main concern was the efficacy of such an event. There should be a consideration of the impact of discussions in policy, that is, some reassurances would be needed: The areas and the concerns expressed in the Dialogue would have to be turned into a proposal to be discussed in parliament (e.g.).	*"In this format I believe our presence would amount to little."* *"Reaching the ministry is not enough. I am sceptical about the political class."* *"It would depend on my availability – I go to any place where knowledge is given / at hand."*

Q15. What do participants see as possible benefits for them personally/the wider public/other stakeholder groups (incl. researchers/policy-makers/other decision-makers)?

Brief Summary/Key Points	Notable Quotes
− As possible benefits participants mentioned the opportunity to learn, think and try to reach some interesting conclusions / solutions, personal achievement and the accomplishment of a mission. − To researchers: it would have a mutual interest – to understand the perspectives of the community, to have a sense of societal priorities. − Decision-makers: understand the pressing issues and priorities of people and align their options accordingly.	

Group session 6: Comparisons of the three forms of engagement

Q16. In a comparative perspective, which opportunity is most/least attracting to participants and why?

Brief Summary/Key Points	Notable Quotes

− It would depend on the goals of the event:
    o To have some information on a theme: Science Café – it would be fun and informal way of having an interesting conversation over difficult issues. The effect would only be on participants' knowledge.
    o To have an effect on society / to influence policy: Citizen Evaluation Board. Participation would be part of a civic role.
− Dialogue with citizens would be least interesting.
− All the tools could however be used complementarily. They could all be used effectively.	

Q17. Which opportunity brings most benefits to the different stakeholder groups (the public at large, researchers, policy-makers/politicians), etc.?

Brief Summary/Key Points	Notable Quotes
− Decision-makers: Citizen Evaluation Board. There would be a direct channel to (partially) inform policy. − Researchers: Citizen Dialogue would be least interesting.	

FOCUS GROUP 2

Table moderator name	Paulo Peixoto
Note taker name	
Number of participants	6
Sub-domain discussed by the group	Food&Health

Group session 1 – Warm up

Q1. What experience do participants have with public engagement so far?

Brief Summary/Key Points	Notable Quotes
– For the participants this was the first true experience of public engagement. They confessed that usually they are very reluctant to participate in public discussions, insofar as they do not believe that participation and engagement leads to concrete actions. Participation is often organised by politicians in order to guarantee that everything stays the same, but with the sanction of public participation. In addition, the participants pointed out that participation/engagement are often associated with commercial motives, which leads them to look at participation with suspicion. – All of them usually participate in the elections as voters. They also consider being more available to engage in situations where they know the other participants (e.g. neighbours). On the other hand, they point out that, in their entourage, the availability for participation tends to be very low. And they confess to be more willing to take part in public causes as long as they concern problems involving family or friends.	*"Participation just to participate is not worth it; Participation serves to legitimise the views of those who are normally already involved; Participation always hides suspicious interests."*

Q2. What motivates the participants to take part in this specific event and methodology?

Brief Summary/Key Points	Notable Quotes
– What motivated the participants was the curiosity and the fact that the panels were co-organised by the Centre for Social Studies, entity that all of them know from other initiatives. Healthy eating and food safety are topics that have reinforced the motivation to participate. The fact that it is a project financed by European funds reinforced the confidence of participants on the impacts of their participation. Although, at the outset, they did not know the details of the methodology, the participants liked the methodology and the opportunity to be in a group whose size and composition favoured the discussion and the exchange of point of views.	*"I was curious to know why someone wants to hear my opinions about something I know nothing about."*

Q3. What are the participants' expectations and concerns related to the event and methodology?

Brief Summary/Key Points	Notable Quotes

− Participants expect that their participation and discussion may have impacts on the definition of effective modalities for citizens' listening and in the elaboration / configuring of public policies. The opportunity to have a group of experts analyse and comment on the considerations and criticisms they have made in relation to each of the three discussed models of participation is at the same time a matter of expectation and concern. To the extent that they unanimously considered that the first model of engagement opportunity did not represent a true model of engagement, there is a curiosity about the experts' discussions on this issue.	*"Being invited to listen to an expert talking about something and having the opportunity to ask him some questions is not a true form of participation; I do not know whether these opinions will really help the experts to reflect on these matters."*

Group session 2: Introduction to 'their' sub-domain of R&I

Q4. How knowledgeable participants consider themselves to be in this particular area of research?

Brief Summary/Key Points	Notable Quotes
- Participants were familiarised with the area, either from their professional life or from personal health concerns / issues. - There were also participants familiarised with sweeteners and the plant properties. - The choice of the best food should be informed by the capacity to read / assess a label. This information is not readily available / intelligible in the products. The question of choice is also a question of sufficient information. - There is widespread knowledge about the sugar content in food, but there is not so much awareness that salt is also very used.	*"With time we reduce our propensity to sweet things – we can educate our taste to suit less sugary food".* *"I don't believe products that are made in a lab".* *'"Light" products are processed – I tend to run away from it.'* *"The food industry has been detrimental to our health."* *"Not every person has the capacity to read / assess a label – everyone should be able to do so. In the supermarket I do not know if I am reading properly the food label."* *"The food industry uses techniques to waiver a responsibility to provide healthy food."*

Q5. How relevant do they think this issue is to their everyday life as of nowadays? What about the future?

Brief Summary/Key Points	Notable Quotes

- There was a general acceptance that the issue is present in everyday life. People usually are concerned about food issues. This concern is across the board: socially, economically, and culturally. - Food concerns are normally linked to health issues in the family, or by the omnipresence of food and health considerations in the media. There is a wide dissemination of knowledge of health concerns and food health hazards or properties. - Food also is a part of school curricula – like the food wheel.	*"It is no longer about preventing diseases but promoting a healthy lifestyle, well-being. There is no show on TV without some expert talking about food and cuisine. Healthy food is fashionable nowadays."* *"I am not concerned about the amount of sugar in some drinks such as Coca-Cola, I am concerned about the quantity we take. We should drink water, not these sugary drinks".*

Q6. How important do they think this issue is for the society as a whole? Why?

Brief Summary/Key Points	Notable Quotes
- The issue is important for society. People do not have the awareness to make informed decisions. - For example, there are problems with foods in the supermarket – not enough information is available. As a result there are a number of "civilisation-based" food problems. - The food industry makes it difficult for consumers to receive full information. - Increasingly the industry, as shown by advertising, is aware of the responsibility to inform about ingredients or highlight healthy properties in food.	*"People do not have the economic power to make balanced choices. Poorer people are not free".* *"Education is very relevant. Some people think they are making good choices but do not have all the information"* *"Nowadays advertising is not so much about aesthetics. It is a question of social responsibility, to reduce harmful ingredients in food for example."*

Group session 3: Category of engagement: Science Café

Q7. What are the motivations of citizens to take part in the presented engagement opportunities?

Brief Summary/Key Points	Notable Quotes
- Some participants stated the need for personal motivation – the will to know more or a concern about the theme. - The environment created should be prone to conviviality between participants.	*"I do not accept these type of invitations. (…) now I only go if there is some kind of performance".* *"Depends on the topic. If the event was in geology I would go"*

Q8. What holds them back from doing so? What are their concerns and perceived obstacles for participation? What could change their position?

Brief Summary/Key Points	Notable Quotes
- The event was deemed too unidirectional and amounting to little "participation" from invitees. The participants had	*"The event seems too unidirectional."* *"It's too passive."*

a very passive role to play in such an event. It seems just a way to convey information, from researchers to the public. - There should also be events in villages, not only in cities. - The invitation should entail setting aside a seat so that conditions can be suitable for attending.	*"The people who make policy are not prone to heed the opinions of the people."*

Q9. What do participants see as possible benefits for them personally/the wider public/other stakeholder groups (incl. researchers/policy-makers/other decision-makers)?

Brief Summary/Key Points	Notable Quotes
- Depends on the message and the way it is communicated. - The event is a way to disseminate information. Stakeholders can use this to show the projects and research areas they are involved in.	

Group session 4: **Category of engagement: Citizen Evaluation Board**

Q10. What are the motivations of citizens to take part in the presented engagement opportunities?

Brief Summary/Key Points	Notable Quotes

- This mode of participation was granted a lot of attention and interest. According to panellists people in general would be very interested to join such an event, and they have agreed that citizens should participate in the selection of proposals. Some of the merits of the format include:
   o A concrete, to-the-point event, where the opinion of the public is valued.
   o An interesting event, where citizens have the opportunity not only to give an (non-expert) opinion, but to also have an impact on society.
   o The role of participants is clear. In such an event, reaching a consensus and a collective opinion of the board members would be most important. Personal opinions would be valued but in a constructive way.
   o It is a multi-directional model, where everybody collaborates to build relevant and interesting policy.
	"Seems more concrete. Our opinion is valued."
	"Role of participants are clear. As a citizen I would not expect everything to go according to my opinion."
	"This mode opens research to the general public"
	"It would be very interesting because I would have the opportunity to give my opinion, and it would be worth for something."
	"As a citizen I would not expect everything to go according to my opinion."

Q11. What holds them back from doing so? What are their concerns and perceived obstacles for participation? What could change their position?

Brief Summary/Key Points	Notable Quotes
- There should be a concern about clearly stating the results of the Board. If initially the solutions / proposals would not be heeded by the Ministry, in the given format, eventually people would lose interest, which would have implications for future events. - There is potential for skewed results. It may happen that not all the people are sensitive to participate in such events, such as underprivileged people, which would end up in skewing results in favour of more affluent citizens.	*"Depends on the theme. Some topics I would be more comfortable than others."* *"I could provide input about my own needs (in any area – not Food & Health)."*

- There is also a concern about the topic – some people would prefer to be involved in a topic of their interest.
- The model requires a greater deal of personal investment, compared to the Science Café. It is a model that presupposes more dedication and there would be a higher rate of people opting out.
- There were concerns that the initial talk of the experts can condition the opinions of the public.

Q12. What do participants see as possible benefits for them personally/the wider public/other stakeholder groups (incl. researchers/policy-makers/other decision-makers)?

Brief Summary/Key Points	Notable Quotes
- The Board can play a role to elicit change in people's minds. - Panellists judged that the benefits of such an event would be felt across the board. In the case of industry, it would help them develop products that are more aligned with societal needs.	*"Depends on who is going to hear us: researchers or food industry? If I could give an opinion to industry, things could take a beneficial turn."*

Group session 5: Category of engagement: Citizen Dialogue

Q13. What are the motivations of citizens to take part in the presented engagement opportunities?

Brief Summary/Key Points	Notable Quotes
- This mode of participation was judged to be the most balanced of the three. - Participants valued the opportunity to state personal opinions without the "weight" of influencing decisions. Some participants thought that in the Citizen Evaluation Board format, non-experts giving opinions about research would favour applied research. In the Citizen Dialogue format, it would merely consist of giving personal opinions about a subject. - It is interesting because participants' opinions are heard. It will elicit less resistance than the Citizen Evaluation Board. - We have non-experts giving an opinion about research – they will condition research and favour applied research. - By not placing in the citizens the pressure to make decisions that affect other people (research or production), in this model, citizens shall be more at ease. - The fact that the event requires less time and dedication compared to the Board was also viewed in a positive light – it is just a one-off event.	*"It is interesting because my opinion is heard. It will elicit less resistance than the Citizen Panel."* *"We have non-experts giving an opinion about research – they will condition research and favour applied research. For researchers there will be less resistance because their freedom is not put in jeopardy."* *"In this model, I feel more at ease with my opinion, even if it is not previously informed by researchers"* *"Does not require time and dedication – it is just an one-off event."*

Q14. What holds them back from doing so? What are their concerns and perceived obstacles for participation? What could change their position?

Brief Summary/Key Points	Notable Quotes

- If people are not involved / do not have awareness in this area of research they would not be interested in participating. - The choice of participation and availability of citizens would always be conditioned by the limited trust of the general public in similar events, where the results of participation were not valued. - There were also concerns that participation was merely tied to commercial ends. There is distrust that citizens are being involved within a commercial strategy instead of a real attempt to hear citizens.	

Q15. What do participants see as possible benefits for them personally/the wider public/other stakeholder groups (incl. researchers/policy-makers/other decision-makers)?

Brief Summary/Key Points	Notable Quotes
- The Citizen Dialogue can stimulate the "social training" of the citizens, of building a new mind-set that is more trusting in engagement activities. - For researchers there will be less resistance because their freedom is not put in jeopardy.	

Group session 6: Comparisons of the three forms of engagement

Q16. In a comparative perspective, which opportunity is most/least attracting to participants and why?

