SATORI Deliverable D2.1
Report (handbook) of participatory processes

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ABSTRACT

This deliverable comprises a handbook on participatory processes (Section I) and empirical insights into the landscape of existing Mutual Mobilisation and Learning (MML) projects, ethics-related related projects and other initiatives regarding their incorporation of and/or interaction with other stakeholders (Section II). The handbook outlines guidelines for establishing a participatory approach with a particular focus on criteria for selecting appropriate participatory techniques. Section II of the deliverable provides added value to the handbook by offering empirical insights into experiences with and plans for participatory processes for MML projects, ethics-related projects and other innovation- related activities.

EXECUTIVE SUMMARY

This deliverable comprises a handbook on participatory processes (Section I) and empirical insights into the landscape of existing Mutual Mobilisation and Learning (MML) projects, ethics-related projects and other initiatives regarding their incorporation of and/or interaction with other stakeholders (Section II). Both the preparation of the handbook and the empirical study were carried out as part of work on Task 2.1 'Landscape of existing MML projects and other relevant, ethics-related projects'.

SECTION I: PARTICIPATORY APPROACHES HANDBOOK

The short handbook outlines guidelines for establishing a participatory approach based on information gleaned from handbooks and scholarly references on planning, implementing and evaluating participatory approaches. The handbook centres primarily on criteria for selecting appropriate participatory techniques but also devotes some space to the issues of design, implementation and evaluation.

Participation: background

Participatory approaches include a variety of approaches that bring together various stakeholders (e.g., public actors, civil society stakeholders and/or individual citizens) to participate in some stage of a decision-making process.Specific objectives of participatory activity include improved governance, social cohesion and social justice, enhanced quality of services and capacity building and learning.

Criteria for the selection of appropriate participatory techniques

There has been a flourishing of participatory approaches or techniques and efforts have been made to set out criteria according to which the best participatory approach for the issue at hand may be selected. These criteria range from levels of involvement to the effect of stakeholder participation and issues of the availability of resources.
Defining the purpose of the participatory event is an important first step as this establishes the nature of the audience, structure of the event and the manner in which it is evaluated. *Topics* addressed in participatory events vary according to knowledge (the degree to which society has general knowledge of the topic or subject); maturity (the degree to which opinions on the subject have matured even up to having legislation on the subject); complexity (the level of complexity of the topic and the required level of associated technical information); and controversy (the degree of controversy and/or polarised views around the topic). *Participants*

will vary according to the issue and the scope, budget and timing of the project should be kept in mind when deciding on the numbers and geographic spread of participants. Participatory approaches do not claim to be fully *representative* - rather, such approaches lead to considered advice from a group of the public which provides strong indications as to how the public at large feels about certain issues. *Outcomes* refer to the desired end result of the participatory approach and can range from agreement on the purpose and direction of a project or programme to capacity building. "Primary" outcomes refer to essential end results such as policy change, while "secondary" outcomes" are added outcomes, such as enhancing the understanding among participants or organisers. The public may be *involved in public participation at a number of levels*, ranging from a low level of public involvement such as information provision to a high level of public involvement in which participants engage in deliberation over extended periods of interaction, discussion and debate. It is the latter level of public involvement that is highlighted in this deliverable. The *level of stakeholder involvement* should be decided upon and clarified during the preparation phase of the participatory event and communicated to participants. *Context* is important to take into account in assessing whether a participatory approach is "fit for purpose" in the sense that it fits the engagement situation and the broader institutional, political, cultural and environmental contexts. The *anticipated effects* of a participatory approach comprise another means of selecting appropriate participatory techniques. Substantive effects include those effects visible in the quality of the results of a decision-making process as measured against different criteria including environmental, economic, technological or social criteria. Procedural effects include, for example, improved information use, enhanced legitimacy of the process and improved conflict management. Contextual effects do not relate directly to the issue in question but refer to those effects related to the social context within which the participatory event takes place. Contextual effects include increased information on the part of stakeholders, modification in traditional power relations and increased confidence of actors in institutions, to name just a few effects.
In establishing criteria for technique selection, it is important that each organisation matches participatory techniques to the needs and constraints of the organisation, in addition to the desired effects and goals of the process itself.

Design of a participatory approach

Regarding the *design of a participatory method* itself, key success factors include a detailed project plan, a risk assessment of the potential costs (social, financial, political, etc.) associated with the participatory approach, the provision of relevant and clear information to participants and the use of suitable venues.

Delivery and implementation

Important factors in the *delivery and implementation* of a participatory approach include capacity-building of the public, experts and policy-makers so as to enable effective participation; clear briefing materials for participants; an experienced expert to facilitate the process (facilitator) and the production of outputs (e.g., reports) which can be easily understood by participants, policy-makers, the scientific community and the wider public.

Evaluation

Evaluation of a participatory approach involves an investigation by organisers and third parties regarding whether the objectives of the event were fulfilled and how well this was achieved. Evaluation should begin as early as possible and continue throughout the process.

SECTION II: LANDSCAPE OF EXISTING MML PROJECTS AND ETHICS-RELATED PROJECTS

The aim of the empirical study was to learn from the experience gained in other MMLs, ethics-related projects and innovation activities specifically with regard to their incorporation of and/or interaction with different stakeholders. This enabled a comparison of the processes between the running MMLs and contributed to the identification of what has worked well and what has not, along with the ultimate objective of finding mutually acceptable solutions in workable participatory processes.

Recommendations for workable participatory processes have been developed through an analysis of the findings concerning participatory processes in the different projects. The first set of recommendations set out first-hand good practice advice for the design, implementation and evaluation of participatory processes. The second set of recommendations reflect specific advice/recommendations for the SATORI project on the basis of respondents' general experience with participatory processes and more specific experiences with ethics-related projects and issues.

Findings from interviews: good practice advice

Preparation

- It is important to be *clear about the particular notion of participation being worked with*. Participation should not be limited – as it often is – to consultation. Participation should be understood more broadly and stakeholders should contribute to co-constructing the targets of research and be involved in strategy-setting and decision-making.
- The *goals of a participatory process should be clear* from the outset. Think the participatory process through thoroughly according to the objectives of the project.
- Projects with many partners at European level require a *high degree of preparation*. It is important to plan well in advance and to have sufficient time to test the methodology.
- It is important to know *the environment* in which you are carrying out a participatory exercise – different countries will have different conditions and perspectives.
- *Defining stakeholders and target groups* is a challenge – it is often easy to reach the "usual suspects" but more difficult to open up to more general publics. End-users tend to be overlooked.
- *Selecting the participatory process/approach* involves some level of compromise. For example, using webcasting as a participatory technique may lead to the loss of some industry stakeholders who do not want to have their contributions broadcast and on record. A lack of resources may mean that face-to-face meetings and workshops are not possible, thus necessitating interactions online which, in turn, have their own limitations. For example, online discussion through the medium of online dialogue tools suffers from delayed responses and a lack of face-to-face interaction. Thus each

participatory process will have positive aspects and limitations and a trade-off will have to be made depending on the objectives of the exercise. It is important to be clear about what you want, e.g. public participation versus the involvement of other key stakeholders. Moreover, there are different levels of engagement and no one glove will fit.

- The *complexity of the topic* - if it is new and the public does not have knowledge of it - necessitates the creation of awareness and accessibility of activities to various publics.

Design

- It is important to *motivate and enable stakeholders to participate* without perpetuating a rationalistic or paternalistic approach. A bottom-up approach enables stakeholders to co-define the goals of the project and facilitates their involvement in decision-making. *Stakeholders should be involved in the design* of participatory processes so as to facilitate their being fit-for-purpose.
- Organisers should not have a fixed idea of how the process/approach should work – they should be *open to stakeholders' input* and *sensitive to situation-specific dynamics* as they develop.
- Projects should not only consult stakeholders at the beginning of a project but find ways in which to *engage stakeholders throughout the duration of the project* and further development.
- Stakeholders should be informed from the outset as to the *kind of impact* they can expect as a result of their participation. In addition, the nature of the impact should be communicated to them after the participatory process has concluded.
- *Clarity about what will be done with results* is crucial. Participants want feedback on their contributions, namely with respect to the manner in which their contributions are taken up in further work. The results of engagement exercises must be used and the impact of contributions should be demonstrated. It is also vitally important to have a transparent process in which an explanation of the method is provided and documents are made publically available.
- Experience has shown that *dynamics differ in different groups* and organisers should not be "afraid" of this.
- *Representativeness* is a challenge. The aim is not to be representative of society as a whole but to ensure that there is variety in the profile of societal stakeholders.
- It is important to *identify the motivations of stakeholders to be engaged* in order to elicit and retain their interest. However, in engaging stakeholders it is important to be careful about their expectations and to think about how to generate added value as a result of their participation.
- *Buy-in of participants* in the participatory process is crucial.