Brief Summary/Key Points	Notable Quotes
- Science Café – very passive model. Information is important. This model is also the least demanding. It is relevant to raise awareness, to inform, but no change in society is immediately perceivable. - Dialogue and Board translate real participation. The preference of which one of this models is dependent on intended goals. - The Board was viewed as the preferred model if the intention is to enact change in Society. However it demands more preparation and is more demanding to carry out. There is the problem of the composition of the Board – which citizens to select. Informed, educated citizens or the general public, who would require more information? - The Dialogue is an interesting way to get to know and identify needs for new foods. As it is a debate of ideas, it would not be necessary that people are previously informed by researchers, some information and guidelines would suffice. Its organisation is also simpler.	*"We have to live in a society with a more active citizenship."*

Q17. Which opportunity brings most benefits to the different stakeholder groups (the public at large, researchers, policy-makers/politicians), etc.?

Brief Summary/Key Points	Notable Quotes

- For decision-makers - the Citizen Evaluation Board, as a way to distribute responsibility. It shows that there is receptiveness for citizens to participate.
- The Dialogue would be easier to implement. Less responsibility as well.

FOCUS GROUP 3

Table moderator name	Susana Seabra
Note taker name	Rita Farinha
Number of participants	7
Sub-domain discussed by the group	Nanotechnology

Group session 1 – Warm up

Q1. What experience do participants have with public engagement so far?

Brief Summary/Key Points	Notable Quotes
Most participants showed an active interest in public engagement: - public demonstrations, for example "pro-culture" and trade unions; - volunteering, for example fundraising, fight against cancer; - open meetings of city councils; - free classes, for example Yoga; - amateur groups, for example Photography; - surveys; - public petitions, for example petitions for animals rights; - social participation; - participation in studies; - union delegate; - knowledge sharing, for example via Facebook groups.	*"I created a photography group with my friends"* *"Sometimes one must inform people in order for them to get the word out"* *"I Inform workers about their rights and obligations"* *"I participate in demonstrations when I feel it is important"*

Q2. What motivates the participants to take part in this specific event and methodology?

Brief Summary/Key Points	Notable Quotes
Most participants were motivated to take part in this event due to: - sharing of ideas; - curiosity; - interesting issue; - importance of conscientious engagement; - participation in order to understand what needs to be done for the common good; - getting to know the perspective of people who actively participate in society.	*"I think a conscientious participation is very important in this world "* *"Now I have more time to understand different subjects"* *"I would like to know, but I think these themes are for scientific brains"*

Q3. What are the participants' expectations and concerns related to the event and methodology?

Brief Summary/Key Points	Notable Quotes
Participants' expectations and concerns related to the event and methodology: - active participation; - receiving new knowledge.	*"We have to be participative and not let others decide for us"*

Group session 2: Introduction to 'their' sub-domain of R&I

Q4. How knowledgeable participants consider themselves to be in this particular area of research?

Brief Summary/Key Points	Notable Quotes
Participants did not have any knowledge about this particular area. They weren't aware about applications of nanotechnology in everyday life.	*"I have heard the word nanotechnology, but it isn't a common sense area, like computer science or economy"* *"abstract theme"* *"Coimbra University has research about this area"*

Q5. How relevant do they think this issue is to their everyday life as of nowadays? What about the future?

Brief Summary/Key Points	Notable Quotes
Participants don't know any application of nanotechnology in everyday life. They think nanotechnology has applications nowadays, but they don't know where. Regarding the future, participants mentioned that: - nanotechnology will certainly have applications; - The participation of everyone is essential.	*"In the future, nanotechnology will certainly have applications"*

Q6. How important do they think this issue is for the society as a whole? Why?

Brief Summary/Key Points	Notable Quotes
Participants think that nanotechnology is not the solution to pollution, because there are many economic interests behind the pollution issue. - Nanotechnology is a step forward and not a step backward, however this area has to have a conscious treatment. This consciousness depends on the researchers and people in power. - They also said that research information that is passed on to the general public is manipulated. - They find it difficult to participate because research is restricted to a certain group of actors.	*"For example nuclear energy was developed for a good propose and, after that, it was used in a bad way"* *"Things don't only have a good side"* *"Pollution is still not palpable and it does not immediately affect us"*

Group session 3: Category of engagement: Science Café

Q7. What are the motivations of citizens to take part in the presented engagement opportunities?

Brief Summary/Key Points	Notable Quotes
Participants didn't express an interest in attending the Science Café, however some positive aspects of partaking in the event were mentioned: - one person speaks on the positive side and another on the negative side, thus, different perspectives of the issue are presented; - informal environment, giving the impression of being a more open session to the general public; - informal chat about the topic.	

Q8. What holds them back from doing so? What are their concerns and perceived obstacles for participation? What could change their position?

Brief Summary/Key Points	Notable Quotes
Main obstacles for participation were: - too specific and advanced theme for people who are not experts; - unappealing approach; - very specific language; - two scientists speaking about a theme is not appealing to the general public because they will focus on their "bubble"; - the researchers are very theoretical and closed; - not knowing the theme does not help attendees; - everyday life themes are more appealing to participation; - subject in which citizens cannot act. Suggestions to make the event more attractive: - more visual and practical presentation; - giving an example that is close to the reality of people; - accounting people for their responsibility; - focus first on pollution and then on nanotechnology; - events for children; - incorporate in other types of events, for example cultural events; - include audio-visual media and examples with which people identify themselves; - choosing good speakers which suit the target audience is essential; - it is important to create a network of contacts, because people are able to reach other people; - creating open networks; - documentaries are a good way of alerting people to the subject, once they are alert it is easier for them to participate.	*"Nanotechnology, what is it? I would not read anything more."* *"I was going to feel ignorant because I was not going to understand anything."* *"For example, I went to an event presented as "I am discovering new planets like the earth", that are called exoplanets", if it was presented only "exoplanets", I would not go."* *"Coffee kills. The coffee is good. Contradictory information creates antibodies in people against those research areas."* *"How do they want to change behaviours, if what it is best for health or the environment more expensive."* *"A lot is discovered that would help the environment, but then the economic lobbies do not let go."* *Examples of more appealing titles:* *"Nanotechnology for dummies"* *"Did you know that your wall can help reduce pollution?"*

Q9. What do participants see as possible benefits for them personally/the wider public/other stakeholder groups (incl. researchers/policy-makers/other decision-makers)?

Brief Summary/Key Points	Notable Quotes
Benefits for the participants themselves: - knowledge (the next time a person hears the word (s)he already knows what it is; knowledge on where nanotechnology is applied in everyday life) - more interest in the subject. Benefits for the wider public: - information sharing - information network;	*"Nothing is done without a reason."* *"It should be on another level."*

Benefits for researchers: - information dissemination; - feedback from people; - use information collected for future research; - starting point for the practical application of research. Benefits for policy-makers: - show that they are doing something, although in practice everything stays the same.	

Group session 4: Category of engagement: Citizen Evaluation Board

Q10. What are the motivations of citizens to take part in the presented engagement opportunities?

Brief Summary/Key Points	Notable Quotes
Participants stated a general interest in attending the participatory budgeting format, i.e. the citizen evaluation board. A two year time allows for: - nanotechnology to growth; - people to understand the subject; - to increase people's knowledge; - to see some progress. Positive aspects of the format: - presentation of the project is great, but half a day might be too short; - balance between researches and citizens; - people from the outside could see the other side; - involvement of various research areas; - open new areas of activity; - an instrument for citizens to have a say; - involvement of people, sharing of responsibilities; - people feel that their opinion will be taken into account. Positive aspects of the invitation: - more appealing text and more information; - references to being part of a board which makes decisions.	*"After being here I would participate because I would think my opinion could work"* *"Fairer way of becoming active citizens"* *"Equilibrium between common people and researchers"* *"How ordinary people will vote for funding makes researchers convince us about supporting their work"* *"We have to have a voice"* *"Nowadays only the researchers decide what to investigate, perhaps with our contribution things will be different."* *"If it was in my area I would go for sure"*

Q11. What holds them back from doing so? What are their concerns and perceived obstacles for participation? What could change their position?

Brief Summary/Key Points	Notable Quotes
Negative aspects of the format: - could create some vicious cycles; - people in the area could take advantage of this; - too much rotation; - a person without access to information will not participate; - weekend occupation; - difficulty in having representative samples. Suggestions for changes:	*"It's not a person like me who will change / influence decisions"* *"90% of people do not want to know"* *"The average citizen leaves everything in the hands of others"* *"Your opinion is important for ..."*

- first explain what the research is about and then the concrete subject; - having nanotechnology in the title is very abstract and strong; - it has to be said that it is not required to have scientific knowledge; - regular update of the situation; - developing an information platform with open participation to all (for example by including a forum in the platform); - it is necessary to show results because only then people will be interested and more involved; - it is necessary to explain to people that research can take a long time to produce results and that some research does not lead to good results; - it is necessary to know the opinion of regular citizens to know if it is worth researching.	*"Have your say!!"* *"Will we be here to see?"*

Q12. What do participants see as possible benefits for them personally/the wider public/other stakeholder groups (incl. researchers/policy-makers/other decision-makers)?

Brief Summary/Key Points	Notable Quotes
Benefits for the participants themselves: - acquired knowledge; - being part of the process; - feeling useful and knowing that your word is important; - being an integral part of smaller or larger changes. Benefits for the wider public: - social representation; - encouraging the participation of other people. Benefits for other stakeholder groups: - it is a great brainstorming; - getting different ideas and opinions; - hearing opinions of someone who is looking at the subject from the outside.	

Group session 5: Category of engagement: Citizen Dialogue

Q13. What are the motivations of citizens to take part in the presented engagement opportunities?

Brief Summary/Key Points	Notable Quotes
Participants stated a general interest in attending the participatory budgeting format. They highlighted that this is a very clear format in regard to: - the definition of nanotechnology; - the importance of opinion; - what will happen to the results of the session (results passed to the Minister). Other relevant aspects mentioned by participants included: - involvement of a higher level actors (Minister); - researchers will present the subjects; - brochure with information; - it creates expectations.	*"That's it"*

Q14. What holds them back from doing so? What are their concerns and perceived obstacles for participation? What could change their position?

Brief Summary/Key Points	Notable Quotes
Concerns and perceived obstacles for participation: - one day is too short; - lack of awareness of the full scope, i.e. there are other similar initiatives in the world / Europe; Suggestions to make the format more appealing: - it has to be clearly stated that scientific knowledge is not required but rather the opinion of regular citizens.	*"Nothing"*

Q15. What do participants see as possible benefits for them personally/the wider public/other stakeholder groups (incl. researchers/policy-makers/other decision-makers)?

Brief Summary/Key Points	Notable Quotes
Similar to the category of engagement C	

Group session 6: Comparisons of the three forms of engagement

Q16. In a comparative perspective, which opportunity is most/least attracting to participants and why?

Brief Summary/Key Points	Notable Quotes
In order to select the most attractive form, B and C were discussed, since there were good points in both. Form A (Science Café) was immediately selected as the worst option. After the discussion, some citizens changed their minds and it was concluded that the best option of participation was B – Citizen Dialogue. Comparative analysis between Citizen Dialogue and Citizen Evaluation Board: - Option C (Citizen Evaluation Board) is more inclusive. Two years is a good amount of time in order to reflect on the subject but it can lead to people's disinterest. It is difficult for people to commit over such a long period of time. Due to the length of the sessions, they become heavier, they are more scientific and further away from regular citizens. The word "council" has a greater weight and it gives an idea of seriousness. - Option B (Citizen Dialogue) allows for a closer proximity and interaction. The invitation was made in a very clear and appealing way. Researchers are able to get more information from citizens in small meetings. Participants considered that option B (Citizen Dialogue) was more feasible, allowed several sessions with different people, contributed to the representativeness of the sample and had more immediate results. All participants agreed that the least attractive option was Science Café since the theme was not suitable for a café and it would imply a very restricted audience.	

Q17. Which opportunity brings most benefits to the different stakeholder groups (the public at large, researchers, policy-makers/politicians), etc.?

Brief Summary/Key Points	Notable Quotes
Both options B and C had advantages, however C could have more benefits since it allowed for faster results for all stakeholder.	

2.4.2   Second citizen panel

Challenge 1

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1) Please, describe the challenge and the respective policy and practice options you have developed to address it.

Challenge: In many engagement forms (e.g. citizen dialogue and evaluation panel) the diversity of the perspectives represented by participants is central in order to ensure that no special interests prevail in the discussions providing inputs to scientists and science policy and decision makers. Attracting participants with diverse perspectives and not just those who have a stake in the issue or have a special interest in it is a challenge.