Implementation

- Having *a good facilitator* is crucial to the hosting of a good event which is seen by stakeholders as having some legitimacy. Moreover, the facilitator should be well-versed in the methodology and should provide all involved with an opportunity to speak. The facilitator should be able to deal with both the technical and social aspects of engagements. Science journalists, science communicators and science museum guides function well in this role given their expertise in translating science and in managing opinions from a neutral perspective.

- It is important to *find a balance between the structure of the participatory process and openness*. It can be challenging to avoid a typical academic debate and open up the discussion to views from different fields of practice.
- It is important *not to underestimate the tacit knowledge* and experience of lay people.
- It is important to have some kind of *incentive* for people to participate. While financial incentives are not encouraged by the European Commission, organisers of engagement events can try to compensate by ensuring a very nice location for the exercise, in addition to good food, etc.
- When working with vulnerable populations, it is important that others do not take the limelight. Involve those people who do not normally participate in such processes such that they have a good degree of agency in the process. Partnerships with groups in developing countries should take place on an equal footing.

Feedback and follow-up

- *It is crucial to follow up with participants* by developing a short report on exercise outcomes or by having local institutions keep in touch with them at the local level.
- Following the participatory event, organisers should analyse the *outcomes* of the process and reflect on the implications of the outcomes for the further "direction" of the project.
- Participatory processes done well have great potential. At the same time, participatory processes can be misused. Third party evaluation of the outcomes of the participatory processes should take place.
- The PERARES consortium has developed evaluation guidelines, i.e., a toolbox with four sets of evaluation tools. A major motivation for developing the guidelines is the frequently "sloppy approach" to evaluation on the part of science shop and public engagement people. They have developed four sets of questionnaires that can be used in order to make it easier and to encourage own partners to use them. The toolbox includes the following:
    - First form on having just established a partnership: expectations management, are the roles clear, is the research question clear for everyone, etc.
    - Mid-term evaluation during the project
    - Evaluation output
    - Evaluation impact of the project a year to a year and a half following completion of the project. This is mostly done on an informal basis in science shops but can also be done historically (e.g. on the occasion of an anniversary). Important to have good examples of impact for university support both regarding public engagement with research and research engagement with society.

Other issues

- It is *difficult to detect the direct influence of participatory activities* on the policy-making process.
- *Academic relevance* is an important issue. Researchers want publications while other project partners/participants may prefer to have results that have an impact.
- *Difficulties in language and communication* between backgrounds and disciplines is a challenge.

Recommendations for the SATORI project

- It is crucial to have a clear idea as to why stakeholders should be involved. In this regard, the following issues should be considered: why should someone - a stakeholder - join a project, what is their role in it, what kind of collaboration can they offer, etc.?
- It is important to think about how to motivate people to participate: some participants are limited by resources (time and financial), while others do not feel that ethical issues/problems are relevant to their practice.
- A number of interviewees identified media representatives as key stakeholders but did not know how to involve them. Furthermore, media representatives are viewed as a category with its own agenda that is not always as clear as that of science or industry representatives. One of the interviewees stated that this is because media representatives have never been considered as independent stakeholders but only as a "passive node" along the transmission chain of knowledge.
- There are different aspects to mutual learning and it is important to understand the different elements involved.
- One project co-ordinator stressed the importance of assuring participants that their voices will be heard, in addition to emphasising the importance of openness and transparency. Moreover, organisers of participatory processes should promise to collect empirical data in as correct a fashion as possible. Finally, with regard to substantial issues of public engagement in research, the coordinator reported that people (stakeholders) do not know who is making the decisions regarding research, what is being researched, etc. Moreover, citizens know that they are not really being heard. Citizens also are critical of the lack of transparency and openness in research programming.
- As regards recommendations for the development of the ethical framework in SATORI, one respondent stressed that "there is no single ethics".
- The EST-FRAME project has shown that there is insufficient dialogue between different assessment domains (impact, risk, technology, ethical, economic, foresight assessment). This is especially important in cases of controversial and contested issues regarding new technologies where routine assessment practices are insufficient and a broader reflection and flexibility is required. Different types of experts challenge each other in interesting ways which enables a more innovative way of understanding the problems within a technology field.
- One project respondent observed that there is a gap to be bridged between ethical discussions in technology and in humanities. Definitions, guidelines and codes of conduct are not enough – there is a need for a critical theory of ethics in technology, based on a philosophically sound approach.
- It is important to decide on what should come out of the SATORI project, e.g. is the ethics assessment framework going to be something that the Commission will implement? If so, this aim needs to be communicated to stakeholders regarding their role in the process.
- One respondent stressed that the benefits of research need to be distributed more fairly. Specifically, there is a need for a greater balance between industry and citizens in EU-funded research. People are not informed as to what it means to do research for civil society – they have the idea that it is bad science or that it does not lead to anything, while it leads to much social innovation and well-being, along with good research and results.

- Efforts should be made to facilitate better coverage of the interplay of values / value-sets regarding questions around science and technology (S&T) within European countries, aiming at improved representation of cultural and societal variety within Europe. Qualitative research on values in relation to S&T should be conducted on a wider scale within the European community. Research should aim to elucidate value diversity, ambiguity and complexity in the cultural landscape of Europe.
- Implicit and explicit value judgments in European S&T governance should be made transparent such that the main driving forces of political decisions are accessible to open dialogue.

INTRODUCTION

This deliverable offers guidance to a general readership of people considering participation approaches. The deliverable comprises two sections. The first section is a short handbook outlining guidelines for establishing a participatory approach. The guidelines are based on information gleaned from handbooks and scholarly references on planning, implementing and evaluating participatory approaches. This short guide centres primarily on criteria for selecting appropriate participatory techniques but also devotes some space to the issues of design, implementation and evaluation. The handbook is structured as follows. Section 1 sets out the background to participatory approaches, including the rationale for participation and the conditions under which a participatory approach is appropriate. Section 2 describes criteria that can be used in the selection of participatory approaches. Section 3 offers a select overview of techniques that facilitate a high level of stakeholder involvement. Section 4 sets out guidelines for the design of the participatory approach, while section 5 elaborates on the delivery/implementation of a participatory approach. Finally, section 6 offers considerations for the evaluation of a participatory event.

The second section of this deliverable adds value to the handbook by offering empirical insights into approaches to and experiences with participatory approaches in existing Mutual Learning and Mobilisation (MML) Action Plan projects and other relevant ethics-related projects and innovation initiatives. These insights were gained in the course of carrying out empirical research on Task 2.1 in Work Package 2 on Dialogue and participation. The aim of Task 2.1 was to identify existing MML projects, other ethics-related projects, big innovation initiatives (EIPs) and joint partnerships (JPIs) with a view to understanding their incorporation of and/or interaction with different stakeholders. The outcome of this task is a list of MML and other relevant projects detailing their findings regarding participatory processes, along with an evaluation of what has worked well and what has not. The second section is structured as follows. Section 1 sets out the objectives of the empirical study. Section 2 provides a description of the methods of data collection and analysis. Section 3 provides an overview of the MML projects and other projects surveyed, their participatory goals and mechanisms and experiences and findings regarding participatory processes. Section 4 sets out recommendations for workable participatory processes based on an analysis of the findings concerning participatory processes in the different projects. In addition, section 4 focuses in on MML projects in particular, offering a list of unique features of the projects and views on the meaning of "mutual learning and mobilisation". Section 5 offers a brief conclusion as to the importance of well-organised and implemented participatory approaches for the societal challenge of ethics assessment.