Policy and practice options:

- Provide the opposing views, the pros and cons at the event, to make it more intriguing for the participants who have not had interest in the topic before;
- Give practical examples of applications of the particular technology and its impacts on the everyday life of people;
- Use theatre and other forms of entertainment to enhance understanding and interaction between scientists and the public;
- Promote science journalism and more talk about science in the media.

2) Why did you select this challenge and PPOs?
It was a thought-provoking and debatable issue to present to participants. It was also relevant to the groups as it was a question that arose in the first Portuguese panel meeting.

3) Summary of groups' discussions on the challenge

Reactions about the challenge itself by the participants in the groups.

The participants consensually stated that the challenge was clear and important.

Some of the participants stated strongly that to hold a diverse panel was a fundamental principle to uphold. Some even argued that diversity should be enforced not only regarding the number and quality of inputs but also credibility and independence. Ensuring two or more sides of the story are communicated was paramount.

However there were some opposing views. Some participants argued that there should be a diverse panel but participants should be informed. In fact, an ill-informed panel would have negative consequences and lead to bad decision making. In response, a common answer involved stating that the simple activity of participating would enable learning. Also, there could be issues that „sensibility", rather than knowledge could be enough to elicit an opinion.

Quotes:

- *"There is consensus on the issue."*
- *"It is very simple - there should be a policy of non-discrimination."*
- *"Enrolment of people should also follow techniques of representative sampling."*
- *"Agree but there are doubts."*
- *"Wholly agree. In any theme and format there should be diversity."*
- *"Panels should be diverse but underlined informed. Ill-informed opinions may end up in bad decision making. On the other hand, people can gain knowledge by participating."*
- *"There are things that I do not have information, but there are issues that I have sensibilities."*

Should the proposed PPOs be implemented? Why? Why not? What are the advantages and disadvantages of implementing the PPOs?

Participants stated that the main policy option, namely "promoting science journalism", would not suffice. There should be other kind of policies that could be also instrumental to promote diversity.

The main advocated policy was to have a statistically-based random selection of people, so that there would be diverse panels in terms of backgrounds, social and economic conditions, age groups, etc. Others however argued that diversity begins with interest on the theme. There should be active policies to make people interested, and therefore, have a (even slight) willingness to engage and change their environment.

Participants also stressed the relevance of communicating science in the best possible manner, i.e., grabbing the attention and speaking the language of the target audience. Some examples were presented that could elicit attention from otherwise hard-to-reach people.

A consensual conclusion among the groups was that there should not be a sole policy or practice, but an effective mix of policies, accommodated to specific events or target groups.

Quotes:

- *"Science journalism already exists."*
- *"There are other kinds of communicating science – there is the example of the cartoon „Il était une fois... la vie", which was highly educational in an entertaining way. Science magazines per se (National Geographic) are not enough)."*
- *"There should a random selection of people. If this kind of initiative is not implemented there will always be skewed participation in the events."*
- *"People really need to be convinced, to eliminate the apathy."*
- *"People buy what is easiest. A scientific magazine does not sell."*
- *"We need to know the dialogue that best fit the people."*
- *"Content may be less interesting whatever the medium. We need to find interesting content even in science communication."*
- *"Diversity us a problem in itself. It depends on the people participating, but there could be more difficult communication among people with different backgrounds."*
- *"Theatre is ok, but it is targeted for the people who like theatre."*
- *"Only a policy or a practice are not enough. There should a mix of policies and practice. There is nothing against the policy and practice presented, but more are available and effective."*
- All these policy and practice already exist."*
- *"Providing example is a good practice."*
- *"The matter of science journalism is too targeted to scientist and people already interested in science."*
- *"Yes, but additional policies and practices can be implemented."*
- *"We should be careful not to infantilise the audience."*

Who should be involved in implementing the respective PPOs and how?

- *Schools, universities,*
- *Social institutions*
- *Local government*
- *Businesses*

Do the PPOs cover all possible solutions? Is there anything else that can be added as an option?

There was a unanimous conviction that the policy and practice options did not cover all possible solutions. The following solutions were added:

  – Policies:
    o Avoid discrimination and promote positive discrimination (with incentives)
    o Provide financial incentives
    o Fund itinerant theatre to meet people in villages
  – Practices:
    o Facilitate communication
    o Apply participant selection techniques (stratification and representability)
    o Use mass media tools – Instagram, Facebook.

Additionally, participants consider that there should be continued dialogue with citizens. Whichever policy or practice option, without trusting (having some emotional bond to) the provider of the policy or practice, they won't work.

Quotes:

  – *"Clearly not."*
  – *"There should be a random selection of people. If this kind of initiative is not implemented there will always be skewed participation in the events."*
  – *"There is the solution of paying people. This incentive could have a negative effect – e.g. disregard participation per se, for being interested in the matter."*
  – "Policies or practices should be adequate."

Challenge 2

1) Please, describe the challenge and the respective policy and practice options you have developed to address it.

Challenge: Citizens feel unprepared and/or insufficiently knowledgeable about the discussed topic. Some citizens questioned whether they themselves and other randomly selected participants would be competent enough to take part in decision-making in R&I. Other participants thought that previous knowledge is less important.

Policy and practice options:

  • Provide information sessions and background materials to the participants in advance so that they can feel better prepared for the discussions (depending on the methodology; in some cases, this would not be appropriate strategy);
  • Promote science journalism and talk about science in the media, science museums, etc. to improve awareness about scientific developments and foster science education among citizens;
  • Involve both experts on the topic and lay citizens (i.e. non-experts) in the consultations to get the perspectives of those who are more knowledgeable on the topic as well;
  • Organisers specify in the invitations if any background on the topic is considered necessary to participate in the event;
  • Citizens should primarily discuss ethical questions rather than factual questions.

2) Why did you select this challenge and PPOs?
It was a thought-provoking and debatable issue to present to participants. It was also relevant to the groups as it was a question that arose in the first panel meeting.

3) Summary of groups' discussions on the challenge

Reactions about the challenge itself by the participants in the groups.

Participants agreed that the theme was important, but disagreed to its direction – should people be informed or not.

Some argued that lay people would constitute important assets, as they could echo ethical or societally-based concerns more easily, and be less influenced by formal sources. In fact, the group of people should reflect society. In this sense the panel would include experts, knowledgeable and non-knowledgeable people. Moreover, there would be a need to clearly define what information to give, as this could be skewed towards some pre-validated decision.

Others believed that ill-informed opinions would be detrimental to a prosperous society, as there would be no sufficient information to ground decisions. In their opinion, some decisions are not a matter of ethics, but of evidence-based good sense. Some additional notes included: (1) in the presence of evidences, to withhold them from the participants would be senseless, and (2) there should be information about the methodology of the panel.

Quotes:

- *"I don't need to have an opinion"*
- *"Some previous information is good".*
- *"For and against must be known."*
- *"Public discussion without a minimum of literacy may be conditioned by people's activism. There are themes where public information would be tied down as good at the outset on erroneous grounds. These may be connected with vested interests."*
- *"In the first meeting, we came unprepared but we were able to discuss the issue."*
- *"Ethical discussions should also be based in sound information. There need to be knowledge about the impact. Participants should be made aware of that."*
- *"Non-discrimination is paramount."*
- *"Ethical issues are fundamental, and they precede any other, but they are not enough. Factual issues are also necessary".*
- *"Preparation is more or less to level the opinions of people. The preparation is invariably partial. There are also ethical concerns here as well."*

Should the proposed PPOs be implemented? Why? Why not? What are the advantages and disadvantages of implementing the PPOs?

The presented policy and practice options were considered useful. There were however the following comments:

- „Limit discussions to ethical issues instead of factual issues" should be a practice and not a policy.
- All practices are important.
- Remove „specify in invitation what level of knowledge / skill is required".
- Political journalism is important. Even in an ethical discussion it is necessary to know what one is talking about.

Who should be involved in implementing the respective PPOs and how?

Government (local, national European). There should also be a target to comply with regarding public participation in decision making (inc. R&I)

Do the PPOs cover all possible solutions? Is there anything else that can be added as an option?

There was a unanimous conviction that the policy and practice options did not cover all possible solutions. The following solutions were added:

- Policy options:
  - o Incorporate citizenship education in early levels of education

- o   Set European level milestones / goals for R&I participation
- – Practice options:
  - o   Limit discussions to ethical issues instead of factual issues
  - o   Do not allow any kind of discrimination on the invitations to participate
  - o   Involve cultural organisations (e.g. theatre companies)

Challenge 3

1) Please, describe the challenge and the respective policy and practice options you have developed to address it.

Challenge: The topic is not "burning" or citizens don't feel it is relevant to their everyday life.

- • In the invitation, explain the topic in simple terms and explain how the topic relates to everyday life. Demonstrate the (potential future) relevance of the topic to the participants with personal stories, narratives and examples of how the issue has affected/might affect people's lives;
- • Promote science journalism as a way to reach the public and spread awareness about scientific developments and how they can be relevant to citizens before a risk/controversy/etc. makes it a "burning issue".

2) Why did you select this challenge and PPOs?
It was a thought-provoking and debatable issue to present to participants. It was also relevant to the groups as it was a question that arose in the first panel meeting.

3) Summary of groups' discussions on the challenge

Reactions about the challenge itself by the participants in the groups.

Participants believed that the challenge was perfectly relevant. There should be state intervention to make people more engaged in research.

Some participants blamed "uninteresting" topics on the quality of the information provided, and others blamed the medium or the language – that could be unintelligible to the listener, but if properly explained, would turn out more interesting.

Most participants argued that the subject would need to become "hot". A number of examples of adequate communication methods were given, that would be instrumental in transforming complicated subjects in an interesting albeit thought-provoking subject.

Quotes:
- – *"Take the example of the National Geographic magazine"*
- – *"The example of the "Bom Português" initiative. It is a television show where matters of spelling in Portuguese are explained in a light, but knowledgeable manner."*
- – *"We need to make it a „hot" subject."*
- – *"At least there was information that research was applied in a good manner."*
- – *"Sometimes there is research that we do not know the goals or the relevance for society."*
- – *"Themes that are less interesting, maybe because of the way they are transmitted. If I hear a computer engineer talk amongst themselves, I may find it uninteresting. Language is just not adequate."*
- – *"There is a lot of information available, with differentiated quality."*

- *"Control by the population is however necessary. For example pharmaceutical companies are not interested in exploring some kind of medicine. There needs to be state intervention, or any other way citizens can influence research directions. "*

Should the proposed PPOs be implemented? Why? Why not? What are the advantages and disadvantages of implementing the PPOs?

The proposed policy option would not suffice - there should be additional options. The practices on the other hand were considered very relevant and adequate. Some members provided however some nuanced considerations. For example, there should not be an effort to "dumb-down" discussions, as this would be a sign that seriousness, relevance and responsibility were being taken away from discussing science and scientific directions. Lessons from the Science Communication Centres should be heeded to transform science in an interesting matter for all citizens. There should also be an attempt to broaden such activities to adults in particular. Science should be explained in an easier and entertaining manner whichever the audience.

Some members argued however that if people are simply not interested, they should clearly not be forced.

Quotes:

- *"If people are not interested on the theme, they should not participate! If people are not willing we cannot force them."*
- *"But... we cannot isolate ourselves from the issues. Policies are needed to get people to participate."*
- *"There are several types of research. For example, I do not know what happens in mathematics, and maybe there are few immediately practical results. But they will contribute eventually to innovation. Google was based in mathematical research."*
- *"There is also some kind of research that must be kept a secret. There is a phase that may require silence."*
- *"In 1974 and 1975 there was an intense campaign to educate the masses. We cannot take scientific journalism to people who can't read. We should use the digital media to take the message across to the general population."*

Who should be involved in implementing the respective PPOs and how?

- Government
- There should be a task of locally stimulating the population to take part in policy developments. The media should not be the only responsible actor, but also the local authorities.

Do the PPOs cover all possible solutions? Is there anything else that can be added as an option?

The panel was consensual about the fact that there are additional solutions. The challenge in itself amounted to two types of problems: a communication problem, and a disconnection between research and the citizen.

The first problem – communication – should be dealt with employing "communication facilitators" such as radio hosts. They would be able to translate science matters. There should be paid allocation of science bits or stories in the media. There are also other methods to reach audiences, such as the "theatre of the oppressed" method.

The second problem – the disconnection – can be dealt with two main actions:

- Conducive work policies to allow people to have the time to be interested in and participate in civic engagement.
- Allocate a percentage of project budgets on project communication and outreach activities in the newspapers, radio, and television to a lay audience.