SECTION I: PARTICIPATORY APPROACHES HANDBOOK

1 PARTICIPATORY APPROACHES AND BACKGROUND

Participatory approaches are "institutional settings in which members of the public and/or stakeholders of different types are brought together to participate more or less directly, and more or less formally, in some stage of a decision-making process".[1] Stakeholders vary if they hold different world views regarding a particular issue and act on the basis of different rationales.[2] Participatory approaches include traditional processes of democratic institutions, in addition to a variety of processes that bring together public actors, civil society stakeholders (such as business actors, NGOs, trade unions, consumer groups, scientists, etc.) and/or individual citizens. [3] In the United Kingdom, for example, the trend for public participation is visible in both national and local government domains ranging from transport planning to the environment and health care. [4] Participatory approaches and activities can also be carried out on specific science and technology-related issues and might centre on formulating and elaborating policy and research agendas, bringing together various publics and stakeholders for discussion and deliberation. [5]

In the European Union (EU), participation is recognised as a central element of governance. The White Paper on Governance sets out participation as one of the five "principles of good governance", in addition to openness, accountability, effectiveness and coherence.[6] Participatory approaches have played an increasing role since the mid-1990s, for example, in the EU's consumer and agricultural policies and in the research strategies of the sixth and seventh framework programmes. Regarding the latter, the Science in Society (SiS) initiative – introduced in FP7 (2006-2013) – was designed to encourage a more meaningful engagement of citizens and civil society in research and research based policies.[7] The introduction of the Mutual Learning and Mobilisation instrument in the SiS 2009 work programme was a key initiative in this regard. [8] Mutual Mobilisation and Learning Action Plans (MMLs) – of which SATORI is one – are designed to bring together actors from research and the wider community (e.g., civil society organisations, ministries, policy-makers, science festivals and the media) to collaborate on action plans that will connect research activities for a chosen societal challenge. [9]

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[1] Van den Hove, Sybille, "Participatory approaches for environmental governance", in OECD/NEA, Stakeholder involvement tools: Criteria for choice and evaluation. Proceedings of a Topical Session at the 4th meeting of the NEA Forum on Stakeholder Confidence. Paris: OECD, 2003, https://www.oecd-nea.org/rwm/docs/2003/rwm-fsc2003-10.pdf

[2] Ibid.

[3] Ibid.

[4] Rowe, Gene, and Lynn J. Frewer, "A Typology of Public Engagement Mechanisms", *Science, Technology & Human Values*, Vol. 30, No. 2, Spring, 2005, pp. 251-290 [p. 251].

[5] Sciencewise-Expert Resource Centre, *The Government's Approach to Public Dialogue on Science and Technology*, Department for Business Innovation and Skills, September 2013, http://www.sciencewise-erc.org.uk/cms/assets/Uploads/Project-files/Sciencewise-ERC-Guiding-Principles.pdf

[6] European Commission, Communication from the Commission of 25 July 2001, European governance – A white paper, COM (2001) 428 final, Brussels, 12.10.2001. http://europa.eu/legislation_summaries/institutional_affairs/decisionmaking_process/l10109_en.htm

[7] Healy, Hali, "Mobilisation and Mutual Learning (MML) Action Plans: Future Developments, Workshop - 17-18 April 2012", European Commission - DG Research and Innovation, 2012.

[8] Ibid.

[9] http://ec.europa.eu/research/science-society/index.cfm?fuseaction=public.topic&id=1226

The SATORI project will include a wide range of stakeholders in the challenge of developing a common ethics assessment framework for research and innovation in Europe. The framework of common basic ethical principles and joint approaches and practices should be supported and shared by all the main actors involved in the design and application of research ethics standards and principles. These actors include scientists, regulators, civil society, industrial actors, public bodies, research ethics committees in the Member States, relevant international bodies and other stakeholders in society, including the public. The consortium will stimulate collective reflection and deliberations among stakeholders involved in the design and application of research ethics standards and principles in order to tackle ethical challenges in ways that match up with the values, interests and needs of a wide range of stakeholders in society.

1.1 RATIONALE FOR PARTICIPATION

Motivations for seeking public participation vary.[10] In some cases, experts put forward a *normative justification,* i.e., the belief that citizens who will be affected by decisions have the right to participate in these decisions, particularly when their tax contributions fund the research.[11] In other cases, the justification is more *instrumental* in nature, that is, there is a desire to reduce conflict, to help (re)build trust and smooth the way for new innovations.[12] *Substantive justifications* "reflect the assumption that such participation from people who will use and/or be affected by a technology will raise questions about the real life functioning of developments when they leave the laboratory, perhaps leading to innovations that perform better in complex real-world conditions, or that may be more socially, economically and environmentally viable". [13]

Involve have identified specific objectives of participatory activity[14] including the following:

- Governance – e.g., strengthening democratic legitimacy, accountability, stimulating active citizenship
- Social cohesion and social justice – e.g., building relationships, ownership and social capital, equity and empowerment
- Improved quality of services – more efficient and better services, especially public services, that meet real needs and reflect community values
- Capacity building and learning – for individuals and organisations, to provide a basis for future growth and development and, especially, to help build stronger communities.

[10] Stirling, Andy, "'Opening Up' and 'Closing Down Power, Participation and Pluralism in the Social Appraisal of Technology", *Science Technology & Human Values*, Vol. 33, No. 2, March 2008, pp. 262-294.
Fiorino, D, "Citizen participation and environmental risk: a survey of institutional Mechanisms", S*cience, Technology and Human Values*, Vol. 15, 1990, pp. 226–43.
[11] Marris, Claire, and Nikolas Rose, "Open Engagement: Exploring Public Particpation in the Biosciences", PLoS Biol., Vol. 8, No.11, 2010, e1000549. doi:10.1371/journal.
[12] Ibid.
[13] Ibid.
[14] Involve 2005, People & Participation: How to put citizens at the heart of decision-making, http://www.involve.org.uk/wp-content/uploads/2011/03/People-and-Participation.pdf

1.2 WHEN IS A PARTICIPATORY APPROACH APPROPRIATE?

A participatory approach is particularly appropriate for the following[15]:

- Development and implementation of legislation and regulations
- Development of policies, new statutes and new programmes
- Preparation of business plans
- Issues with social, economic, ethical or cultural implications
- Sharing or disseminating information
- Resolving questions that revolve around conflicting values.

In particular, participatory approaches have been embraced and rapidly developed in the field of environmental policy-making as a means of tackling the challenges of uncertainty, complexity, irreversibility, social complexity and conflicts of interest and diffuse responsibilities and impacts, to name just some of the issues.[16]

2 CRITERIA FOR THE SELECTION OF PARTICIPATORY APPROACHES

2.1 INTRODUCTION

Along with the increased drive for public participation, there has been a flourishing of participatory approaches or techniques. However, the existence of a variety of mechanisms has also led to uncertainty as to how participation can best be enacted: this is because "involvement as widely understood (and imprecisely defined) can take many forms, in many different situations (contexts), with many different types of participants, requirements, and aims (and so on) for which these different mechanisms may be required to maximise effectiveness (however this is defined)".[17] Notwithstanding these challenges, efforts have been made to set out a number of criteria according to which the best participatory process for the issue at hand may be selected. These criteria range from levels of involvement to the effect of stakeholder participation and issues of the availability of resources.

2.1.1 Objectives

The first step in organising any event or activity should be defining the purpose of the event, as this sets the nature of the audience, the structure of the event and the manner in which it is evaluated.[18] When setting objectives, organisers should focus on things that matter and try to include items that are important to measure.[19] The twin risks are setting objectives that organisers believe are important but against which it is not possible to measure success and setting objectives because they are measurable but of little importance.[20]

In setting the objectives, organisers should ask themselves the following: [21]

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[15] Health Canada, *Health Canada Policy Toolkit for Public Involvement in Decision Making*, Minister of Public Works and Government Services Canada, 2000, http://www.hc-sc.gc.ca/ahc-asc/pubs/_public-consult/2000decision/index-eng.php

[16] Van den Hove, op. cit., 2003, p. 19.

[17] Rowe and Frewer, op. cit., 2005, p. 252.

[18] Research Councils UK, *Dialogue with the public: Practical guidelines*, August 2002, http://www.rcuk.ac.uk/RCUK-prod/assets/documents/scisoc/dialogue.pdf.

[19] Ibid.

[20] Ibid.

[21] Ibid.

- What is the purpose of the event?
- Have you clear and measurable objectives?
- Have you agreed these objectives with partners and or funders?
- Have you identified desirable outcomes and established how you will measure these?