The necessary policy and practice options would translate as the following:

- Policy options:
  - Adaptation of work policies
  - Mandatory funding of civic engagement activities in research and innovation
  - Adaptation of scientific content for non-scientific communities
  - Scientific journalism
  - Education
  - Information and technology dissemination
- Practices:
  - Scientific journalism – shape means to the target audience. A young audience should be targeted through social media. Rural audiences through municipalities and other proximity institutions. Translate information through intermediaries, e.g. sports. Place sportsmen talk of sciences and possible implications.
  - Education – target activities to children in order to reach the parents.
  - Widen access to ICT

Quotes:

- *Clearly not. The challenge means there are two main problems: a communication problem, and a disconnection from the common citizen.*
- *There is also the example of the "Theatre of the oppressed". The play shows examples of personal and family problems, and how people (can) deal with them.*
- *Advertising (on TV): nanotechnology can be publicised the same way as cars. There is stupidification of the masses.*
- *We need a new breed of publicity. There were some commercials which were changed because they were not adequate (ex. Cereals commercials starring impeccably skinny models)*
- *There should be a balance in the news.*
- *Researchers must reach the people – they have to sell their product the same way as businesses. For example robotics: researchers should explain what the purpose of its research, and be controlled or monitored by the people. There is also a risk that research can get self-serving.*

Messages

GROUP 1

1) What needs to be done to make citizen engagement in R&I (more) attractive?

- To make public participation mandatory.
- Include in school curricula citizenship concepts and practices.
- Establish a mandatory minimum percentage of research project to dissemination activities.
- Inclusive and non-discriminatory policies – create mechanisms in public participation processes of inclusion of minorities. Statistical representativeness of the population should be guaranteed in the selection process.
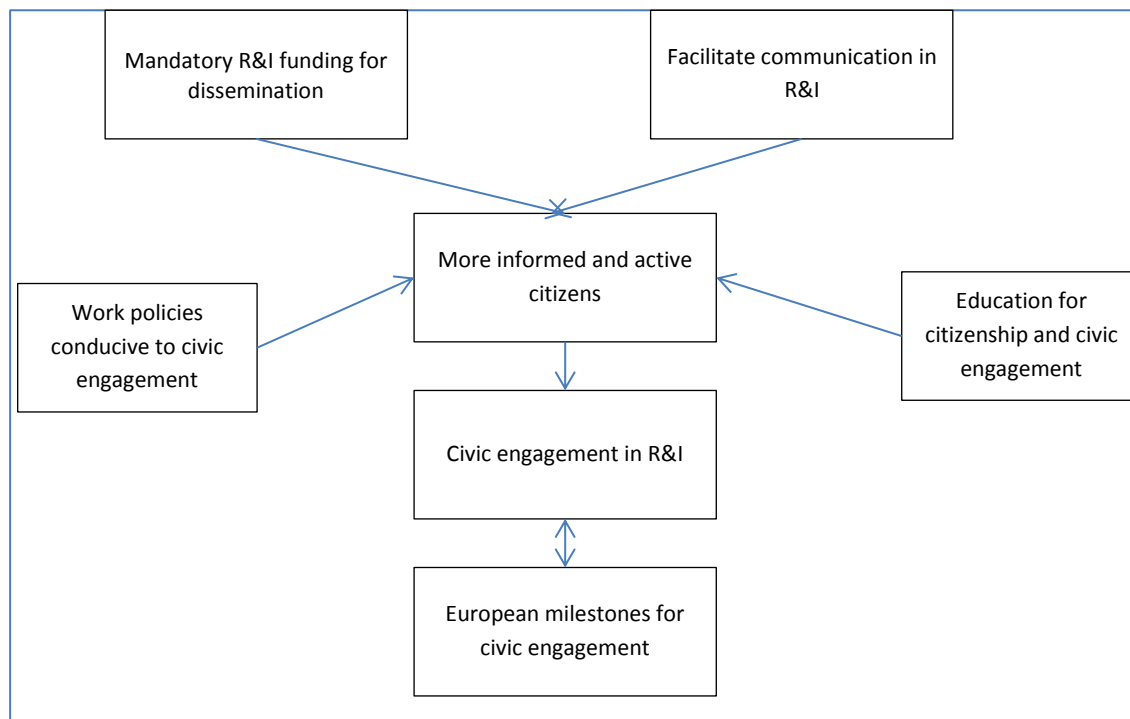
Figure 1. Drawing provided during discussions

2) Whose contributions are required and what is required by whom?

- − National and European policy-makers.

GROUP 2

1) What needs to be done to make citizen engagement in R&I (more) attractive?

In order to make public participation in Research and Innovation more attractive to the general population, we propose that the practical implications in everyday life are clear and exemplified so that more easily those concerned can recognise the value and utility of the innovation, and gain interest in the issue. On the long run we suggest an effort to be made for scientific literacy and civic training from childhood and across the board through all social and economic strata. This will have an effect on active citizenship in decision making.

2) Whose contributions are required and what is required by whom?
We believe that the mandatory guidelines towards simplifying and approximating scientific themes to the population should in general be stipulated through European norms, and set in motion by national and European institutions with the necessary adaptations to each social and political context.

- − Make information clear and relevant.
- − Education for active citizenship.
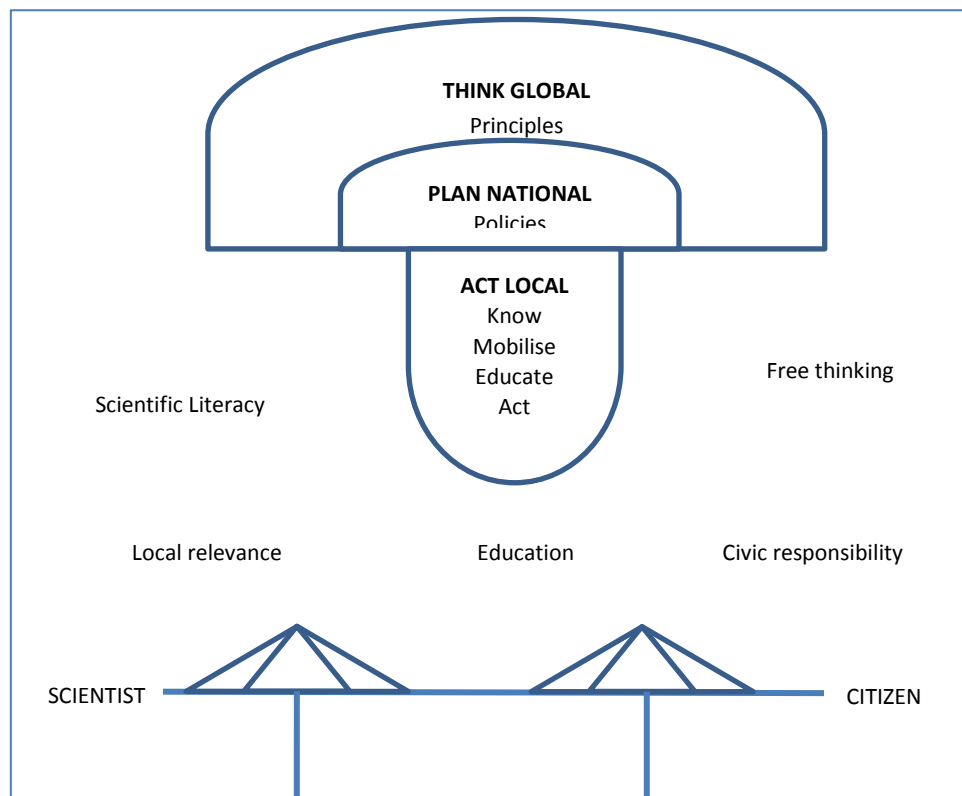- − European guidelines – local application.

Figure 2. Drawing provided during discussions

GROUP 3

1) What needs to be done to make citizen engagement in R&I (more) attractive?

- Through education and information that can generate interest, ownership and a larger investment in the access to necessary means of information.
- The education system as catalyst of societal interest (and not only scientific journalism).
- Knowledge transmission can be adaptable to different levels of knowledge (challenge 2 or 3).
- Through pedagogical programmes together with science museums.
- It is necessary to simplify the language.
- To promote engagement there needs to be preparation. The more diverse the panel is, the less prepared participants would be.
- Companies should take ownership as well.
- People should be made aware but giving examples is even more important.
- Clear and accessible information to different kind of audiences – children, elderly, educated and less educated people.

2) Whose contributions are required and what is required by whom?
- State intervention.

2.5   United Kingdom

Authors: Partner SURREY (Emily Porth, Lada Timotijević and Monique Raats)

2.5.1   First citizen panel

FOCUS GROUP 1

Table moderator name	*Lada Timotijević*
Note taker name	*Charo*
Number of participants	*5*
Sub-domain discussed by the group	*Nanotechnology*

Group session 1 – Warm up

Q1. What experience do participants have with public engagement so far?

Brief Summary/Key Points	Notable Quotes
Most participants have limited experience of formal public engagement events. One is part of a wolf-watching group, as a part of his interest in ecology. One participant is a Scout leader within his local community and has participated in a range of School- and local-community –based voluntary events. Other participants have been involved in market research panels such as focus groups and surveys.	

Q2. What motivates the participants to take part in this specific event and methodology?

Brief Summary/Key Points	Notable Quotes
The very initial response to this question was the financial incentive. The majority of people deemed the incentive of £200 a strong and only incentive to take part. Upon the discussion later on, there was some evidence that: a) the participants were curious about what the event was about (understanding that this is "research about research"; b) that they felt that they could learn something from the event; c) that they have never participated in something like this, therefore worth giving it a go.	

Q3. What are the participants' expectations and concerns related to the event and methodology?

Brief Summary/Key Points	Notable Quotes
The participants felt that they might learn something new, that they may meet some new people. Concerns that they may not be able to contribute sufficiently and may not be informed well enough.	

Group session 2: Introduction to 'their' sub-domain of R&I

Q4. How knowledgeable participants consider themselves to be in this particular area of research?

Brief Summary/Key Points	Notable Quotes

After the participants have read the information on the nanotechnology, they indicated that they had no knowledge of it. Only two members of the public have ever heard of nano – one in fact had bought a product (shoe wax) which was made with nanotechnology, and one said that she had heard of it but had little knowledge about what it is. One thought it sounded like „little robots". Most people thought that the visual representation was a very effective way of representing the key concept of nanotechnology. The participants discussed the merit of the technological solution to pollution being proposed by saying that it is „worth a try", though a few have highlighted the potential risk – that it may affect the eco system.

Q5. How relevant do they think this issue is to their everyday life as of nowadays? What about the future?

Brief Summary/Key Points	Notable Quotes
The participants thought it was a relevant issue, particularly in the urban and more developed areas. One participant thought that the issues is particularly pertinent for the fast developing and populated countries such as India and China.	

Q6. How important do they think this issue is for the society as a whole? Why?

Brief Summary/Key Points	Notable Quotes
As above, an important issue for ecology, therefore of importance to society, maybe more to certain geographic parts where there is high density population.	

Group session 3: Category of engagement: Citizen Dialogue

Q7. What are the motivations of citizens to take part in the presented engagement opportunities?

Brief Summary/Key Points	Notable Quotes
In terms of motivation to participate, the topic itself did not seem inviting – it was perceived as being primarily of interest to those who are proactive in environment but for most it is a bit too specific. Apart from monetary, there is little benefit in participating unless you are particularly interested in the topic. The letter doesn't mention how much Stipend is (and the word is rather funny, not recognised by most), as it could mean small or large amount. Since there is no clear promise that the participants' input will be valued, there is no perceived benefit for participation. Motivation of the person inviting people to attend is not obvious either – why do they want you specifically? Sense of community would encourage engagement but community means different things to different people. Benefits are seen to be at a global level rather than a personal one.	„Maybe less specific would encourage more people"

Q8. What holds them back from doing so? What are their concerns and perceived obstacles for participation? What could change their position?