2.1.2 Topic

The topic refers to the subject matter to be addressed during the participatory event with respect to four aspects:[22]

- Knowledge: to what extent do various publics possess general knowledge of the subject/topic?
- Maturity: to what extent have various publics already developed opinions or even legislation on the subject?
- Complexity: is the subject highly complex, such that a great deal of (technical) information is required?
- Controversy: is the issue highly controversial and has the debate become polarised to the extent that consensus is difficult to reach?

2.1.3 Participants

The relevant "public" will vary with the issue, as the interest and capacity of various groups to contribute to a participatory approach will depend upon the topic at hand.[23] Furthermore, the (geographic) scope, budget and timing of the project should be taken into consideration in order to decide the numbers and geographic distribution of the participants.[24]

Key questions[25]:

- Who will be affected by the issue?
- Who may be potentially affected in the future?
- Who can contribute to a solution that will meet the needs of the widest range of stakeholders and publics?
- Who will insist on being involved and cannot be excluded?
- Should politicians be involved?
- Which segments of the public should be involved: individuals, consumers, specific demographic groups such as youth or older adults, marginalised, hard-to-reach populations, industry associations and individual industries, scientific, professional, educational or voluntary associations, local communities, etc.?

Organisers of a participatory process or event should think very specifically about the different publics involved in an issue and when best to involve them.[26] This entails focussing on the nature of different audiences and what different audiences can and want to contribute.

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[22] King Baudouin Foundation and the Flemish Institute for Science and Technology Assessment, *Participatory methods toolkit: A practitioner's manual*, December 2003, http://archive.unu.edu/hq/library/Collection/PDF_files/CRIS/PMT.pdf
[23] Ibid.
[24] Ibid.
[25] Health Canada, op. cit., 2000.
[26] Ibid.

Sceptics and vested interests should also be included while being mindful of the potentially disruptive role of sceptics and avoiding giving vested interests undue advantage.[27]
It is also important to consider and discuss with participants what they want to get out of the process and what might prevent them from participating.[28] Clarification of everyone's motivations from the outset will facilitate lower levels of confusion and greater satisfaction with the outcomes. This is particularly important in an area that is suffering from consultation fatigue.

Public dialogue and/or participatory approaches do not claim to be fully representative. Rather, participatory approaches lead to considered advice from a group of the public – following adequate information, discussion, access to specialists and time to deliberate – which provides strong indications of how the public at large feels about certain issues.[29] The methodology and results need to be sufficiently robust to provide credible results and give policy-makers a good basis on which to make policy.[30]

2.1.4 Outcomes

Outcomes concern the clear statement of precisely what is sought from the process.[31] Possible outcomes might include improved personal and/or working relationships, agreement on the purpose and direction of a project or programme, or new policy, capacity building (learning and organisational) and behaviour change, to name just a few items.[32] Different participatory techniques are designed to produce different types of outcome, thus identifying the desired outcome helps to identify the most appropriate method.[33] It is useful to differentiate between "primary" (essential) and "secondary" (nice to have) outcomes, e.g., a primary outcome may be policy change while a secondary outcome could be improved understanding among participants, or vice versa.[34]

2.2 LEVELS OF STAKEHOLDER PARTICIPATION

Many scholars involved in public participation have observed that the public may be involved at different levels. Sherry Arnstein's ladder of participation[35] – published in 1969 – is the most well-known articulation of participation in terms of the extent of citizens' power in determining a plan and/or programme. Arnstein's ladder of participation sets out significant gradations of citizen power, ranging from levels of "non-participation" (including information provision) through levels of "tokenism" (including consultation) to "citizen control" in influencing proposals and decisions.[36] Thus, there is a public involvement continuum, ranging from a low level of public involvement or influence to a high level of public involvement or

[27] Ibid.
[28] Involve, op. cit., 2005.
[29] Sciencewise, op. cit., 2013.
[30] Ibid.
[31] Involve, op. cit., 2005.
[32] Ibid.
[33] Ibid.
[34] Ibid.
[35] Arnstein, Sherry, R., "A Ladder of Citizen Participation", *Journal of the American Institute of Planners*, Vol. 35, No. 4, 1969, pp. 216-224.
[36] Ibid, p. 217.

influence.[37] However, it is the category of "citizen control" that most commentators consider as proper participation in which participants engage in deliberation over extended periods of interaction, discussion and debate. [38] Indeed, this high level of stakeholder engagement is highlighted in this handbook (cf. section 3).