Brief Summary/Key Points	Notable Quotes

Having read the invitation, the participants instantly commented on the layout of the letter, which would be the main obstacle to even considering engaging with the text. They felt that there was too much information, that the source was not corroborated (no logo/no signature). Instantly, people reacted to the concept of „citizens", indicating that the concept does not sit well with the English culture and that terms such as the public or individuals should be used. Some other concerns about the form of the letter include:

- Should not have 'nano' in top line;
- Needs statement to reassure it is not from a company and that they are not making money out of it
- Results info and how they will be used could be moved up to the top. What happens to results is so important
- 'Citizen Dialogue' is not a widely known term (unappealing). Quite an American term
- „Where and when" is important and should be earlier in the letter
- No signature means it is impersonal. Contact us @info… is too impersonal - a name would be better
- Contact should be a persons' name rather than an institute
- Looks like a circular not a letter
- It should not mention at this stage that groups will have to present at the meeting as this is scary and off-putting
- Don't need points 1-3, too much waffle, and it takes away curiosity
- Not clear who you are after
- Too text-heavy, needs more marketing input, pictures, glossy presentation (like the University of Surrey info pack that they received), better design would be more engaging
- Size of the planned group is important (being part of a small select group can be motivating)
- Location and venue is an important factor in decision making
- Paragraph 1 is too technical
- Affiliation is important for provenance/trust. Would look up links (e.g. Ministry of Food etc). Brand is important.
- There is no overall website to validate info

Overall, the participants felt that there was lot of information, though not the right sort of information (e.g. the incentives, the impact of the deliberation, the corroborated information about the organiser was missing). The concept „citizen dialogue" was meaningless, and did not clearly indicate what it might be. It appears to be too much effort for no benefit and of not concern to anyone apart from those narrowly interested in nano.

Q9. What do participants see as possible benefits for them personally/the wider public/other stakeholder groups (incl. researchers/policy-makers/other decision-makers)?

Brief Summary/Key Points	Notable Quotes

Would appeal mainly to those proactive in environment but for most it is a bit too specific. Benefits are seen at ta global rather than a personal level. Future generations might also benefit as pollution is a matter for the future. However, the stated risk of this technology was also highlighted as an issue that needs to be addressed, though primarily by scientists. The participants trusted scientists and the regulators (government) to have appropriate procedures in place to monitor the development of technology- no need for citizen panels.

Group session 4: Category of engagement: Citizen Evaluation Board

Q10. What are the motivations of citizens to take part in the presented engagement opportunities?

Brief Summary/Key Points	Notable Quotes
Overall, the participants instantly had a more positive reaction to the Citizens Evaluation Board. They said that the idea of being a part of the „Board" makes you feel valued and important; that the duration and the nature of the engagement indicates that your input will be into decision making processes, therefore of value and worthwhile. You will be informed about the outcome of the event, so there will be continuity. From this point of view, the participants felt that they could make a difference as members of the CEB. The knowledge of the national research foundation as the funder gives it greater wait – it matters who the sponsor is! When discussing the format of the letter itself, the participants were unanimously more positive as well – they felt that the letter addressed the right questions that the first (citizen dialogue) did not and was more accessible, less technical. There was a sense that the remuneration will be substantive (even though it was not mentioned), because of the effort required of the participants (the time). It mentioned training/info meeting to begin with and made it feel like it is open to anyone. The length of it also made it feel like your input is truly valued. The information about the event itself is appealing, regardless of the topic.	*„Sounds really cool and looks like it means it will make a difference"*

Q11. What holds them back from doing so? What are their concerns and perceived obstacles for participation? What could change their position?

Brief Summary/Key Points	Notable Quotes
They still did not like the fact that the logo was missing. The prolonged commitment – over 2 years, could put some people off even though it is only 4 meetings. Some people felt that there was still too much information which might put off those who are not engaged in the topic. It is important to leave some „teasers" for the people to become curious about what the event is about. In line with the participants' general dislike of the term „citizens", they argued that the term 'Citizen's Evaluation board' would put people off – better use the term 'Evaluation. They also felt that three days (two of which are half days, and one of which is Friday) would exclude many from participating and that two whole days over a weekend would be better than. The invitation does not indicate that you	

MUST participate in all meetings to get the payment – which may lead to some people committing only partially.	

Q12. What do participants see as possible benefits for them personally/the wider public/other stakeholder groups (incl. researchers/policy-makers/other decision-makers)?

Brief Summary/Key Points	Notable Quotes
This event would benefit the government and the scientists. A few of them mentioned society as well, only when prompted. They said that it would benefit the participants themselves because of the experience they would gain and the money. However, the participants emphasised that the event is potentially problematic because of the low representativeness of the selected citizens – they questioned whether a small group of individuals should have a say over the direction of research because of the limited expertise. They said that the public could be victim to marketing strategies so that less valuable research would be evaluated highly simply because of the presenter being more successful at communicating the ideas, not because of the scientific merit itself. When asked how they envisage their feedback to be used (e.g. if they voted for some ideas not to be funded), the participants said that they should still be funded, since the publics' views matter less than the experts'.	

Group session 5: Category of engagement: Science Café

Q13. What are the motivations of citizens to take part in the presented engagement opportunities?

Brief Summary/Key Points	Notable Quotes
The participants quickly moved onto the next format and immediately reacted negatively. None of them have ever heard of science cafe. They said that this appears to be a more relaxed event and looks like a seminar, so for those who might be interested, this may be an option. They also liked the fact that the leaflet mentioned specific names of scientists, though concluded that if one wanted to find out what these scientists would have to say, they could simply look up at the internet and not have to come to the event. The venue is local, and that's good, and also the fact it is in the evening is good. People then discussed what would make people more likely to attend, and the conversation diverted towards TED talks – a format which is highly successful and oversubscribed. The innovative element with science cafe would be the interactive element, which departs from the TED talks. So it would need to be advertised widely through the social media. One person thought that the leaflet was suitable for specific places such as public library or the university, not to be received under the door together with all the other junk mail. He said that he might be interested if he saw it placed in the right venue (e.g. a library or a hall) and if linked to his son's project. The title should be open ended, rather than closed, to invite the participants to discuss it.	

Q14. What holds them back from doing so? What are their concerns and perceived obstacles for participation? What could change their position?

Brief Summary/Key Points	Notable Quotes

The overall response to the leaflet about science cafe was negative. The participants claimed that the leaflet looked like propaganda, something you might get through the door i.e. a flyer. Most of them said that they would not be interested to participate as it looks irrelevant. Some of them conjured up an image of a lecture theatre or a hall, a very „academic" setting, rather than a cafe, probably because of the word „science" in the title. Others claimed that the concept „café" does not sit easily with them, since it indicates a very „European" style of outdoors eating/drinking. Some felt that cafe meant „a quick cup of coffee", therefore not a place for deep discussions. The ‚science café' concept is unfamiliar among this group of participants. The word ‚science' in the name indicates that it is mainly for the „clever" people, and many would feel put off by it, that this is not for them. If the focus were on the topic, and science was not mentioned in the title, it may draw more people. Also, the idea of „nanotechnology" is also difficult to grasp. Again, make it more relevant to people. One person said that, if it was about health or pollution, that would sound more attractive. Specificity of domain is important but too specific is not good, may only engage those with specific interest in that area. The event is low impact, as it does not offer to influence any decisions, therefore it is not seen as important.	

Q15. What do participants see as possible benefits for them personally/the wider public/other stakeholder groups (incl. researchers/policy-makers/other decision-makers)?

Brief Summary/Key Points	Notable Quotes
This would only benefit those who are clearly interested. One could potentially learn something new. The nature of the event is different to the other two as it does not portend to influence any decision-making. When probed about who should have a say in science and in what way, the participants said that it is a highly technical subject, that they would trust scientists to carry out research to the best interest of the society, and the government to have the right processes to regulate it. They did not see a huge value in citizens' involvement. It is more of a social event, which would suit some people's interests. Café – may be more appealing to younger generation. People with pollution-related asthma, for instance or those interested in ecology also might participate. Maybe those who are fans of the specific scientist.	

Group session 6: Comparisons of the three forms of engagement

Q16. In a comparative perspective, which opportunity is most/least attracting to participants and why?

Brief Summary/Key Points	Notable Quotes
Most appealing: Citizen Evaluation Board -made you feel important and that your opinion was valued -the event is legitimised by having links to websites and appropriate, known funding body -stipend is assumed to be quite an appealing amount of money, based on the length of the event -there was detailed information about who, what, where and why	

-the outcomes will be fed back to the citizens
-the letter was not too technical jargon, it was written in layman's terms
-it mentioned training/info meeting to begin with and makes it feel like it is open to anyone
-length of CEB made it seem like participants' opinion was truly valued because participation was long term
-invitation lay out included info that would make it feel more appealing regardless of the subject
-it is worthwhile to members of the public to be involved in science and gain an understanding about a particular topic
- it is worthwhile for scientists to understand how the public feel about the subject and what is important to them
- however, it does not take into account the bias of the public
Least appealing: Science Cafe:
-the invite itself is not appealing
-seems limiting to people not interested in the topic area
-an informal setting doesn't translate into learning about science
-there is no opportunity for your involvement to make a difference
-it is a place to disseminate information, not to make decisions

Q17. Which opportunity brings most benefits to the different stakeholder groups (the public at large, researchers, policy-makers/politicians), etc.?

Brief Summary/Key Points	Notable Quotes
CEB:	
- is worthwhile to members of the public to be involved in science and gain an understanding about a particular topic.	
-It is worthwhile for scientists to understand how the public feel about the subject and what is important to them. However, it does not take into account the bias of the public.	
-it is worthwhile to the funder and the government, to understand what values the public hold and to help them make decisions	
-it may be worthwhile long term to the society	
Science cafe:	
-there is no opportunity for your involvement to make an impact.	
-It is most important to those with narrow interests in the subject, e.g. the specific scientist presenting and the public who share their interests.	

FOCUS GROUP 2

Table moderator name	*Emily Porth*
Note taker name	*Naomi*
Number of participants	*5*
Sub-domain discussed by the group	*Synthetic Biology / Bio-economy*

Group session 1 – Warm up

Q1. What experience do participants have with public engagement so far?

Brief Summary/Key Points	Notable Quotes
Quite a few people had experience participating in other projects (they were selected through the same company who we used to recruit them for PROSO). Very diverse projects, though, and most were commercial, such as testing a new iPlayer or virtual reality device. Another person participated in a study involving a driving app, and another in a marketing focus group to determine new food packaging. However, one participant was part of a more academic project about "Intergenerational Fairness" which focused on creating policies to help younger people (bitter about how they were being "screwed over by 'Baby Boomers'") to achieve a higher quality of life. This participant was particularly enthusiastic that the research event was attended by high level policy leaders with whom they could directly address their concerns and opinions. Others had more local volunteer experience. This included doing maintenance and mending upon request for a local youth club, volunteering at the local Rotary club, delivering blood and organs between hospitals on motorcycle, and acting as a 'London Ambassador' at the 2012 Olympics.	

Q2. What motivates the participants to take part in this specific event and methodology?

Brief Summary/Key Points	Notable Quotes
The reason that most people said they wanted to participate was to learn/educate themselves about others' opinions and share their own. Most participants agreed that it was beneficial for themselves, and they saw it being beneficial for the greater good as well. They were also curious about what the discussion would entail (particularly in terms of what it was about, because we provided so little information!). The stipend we will pay them was a factor in their decision to participate, but they made it clear their interest in the event was more holistic, and it was particularly impacted by each person's interest in new ideas and their eagerness to have a dialogue with other interested people.	*"Anything that makes you think about something is always good for you."*

Q3. What are the participants' expectations and concerns related to the event and methodology?

Brief Summary/Key Points	Notable Quotes

Some were concerned they didn't know enough about research, or about the topics being discussed, and wondered if they had gone 'into the deep end'. But others thought it sounded 'interesting and intriguing'. Either way, because we provided so little information initially, there was a sense that they did not have many particular expectations.	

Group session 2: Introduction to 'their' sub-domain of R&I

Q4. How knowledgeable participants consider themselves to be in this particular area of research?

Brief Summary/Key Points	Notable Quotes
After the participants had read the information on synbio, only one indicated that he had previously heard of it and had some knowledge. It was a completely new topic for all of the other participants, although they had all heard of 'biofuels' before (in relation to the example in the info-text).	

Q5. How relevant do they think this issue is to their everyday life as of nowadays? What about the future?

Brief Summary/Key Points	Notable Quotes
When framed particularly in regard to the need to develop biofuels, all participants regarded this issue as incredibly relevant to their own lives, and to the lives of future generations. There was some initial worry that modified organisms could create huge problems for the environment (and, hence, humans), but there was also a strong realisation that we need alternatives to fossil fuels – and a feeling that humanity's need for alternatives trumped any concerns about the development and application of synbio-modified organisms. Some felt there should be a 'proviso' that this technology would not be applied to food. Participants agreed in their perception of scientists as conscientious people with good ethics who are not economically driven (all of which would help them to act responsibly). However, there was also an acknowledgement that scientists "tend to be in their bubble – they forget that others don't understand". Science and technological change can be frightening for a lot of people (e.g., driverless car) and people are nervous, so these new technologies need to be explained better and in ways that are more accessible to the public.	*"We have got to find ways of providing food and energy. 50 or 60 years ago we wouldn't have needed to due to the industrialisation of other nations, but what we have done in the past will no longer be sufficient. The number of people wanting everything that we have in the developed world will increase. The genie is out of the bottle!"* *"Synthetic biology is a necessary innovation, as there won't be enough food and energy without it."*

Q6. How important do they think this issue is for the society as a whole? Why?

Brief Summary/Key Points	Notable Quotes
As above, they considered this to be a crucial issue for the survival of the planet, and for the health and wellbeing of contemporary and future populations because humanity's dependence on fossil fuels affects every aspect of our lives. They are very conscious that "everything we have runs on electricity", and humans need to find new sources of energy – but, they also acknowledged the transition to 'green energy' would happen slowly over time. These are the	

reasons they were willing to risk the possible unintended consequences of synbio organisms in the environment.

Group session 3: Category of engagement: Citizen Dialogue

Q7. What are the motivations of citizens to take part in the presented engagement opportunity?

Brief Summary/Key Points	Notable Quotes
Participants immediately recognised the similar format between the invitation and the Citizen Panel event itself. They thought the letter was a better way of connecting with people than phone or email, and they thought that it should be widely distributed to get a large variety of people involved. Many of their reasons for participating in an event like this were the same as the ones they expressed re: participating in the Citizen Panel: - Interested in other people's opinions - Interested in expanding own opinions - Curiosity - Opportunity to participate in something useful - The stipend is nice (thought the amount we offered was appropriate) - Topic needs to be 'worthwhile' and feel relevant – there is a degree of altruism, but personal interest is important. Could have been better expressed in the letter, but having read the info-text before, they still found it interesting. - Opportunity to have your opinion heard and it might actually impact policy and real change in society - Feels good to be part of the process of making policy more transparent - Appreciate knowing that policy leaders are interested in the opinions of ordinary members of the public	*"Knowing that you have shared your input with the people who can actually change things"*

Q8. What holds them back from doing so? What are their concerns and perceived obstacles for participation? What could change their position?

Brief Summary/Key Points	Notable Quotes
In general, participants did not like the format of the letter. Some were particularly discouraged by the perception that everyone in the neighbourhood had received a letter, but they only wanted 20 people, and if you called to indicate your interest you still had to pass a set of criteria. They figured their chances of qualifying were so low that there was no point in trying. Putting '**your opinion**' in bold in the letter (to increase a recipient's feeling of importance) and then saying one had to pass a screening test, was particularly irksome for one participant. This discussion prompted all participants (who all had extensive experience filling in surveys for the recruitment company about whether they were eligible to be part of a particular project) to agree that they were frustrated by the recruitment processes they had experienced and often would	*"The invitation just wasn't transparent enough. There's not enough appealing information in it to make me want to participate."* *"They want your perspective depending on who you are… not going to bother then!"* *"If the topic isn't interesting, even the money would not help"*

not bother to fill in a form that had "endless screening questions". They felt even more frustrated if they did fill in the form for an interesting project and then never had any further communication. Fewer screening questions were perceived as better (as with PROSO – part of the reason they decided to participate).	*"It all comes down to the words that you use. Everyone understands 'sustainable energy' – leave the 'synthetic biology' out."*
The topic of the event was an important factor to determine participation. The invitation did not help them to feel that the topic was directly relevant to their lives; it needed to be framed in terms of words people have heard in the news - something connected to people's real lives. Some said they would be interested in the topic of synbio, but only if more information was provided. Participants agreed language like 'green fuels', or even 'fracking' (a common reference point for all participants) should have been used because most people have heard about them, rather than 'synthetic biology' (especially in the title). Although, the lone participant who had heard of synthetic biology thought the term should be used.	
Other factors that would discourage them from participating are time and location (many would only participate in local events) and if the organisation involved was not 'credible' or had conflicting interests – where the university was very credible, a petrochemical company would not be.	

Q9. What do participants see as possible benefits for them personally/the wider public/other stakeholder groups (incl. researchers/policy-makers/other decision-makers)?

Brief Summary/Key Points	Notable Quotes
Benefits were seen more at a global level, rather than a personal level – participating in this research (and the alternative fuels research itself) was in that way perceived to be a form of altruism and responsibility for future generations. (See Q5 and Q6)	*"the scientists can learn something from a layman's view."*
The benefits were definitely perceived to be long-term, and participants felt researchers benefitted from being 'taken out of their bubble' and having an additional perspective, and that this would lend credibility to their work. Policy makers benefit by taking account of citizens' opinions	*"It's nice to think your opinions might be taken into account."*

Group session 4: Category of engagement: Citizen Evaluation Board

Q10. What are the motivations of citizens to take part in the presented engagement opportunities?

Brief Summary/Key Points	Notable Quotes
Overall, participants were very enthusiastic about the Citizen Evaluation Board. Participants felt that they could actually make a difference as members of the CEB, and even though it required a much higher level of commitment, they felt it was a very valuable way to contribute to society more broadly – particularly when the funding involved was public money.	

The invitation was much more explanatory than the previous one in that it tells participants clearly what is expected of them, how they will contribute, and what the benefits will be. Even though the letter was longer, it was not off-putting. Overall, participants liked: • The words 'citizen evaluation board' seem more credible than 'citizen dialogue' • More explanatory than the last one – tells you clearly what your participation will be and provides a good level of detail about the events • 20 people is less off-putting because this is more of a commitment – if you felt strongly about the topic and were that interested, it feels like a greater chance to be able to participate and make an impact • Other invite (engagement B) had less clarity about what was expected, whereas this invite has more gravitas • Mention of national research organisation adds weight to the invite • Travelling further to participate would not be a problem if covering hotel and travel costs • The stipend offered needs "to reflect the time commitment, and the level of responsibility for what is involved"	

Q11. What holds them back from doing so? What are their concerns and perceived obstacles for participation? What could change their position?

Brief Summary/Key Points	Notable Quotes
Some participants felt that they would have difficulty committing to dates to participate up to two years ahead. Others felt that they would not want to investigate the opportunity to participate unless they were given a website to refer to where they could check out the organisation and find more information. (This issue about needing to provide a website where they could find more information for themselves before committing was a recurring theme in the discussions about each invitation – it is a really important point to consider when developing these engagement events!) There were also concerns about the selection criteria, and whether it's worth the effort if there is "a snowball's chance in hell of getting selected"; there was wider concern that they wouldn't be qualified and their opinions wouldn't be adequate. One person was also concerned the CEB "might be a box ticking exercise" and they "would want to know how they research is being used up-front" in the invitation letter.	

Q12. What do participants see as possible benefits for them personally/the wider public/other stakeholder groups (incl. researchers/policy-makers/other decision-makers)?

Brief Summary/Key Points	Notable Quotes
Participants thought that the obvious benefit for them would be "something that looks good on your CV". Less tangibly, though, they also felt that it would "feel good to have an input into the future".	

Participants were concerned that the event would not be fully beneficial for researchers unless a "feedback mechanism" was built-in to the consultation process so the CEB could provide feedback to researchers about how they could better engage with the public and with the needs of society in their proposed projects.	

Group session 5: Category of engagement: Science Café

Q13. What are the motivations of citizens to take part in the presented engagement opportunities?

Brief Summary/Key Points	Notable Quotes
Participants felt that if the event was local, and if you had a specific interest in the topic, then one might attend. This event was most appealing to the only member of this group in their twenties. People were also interested to go if they knew they had been selected to be on the Citizen Evaluation Board and they wanted to know more about synbio beforehand!	*"I would go for that – sort of science-y with a touch of philosophy"*

Q14. What holds them back from doing so? What are their concerns and perceived obstacles for participation? What could change their position?

Brief Summary/Key Points	Notable Quotes
No one in the group had heard of a science café before and most participants (particularly older participants) reacted negatively to the invitation. Part of this was the appearance of the invitation – that it looks like "junk mail" – and therefore wouldn't be noticed or taken seriously. Rather than a solid colour, the consensus was that it should feature university logos and maybe a central image to actually be noticed.	*"Is a café the right environment to discuss something as serious as this?"* *"I don't see the benefit of this for any future research programme"*
The science café was clearly a social event, and most participants didn't identify that type of event with "being social" (they would normally meet friends at the pub or something similar) and a science café was widely derided as "for nerds on bicycles" (and many jokes about this followed!).	*"Little bit vague and a little bit non-committal"* *"Intimidating because you might meet someone who knows more than you"*
All emphasised that for it to be really appealing, it would need to feature eminent speakers and be held at a central local location. There were some concerns about the limited number of participants, but also that the group might be too big and they wouldn't have a chance to ask questions. They would also be off-put if the prices of drinks at the venue were too high.	
The biggest obstacle, though, was that the science café would not have a direct impact on research or policy, and that is the part the group feels most passionate about.	

Q15. What do participants see as possible benefits for them personally/the wider public/other stakeholder groups (incl. researchers/policy-makers/other decision-makers)?

Brief Summary/Key Points	Notable Quotes
For the public it would be a good place to meet like-minded people and to learn more about topics of interest, but there was no perceived benefit for people who were disinterested in the topic.	

No perceived benefit for researchers, as participants' concerns wouldn't feed back into their work.	

Group session 6: Comparisons of the three forms of engagement

Q16. In a comparative perspective, which opportunity is most/least attracting to participants and why?

Brief Summary/Key Points	Notable Quotes
Most appealing: Citizen Evaluation Board • Board is change vs science café is social • Would like to feel that they are contributing/adding valuable in some way • Would learn more from being on the board, vs attending café. • Would be able to put more into the evaluation board and feel like they were making a bigger difference (although process needs to include a feedback mechanism so researchers can hear the CEB's concerns) • Invitation itself was much more informative Least appealing: Science Cafe • Not a serious enough way to address a serious topic • The invite itself is not appealing • Seems limiting to people not interested in the topic area (most agreed they would go if it was about topics like healthy ageing, yoga, nutrition, etc, but seemed dissuaded by more complex subjects not perceived to be relevant to their lives) • There is no opportunity for your involvement to make a difference One person (the youngest) found the café most appealing and would not want to be on the evaluation board, both because of the level of commitment, and because (s)he felt (s)he was not knowledgeable enough.	

Q17. Which opportunity brings most benefits to the different stakeholder groups (the public at large, researchers, policy-makers/politicians), etc.?

Brief Summary/Key Points	Notable Quotes
CEB: • Beneficial to research funders in justifying their funding decisions • Worthwhile for scientists to understand how the public feel about various projects and what is important to them, and how they can incorporate those interests and values into research • Worthwhile to the funder and government, to understand what values the public hold and to help them make decisions • May be worthwhile to the society in the long-term	

FOCUS GROUP 3

Table moderator name	*Monique Raats*
Note taker name	*Ewan*
Number of participants	*5*
Sub-domain discussed by the group	*Food & Health*

Group session 1 – Warm up

Q1. What experience do participants have with public engagement so far?

Brief Summary/Key Points	Notable Quotes
Some of the participants cited their experiences voting in elections as examples of previous public engagement, while others mentioned involvement in union movements and participating in protests. One participant talked about their involvement in a school government and PTA. However, more accessible methods of public engagement were also mentioned, such as signing online petitions to support smaller projects and movements. Participants noted the contrast between some of these avenues of public engagement, particularly highlighting the legitimacy of some methods over others – for example, voting in an election is recognised as a significant method of public engagement more so than perhaps an online survey would be. The effectiveness of different types of elections was also mentioned – participants suggested that on an individual level perhaps local elections worked better from the perspective of feeling as though your vote had a more contributory factor. Whether the public could have a stronger voice was also discussed by the participants, particularly, boycotting companies was considered a "powerful tool" – but despite this the companies are still likely to receive custom. Starbucks was mentioned as a particular example of this – although many people would stop giving their money to the company, many people still will despite disagreeing with the company's behaviour (re. tax evasion). Although complaining and "pester power" can work, it is not always an effective tool to use.	*"Voting is so diluted nowadays"*

Q2. What motivates the participants to take part in this specific event and methodology?

Brief Summary/Key Points	Notable Quotes
The monetary compensation for giving their time to participate in the research was definitely a contributory factor for the participants, however, they also were intrigued by the topic and curious to see what specifically the project was about. The lack of information provided at the start influenced some of the participants – they weren't actually told what the specifics of the project was or why they should take part, so they wanted to find out more for themselves and take part.	

Q3. What are the participants' expectations and concerns related to the event and methodology?

Brief Summary/Key Points	Notable Quotes
Due to not having much information at the outset, participants' expectations were limited regarding the event.	

Group session 2: Introduction to 'their' sub-domain of R&I

Q4. How knowledgeable participants consider themselves to be in this particular area of research?

Brief Summary/Key Points	Notable Quotes
Participants seemed to feel they had some understanding of the topic due to its popularity and coverage by the media; although the 'sugar discussion' has recently become a popular and common concern for many people, it is a far from new concept – it has been around for a long time. One participant mentioned non-nutritive (NN) sweeteners and the sugar tax, and Jamie Oliver's campaigns for healthier eating were also discussed in relation to the topic. Additionally participants talked about the current trend for juice-based diets to improve health and that this had made them more aware of the topic.	

Q5. How relevant do they think this issue is to their everyday life as of nowadays? What about the future?

Brief Summary/Key Points	Notable Quotes
As discussed above, the participants felt that, especially with the pop-culture currently surrounding health choices, that issues relating to health are particularly pertinent at the moment. An example that the participants spoke about in particular was that of carbonated drinks: whereas these previously were expensive and therefore only enjoyed on occasion, they are far cheaper and therefore more widely consumed now. Also, the additional health considerations in relation to artificially sweetened drinks were discussed, such as the potential for carcinogenic chemicals being added in order to preserve the flavour. Participants also talked about sweetened drinks from the perspective of diabetes and obesity; the link between sugar and health is now more fully understood, and sugar is recognised as the main cause of obesity.	
Participants recognised that having a healthy diet alone is not enough to be healthy – a combination of good diet and exercise is necessary. However, many individuals lack the time to take exercise regularly, and it was noted that compared to previous generations we do not prepare as much food ourselves – we are much more reliant on convenience foods and pre-prepared meals.	
The role of education was also a topic of discussion. Teaching children to cook would provide them with a skill which then facilitates a healthy lifestyle, and by learning about sugar and sweeteners individuals would be better equipped to make informed decisions about these. Also, supermarkets are now better able to cater to a range of dietary requirements more so than before, for example diabetic chocolate is now more widely available than it	*"I've been eating artificial sweetners for years – I'm still here"*

| previously was. However, it was also noted that whilst the media can be a source of education, it can also be a source of scaremongering: perhaps sweeteners are not as bad as they would lead society to believe. | |

Q6. How important do they think this issue is for the society as a whole? Why?

Brief Summary/Key Points	Notable Quotes
The participants showed an appreciation of health-related problems as being an ongoing issue, but also acknowledged that there is action being taken to counteract and help with this, particularly in recent years. The importance of a healthy and balanced diet was mentioned, with the phrase 'you are what you eat' used as an example. However, the real issue in this respect is that of knowing what foods are 'right' vs 'wrong' and being able to incorporate this into their everyday lives in the correct ratios; there was also discussion about whether an individual's wealth could cause them to over-indulge – "affluenza". Sedentary lifestyle was also discussed as an important factor of influence on health in modern-day living – more desk jobs and fewer manual jobs mean that generally, people are more inactive on a day-to-day basis. As time has progressed diet and lifestyle have become mismatched.	*"We are what we eat – but what is right?"*
Again, the role of education was considered with respect to cutting down the healthcare costs implicated by obesity. By educating people about better choices and making sure school canteens provide healthier options it may be possible to create a healthier generation. Also, if a "sugar tax" were to be introduced this may have a positive benefit, as possibly individuals would be less inclined to purchase foods high in sugar. Participants also voiced the idea that food is for health and therefore survival, but over time we have become accustomed to eating in excess. Through education this could perhaps be reduced and a better knowledge of nutrition and health gained.	*"we have become greedy – our taste buds have exploded"*

Group session 3: Category of engagement: Citizen Dialogue

Q7. What are the motivations of citizens to take part in the presented engagement opportunities?

Brief Summary/Key Points	Notable Quotes
Although the citizens generally did not feel motivated to participate in this particular category of engagement, they were able to identify factors which would be motivating when asked by the moderator. In particular, the importance of engaging with children was discussed as a way to motivate parents, as adults may have a narrower world view or be less inclined to try new foods. The ideas they expressed here also linked with their earlier ideas about the role of education in improving and promoting health-related behaviours. They indicated that they would prefer a less formal scenario with smaller groups and that including personal stories, e.g. from the perspective of someone with diabetes would be insightful and engaging so therefore would motivate them to attend.	

Q8. What holds them back from doing so? What are their concerns and perceived obstacles for participation? What could change their position?

Brief Summary/Key Points	Notable Quotes
Citizens responded quite negatively to this category of engagement. The consensus amongst this group was that they would not want to partake in this event. The moderator asked the group for recommendations as to what could be done in order to make it seem more appealing: • The layout was quite plain, so make the invitation look more interesting and engaging as this would encourage people to respond • Make some of the details clearer on the sheet – for example it doesn't say how much the stipend would be for their participation, which may be a significant motivational factor • The participants felt that the phrasing of the invite was "a bit Roman" and the event comes across as overly formal and scientific. For example, 'citizen' is rather legal and upper middle class sounding, so perhaps by changing this to "public dialogue" would be of benefit • The invite was on the whole jargon-heavy, and there was too much information presented –participants therefore felt it would be better to cut this down. • The inclusion criteria seemed very limiting; the opinions of individuals from a non-scientific background may be of value too • The proposed structure of the event was off-putting for some of the citizens, as they said the researchers talking first would be intimidating for some.	

Q9. What do participants see as possible benefits for them personally/the wider public/other stakeholder groups (incl. researchers/policy-makers/other decision-makers)?

Brief Summary/Key Points	Notable Quotes
Due to the participants' lack of interest in the citizen dialogue, they did not identify many possible benefits for them personally. However, they did acknowledge that it may be beneficial in terms of personal education and increased awareness of the topic. There was discussion as to whether private companies should run such an event and it was suggested that while the companies should not run the event themselves, it would increase the credibility if the company was represented so that they might be able to justify their actions. Participants felt that they would have more impact if they could communicate directly with the company. There was also a feeling that the government should force or incentivise companies to participate in events such as this, or to engage with the public. There was a feeling that the event may be a bit small-scale; to have more of an impact it was suggested that social media platforms may be used to promote the event.	

Group session 4: Category of engagement: Citizen Evaluation Board

Q10. What are the motivations of citizens to take part in the presented engagement opportunities?

Brief Summary/Key Points	Notable Quotes
The participants definitely found this engagement opportunity more appealing than the previous one. They expressed that they believed they would have more to contribute towards the discussion and felt that there was more that they could personally gain from attending compared to the Citizen's Dialogue scenario. The invite made the participants' proposed role within the engagement activity very clear, which they agreed would contribute towards their decision to go as it enables a more informed choice to be made. They did however mention that a 'follow-up' session for the engagement opportunity to reinforce the message being conveyed and also as they felt that people would want to know about the outcome of an event they gave their time up for. Additionally, the participants felt that the option of a one-to-one discussion would serve as motivation for individuals who dislike speaking out in group situations. Participants also mentioned that offering a stipend increased their motivation to partake in the engagement activity; however, they were unsure about attending across a weekend as individuals who work would need to take time off on the Friday – the participants discussed the possibility of companies becoming involved and paying for the participants' induction day in return for some form of tax benefit, for example. They also considered whether the researchers themselves should engage with the participants to help the public understand the research being done but also so that they would be able to see its impact on the public. However, they also mentioned that presenting information in more layman terms would be useful, using the example of Jamie Oliver; the message is delivered clearly and effectively. The government was also mentioned in the discussion, as some participants thought that further research and information regarding healthy choices might prompt the government to make healthier options cheaper and more easily available. They considered whether the government should organise similar style events in order to gain a better idea of the wants and needs of the public, and to help provide more consistent advice about healthy lifestyle choices. They also felt that if they could help provide evidence of the benefits of taking a particular action that the government would be able to act upon this, citing the decrease in smoking since the law changed regarding smoking in public places.	*"I went to 3 different clinics in the past with different advice from all 3…I gave up going in the end"*

Q11. What holds them back from doing so? What are their concerns and perceived obstacles for participation? What could change their position?

Brief Summary/Key Points	Notable Quotes
The participants felt that the invite was rather wordy and perhaps too much information to really engage with. Also, the amount of time that would need to be sacrificed was a limiting factor, as this particular engagement opportunity would require a whole weekend. Like with the previous engagement opportunity, participants also thought that there should be more clarity regarding how much the	

stipend would be. They were also unsure about how the funding would be distributed: would it be equally split between best science and most public benefit? The consensus for this was that ultimately, it would depend on how much funding was available, and that the best course of action would be to assess where to put the funding on a case-by-case basis.	

Q12. What do participants see as possible benefits for them personally/the wider public/other stakeholder groups (incl. researchers/policy-makers/other decision-makers)?

Brief Summary/Key Points	Notable Quotes
The participants spoke about whether the government would potentially benefit from this particular engagement opportunity, and as a result whether their funding for health-related issues could be better or more effectively used. Also, they felt that a range of different groups would be able to benefit from this scenario, as the evaluation panel would be able to include individuals from a variety of backgrounds; in theory, a wider scope of voices should be heard. It was also mentioned that the perceived level of responsibility that participants would have could be of benefit in allowing them to voice their opinions in a more meaningful way, as they felt that what they said would be thought of as more important. The participants thought it was good that the public were able to potentially engage with the process and have more direct involvement in health-related movements. However, they did also mention that it would be something that the individual was interested in; they did not seem to think people would participate otherwise.	

Group session 5: Category of engagement: Science Café

Q13. What are the motivations of citizens to take part in the presented engagement opportunities?

Brief Summary/Key Points	Notable Quotes
This category of engagement was by far the favourite amongst the group members. On the whole they felt the concept was interesting and that the tone would be better than in either of the other engagement opportunities due to its informal nature – it would come across as less of a scientific lecture, but more on a similar level as the speakers. The fact that the event would be free also appealed to the participants, with particular mention of those who may be interested in such an event but have a tighter budget, such as students. The style of the invite was also a motivational factor for some of the participants; they felt that due to some of the information being 'controversial' that there would likely be an interesting discussion. The setting of the event also appealed to the participants, as they thought the relaxed environment of a café where you could have something to eat and potentially sample some health-foods would make the event more interesting and interactive. A café situated in the town centre would also be accessible and therefore individuals may be more inclined to attend.	*"The subtitle makes you curious"*

Q14. What holds them back from doing so? What are their concerns and perceived obstacles for participation? What could change their position?

Brief Summary/Key Points	Notable Quotes
Participants commented that perhaps the flyer was not eye-catching enough to pick up of their free will, so they would only see it were it sent directly to them. However, some participants disagreed with this, because the format of an A5 flyer would stand out more and the event could more easily be promoted in surgeries and health centres, for example. Also, because the event was limited to just 40 places, some participants felt that it would not be worthwhile trying to apply as they most likely would not get a place; they suggested that it would be perhaps better to repeat the event over several sessions in order to receive a better public response. The participants also thought about whether the format of a question-answer session would be the best approach; it was suggested that having several researchers located around the room may be more conductive to the café location.	

Q15. What do participants see as possible benefits for them personally/the wider public/other stakeholder groups (incl. researchers/policy-makers/other decision-makers)?

Brief Summary/Key Points	Notable Quotes
The participants generally felt that attendees for the event would be educated so the information the researchers would receive would be potentially of a high quality. In order to get more detailed responses, small groups were suggested as the 'ideal' way to get good feedback for the researchers. It was also considered that due to the concept being intriguing it could be continued after the initial event via a "science bus" whereby the researchers could travel around and collect information from several locations.	*"go to your audience"*

Group session 6: Comparisons of the three forms of engagement

Q16. In a comparative perspective, which opportunity is most/least attracting to participants and why?

Brief Summary/Key Points	Notable Quotes
Participants felt that the most appealing invitation was the science café event because this would be more acceptable to a wider audience, less formal and more relaxed and engaging. It was also the better marketed event. The least appealing format was the citizens dialogue scenario, as the invitation was verbose came across as too scientific. The benefits were not made apparent enough and it did not appear to be targeted at the general public.	

Q17. Which opportunity brings most benefits to the different stakeholder groups (the public at large, researchers, policy-makers/politicians), etc.?

Brief Summary/Key Points	Notable Quotes
See above.	

2.5.2   Second citizen panel

1) Please describe the challenge and the respective policy and practice options you have developed to address it.

Challenge: Citizens want to be informed about food and health research through science cafés, but are less interested to engage in a citizen dialogue event or citizen funding board.

Policy and practice options:

- Option 1: Clearly explain how the topic relates to everyday life in the invitation. Demonstrate the (potential future) relevance of the topic to participants with personal stories, narratives and examples of how the issue has affected/might affect people's lives.
- Option 2: Raise awareness that health-related problems associated with food are the responsibility of society, and not just the responsibility of individuals. This may help citizens to understand why their engagement on this topic is so important.
- Option 3: Funders allow researchers to build larger research volunteer payments into research projects so people have a greater financial incentive to participate.
- Option 4: Choose a type of event that is appropriate to the issue being discussed, ensuring it involves education <u>and</u> engagement.

2) Why did you select this challenge and PPOs?
We selected this challenge because it was an interesting outcome of our first Citizen Panel event. We wanted to use the discussion in the second Citizen Panel as an opportunity to further explore the reasons for peoples' disinterest in more fully engaging in food and health research, and the options that might convince them to do so.

3) Summary of groups' discussions on the challenge

Reactions about the challenge itself by the participants in the groups.

- Despite the framing of the challenge and its options, participants in all groups were still inclined to think about food and health as a personal responsibility, and education about food as being tied up in entertainment (information provision).

Should the proposed PPOs be implemented? Why or why not?

- Option 1 was not widely discussed in any group; it was more or less assumed that food & health topics are relevant to daily life, although there were concerns about how the media spins research results in this area, and that people get overwhelmed and confused by conflicting information, or information that really isn't that important (ie, more important issues to focus on than the small risk of cancer that might come from eating burnt toast).
- Option 2 was somewhat dismissed, as participants still focused on food being in the realm of personal responsibility. There was also criticism about how taxes and bans on food infringe on personal choice, and that any sort of widespread law to encourage good behaviour (like the law making seatbelt use in cars mandatory) will take time to fully implement. However, there was discussion of education (especially primary and secondary schools) taking a role in this area by teaching cooking and nutrition, and offering healthy choices in school canteens. Participants believed that if the public was better educated about food more broadly, they would make healthier choices.

- Option 3 was generally supported – there was incredulity about how little participants in PROSO focus groups in other countries were being compensated to attend the day! Point stressed that it is crucial to pay a 'fair' amount of compensation that covers travel costs, childcare, and time to attend. Some suggested that if funding could not be found to pay for input into all research projects, then researchers should consider recruiting students in schools (beneficial for all involved). However, as in CP1, there were concerns that people 'might just come for the money' and not participate for the 'right' reasons.
- Option 4 not explicitly addressed by any group.

Who should be involved in implementing the respective PPOs and how?

- Funders need to implement and support Option 3
- Important to start engagement in research from a young age – again, researchers collaborating with schools
- Also thoughts that industry could be involved in Option 2 and act by reformulating foods, with consumer participation
- Government needs to be involved in Option 4, and could also work with industry (supermarkets) to offer incentives to buy healthy food (Option 2)

Do the PPOs cover all possible solutions? Is there anything else that can be added as an option?

- One group suggested the option that the science café could be used as a 'gateway' to further engagement activities (ie, have a 'sign-up sheet' at the back of the room for people who attended and want to become further involved in research).

Challenge 2

1) Please describe the challenge and the respective policy and practice options you have developed to address it.

Challenge: Citizens feel unprepared and/or insufficiently knowledgeable about the discussed topic. Some people questioned whether they or other randomly selected participants were competent enough be part of decision-making processes in policy and research.

Policy and practice options:

- Option 1: Promote wider coverage of science in the media, accessibility to science museums, etc. in order to improve awareness about scientific developments and foster science education among citizens
- Option 2: Provide information sessions and background materials to the participants in advance (depending on the type of event) so they feel better prepared for the discussions.
- Option 3: Involve both experts on the topic and lay citizens (non-experts) in the engagement event to get the perspectives of those who are more knowledgeable on the topic as well.
- Option 4: Organisers specify in the invitations if any background on the topic is considered necessary to participate in the event, or explicitly state they do not want participants with any expertise.

2) Why did you select this challenge and PPOs?
This challenge was a recurring theme in all 3 of our focus groups in the first Citizen Panel, particularly in the realms of nanotechnology and synthetic biology. We feel the options provided are a good range of solutions to this problem, and that they reflect a range of feasible policy and practice options.

3) Summary of groups' discussions on the challenge

Reactions about the challenge itself by the participants in the groups.

- One group thought it was expected that people would not feel qualified to participate in research, and people would be reluctant to participate because of that.
- Another group found this challenge much more difficult than the first one, but also felt that as citizens they are able to make decisions about science. However, they also agreed that it depends on how the information is presented to them by researchers, and how individuals interpret this information.
- Some participants felt that they didn't need to know much about the science, but more about the ethical implications/risks of the science, and this is how they could best contribute to research.
- Another group felt strongly that different types of laypeople needed to be recruited to one advisory group, to bring different perspectives and challenge each other's thinking, as well as researchers.
- It's also crucial to explain to citizens the importance of their contribution, and why it is so important for them to engage (ethical opinion, outside perspectives, etc).
- However, no one thought this participation should be mandatory like jury duty; people could engage and think of it as a type of civil duty as a citizen.

Should the proposed PPOs be implemented? Why or why not?

- One group really liked the idea of Option 1, but wanted to emphasise that museums themselves have an obligation to create engaging and interactive exhibits to make learning fun, and also to use very accessible language in the displays (something that some museums do better than others!).
- Also re: Option 1, participants in another group referred to the British science TV programme 'Tomorrow's World' as a good example of how to discuss science in a way that is accessible and engaging. They also suggested such a show be aired on TV in primetime hours so it's part of the main schedule.
- Two groups particularly liked the idea of Option 2 and felt the advance provision of information to participants was essential. In contrast, another group felt this created a potential conflict of interest because the researchers are providing the information (which will inevitably have a certain bias), and yet they are also asking for participants' opinions. As such, there was a feeling that a participant would need to do some of their own research/prep before engagement activity so they could form their own opinions.
- Option 3 was popular with all 3 groups. Lots of questions around what the ratio of lay people to experts would be, and how each group would be chosen. It was felt the experts would add credibility to the outcome of the event. One group, however, was concerned that the experts would dominate discussions, and perhaps intimidate laypeople who felt they had little to contribute in comparison.
- Option 4 was perceived to be very linked to Option 2, and it would make sense to do them both.

Who should be involved in implementing the respective PPOs and how?

- Media presenters could work in collaboration with the government and researchers to get more science on TV and reach a wider audience. Government could also encourage science journalism more broadly.
- Funding for outreach could come from the private sector, particularly if they are experts in an area of research and have a connection to popular consumer goods.
- Members of the public – particularly those who have participated in science engagement – should be involved; they can tell people about the benefits they experienced by being involved.

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- Researchers also need to communicate how they benefit from involving the public in their work, and clearly say that citizens do not need to have expert knowledge as a prerequisite to participation.

Do the PPOs cover all possible solutions? Is there anything else that can be added as an option?

- One group suggested two further options:
  - Option 5: Implement outreach activities to explore/demonstrate why a topic is important and should be of concern to everyone.
  - Option 6: Maintain free admission at museums in order to encourage informal learning about science.

Challenge 3

1) Please describe the challenge and the respective policy and practice options you have developed to address it.

Challenge: Citizens do not trust that the results of their engagement will have an impact on policy decision-making, or on the research process itself.

Policy and practice options:

- Option 1: Event organisers are transparent right from the beginning about what impact the engagement may or may not have.
- Option 2: Produce concrete output after the event, such as a final summary document, that is delivered to citizens. It is also published by the responsible authority for dissemination and further discussion, such as on a blog or website.
- Option 3: Implement procedures/mechanisms for tracing the long-term impact of the engagement process and inform citizens after the event how the engagement results were used and what impacts they have had.

2) Why did you select this challenge and PPOs?
We selected this challenge because our discussions in the first Citizen Panel, and our informal discussions with colleagues, indicate there is apprehension on both sides about whether and how citizen engagement will tangibly impact the research process. This was a good opportunity to better understand what kinds of assurances potential research participants would like from researchers in order to feel comfortable getting involved.

3) Summary of groups' discussions on the challenge

Reactions about the challenge itself by the participants in the groups.

- This challenge resonated with one group and they thought it was probably quite a common concern; they were worried the engagement would be carried out as a 'tick box exercise', rather than for a genuine desire to integrate the perspectives of citizens.
- Strong point from one group that it is really important for researchers to be transparent about the potential impact of engagement and reassure participants that the science 'was not a waste'.
- Another group was sceptical about what impact their opinions would actually have and felt this was a difficult challenge.

Should the proposed PPOs be implemented? Why or why not?

- One group did not reach a consensus on any of the options being better or worse and felt they would all be important components of cultivating trust with participants and being responsible.
- Two groups were sceptical about Option 1, not being sure if they could really believe what they were being told about potential impact! One group mentioned that trusting the researchers would depend on which organisation was involved.
- Options 2 & 3 were recommended as being optional, rather than compulsory.
- An important consideration re: Option 2 is accessibility, as government and researchers can't assume that everyone has internet access.
- Option 3 really appealed to one group; they liked the idea of receiving long-term updates about how their participation made a difference and they felt this would be an incentive in agreeing to participate. Others seeing these results might feel more inclined to participate as well, and this would reduce the costs of investing in citizen engagement over time.

Who should be involved in implementing the respective PPOs and how?

- An independent appraisal should happen for Option 3, so that participants fully trusted the results.
- Research funders are critical to ensuring there are enough resources (time and money) for researchers to invest in evaluating the long-term impact.

Do the PPOs cover all possible solutions? Is there anything else that can be added as an option?

- A group suggested two further options:
  - Option 4: Offer to provide site visits to other engagement projects before potential volunteers commit to engagement.
  - Option 5: Provide transparent case studies on the research institute/government website. This should have two columns for each project: what was done in the project, and what changed. This will help potential volunteers to better understand why their participation is important, and how it could make a difference. It is also important to report on unsuccessful research projects, in order to enhance transparency and demonstrate institutional learning.

Messages

GROUP 1

1) <u>Message 1</u> (or, 'What needs to be done to make citizen engagement in R&I (more) attractive?')

"Your opinion matters. Regardless of your background or experience, **it matters**."

2) Who should do it?

This message needs to come from all levels (government, manufacturing, research, etc.), and especially from partnerships between sectors.

3) Who should hear this message?

Public/Citizens

1) <u>Message 2</u> (or, 'What needs to be done to make citizen engagement in R&I (more) attractive?')

"The engagement process needs to be fun, interactive, and accessible."

2) Who should do it?

Funders, universities (supporting researchers), researchers, marketers.

3) Who should hear this message?

Media, researchers, funders, citizens.

GROUP 2

1) <u>Message 1</u> (or, 'What needs to be done to make citizen engagement in R&I (more) attractive?')

State the topic and briefly, in a factual, bullet point, true-to-life way, state:

- what change you want to make
- how people can be part of that change
- what positive outcomes you hope this will have
- how this can help solve problems in the long-term

2) Who should do it?

Government, sponsors and companies who have a shared interest.

3) Who should hear this message?

Anyone and everyone.

1) <u>Message 2</u> (or, 'What needs to be done to make citizen engagement in R&I (more) attractive?')

There needs to be a wholesale shift in public perception as to what 'science' is. At primary/secondary school level, science should be broadly defined and its accessibility on multiple levels reiterated; this might include highlighting the role of science in course subjects like home economics, physical education, and design and technology. If people feel they have a grounding in science, they will be more inclined to engage in scientific dialogue as adults.

Science needs to be normalised so that most scientific progression involves communication between experts and the public – this should be publicised in mass media. Convince citizens their opinions are valued.

Building partnerships between government and the private sector is key.

2) Who should do it?

Government bears the main responsibility, as they have the power to change things through policy, regulation, and incentivisation.

The help of the private sector is crucial because they have the biggest sway over people who may not be as interested in science.

3) Who should hear this message?

Everyone, particularly children.

GROUP 3

1) <u>Message</u> (or, 'What needs to be done to make citizen engagement in R&I (more) attractive?')

Society as a whole needs to be educated about cause and effect to be able to make more informed decisions throughout life. School education should have this as a key part of the education process to involve all members of society from a young age.

2) Who should do it?

This should be done by government when setting school curriculums, and should involve both experts in the field and members of the general public to pull together a curriculum that is both fact-based and relevant.

3) Who should hear this message?

This message should be heard by governments to start processes to put an informed and relevant school curriculum in place.