The level of stakeholder involvement should be clarified during the preparation phase of any public involvement initiative and communicated to participants. In order to decide on the appropriate level of engagement, organisers should be explicit about the purpose of the stakeholder involvement initiative.[39]

The table below offers guidance on selecting the appropriate level of public involvement.[40]

Table 1: Guidance on selecting the appropriate level of public involvement

Level 1: Inform/Educate when	Factual information is required to describe a policy, programme or process; a decision has already been made passive voice again; who has decided? (no decision is required); the public needs to know the results of a process; there is no opportunity to influence the final outcome; there is a need for acceptance of a proposal or decision before a decision may be made; an emergency or crisis requires immediate action; information is necessary to abate concerns or prepare for involvement; the issue is relatively simple.
Level 2: Gather information and views when	The aim is primarily to listen and gather information; policy decisions are still being shaped and discretion is required; there may not be a firm commitment to do anything with the views collected – expectations management is important in such a case.
Level 3: Discuss or involve when	Two-way information exchange is needed; individuals and groups have an interest in the issue and will likely be affected by the outcome; there is an opportunity to influence the final outcome; the organiser wants to encourage discussion among and with stakeholders; input may shape policy directions/programme delivery.
Level 4: Engage when	It is necessary to have citizens talk to each other regarding complex, value-laden issues;

[37] Organisation for Economic Co-operation and Development/Nuclear Energy Agency Radioactive Waste Management Committee, Forum on Stakeholder Confidence (FSC), "Stakeholder Involvement Techniques: Short Guide and Annotated Bibliography", 06-Jul-2004, https://www.oecd-nea.org/rwm/reports/2004/nea5418-stakeholder.pdf

[38] Chilvers, Jason, "Deliberative and Participatory Approaches in Environmental Geography", in Noel Castree, David Demeritt, Diana Liverman and Bruce Rhoads (eds.), *A Companion to Environmental Geography*, Blackwell Publishing Ltd., Chichester, United Kingdom, 2009, pp. 400-417 [p. 401].

[39] Health Canada, op. cit., 2000.

[40] Based on Health Canada [6] and OECD [11] reports.

	there is a capacity for citizens to shape policies and decisions that affect them; there is opportunity for shared agenda setting and open time frames for deliberation on issues; options generated together will be respected.
Level 5: Partner when	Organisers/institutions want to empower citizens and groups to manage the process; citizens and groups have accepted the challenge of developing solutions themselves; institutions are ready to assume the role of enabler; an agreement has been made to implement citizens and groups.

2.3 IMPORTANCE OF CONTEXT IN ASSESSING FITNESS-FOR-PURPOSE

A key issue concerning participatory approaches concerns whether understandings and actions developed through them are context-dependent (i.e., always different in different fora) or contain elements that are stable and generalisable across contexts. [41] For example, focus group based research on environmental and scientific citizenship has arrived at similar conclusions in different contexts (e.g., regarding the importance of public trust in institutions). [42] On the other hand, experiences in transferring the consensus conference model to other national contexts such as Austria or France have highlighted that assumptions regarding the relation between science, the public and the policy sphere implicit in the standardised version of the design may not apply in all European countries. [43] There is thus increasing acknowledgement that the design of participatory approaches – the who, what and how of participation – should be 'fit-for-purpose' as regards "the immediate engagement situation and wider institutional, political, cultural and environmental contexts". [44]

Burgess and Chilvers[45] have set out a contextual framework for the design and evaluation of public and stakeholder engagement processes that are "fit-for-purpose" as regards the immediate engagement situation and wider contexts.

[41] Chilvers,op. cit., 2009, p. 406
[42] Ibid.
[43] Felt, Ulrike, and Maximillian Fochler, "The Bottom-up Meanings of the Concept of Public Participation in Science and Technology", *Science and Public Policy*, Vol. 35, No. 7, 2008, pp. 489-499 [p. 493].
[44] Chilvers, op. cit., 2009, p. 406
[45] Burgess, Jacqueline and Jason Chilvers, "Upping the ante: a conceptual framework for designing and evaluating participatory technology assessments", *Science and Public Policy*, Vol. 33, No. 10, December 2006, pp. 713-728.

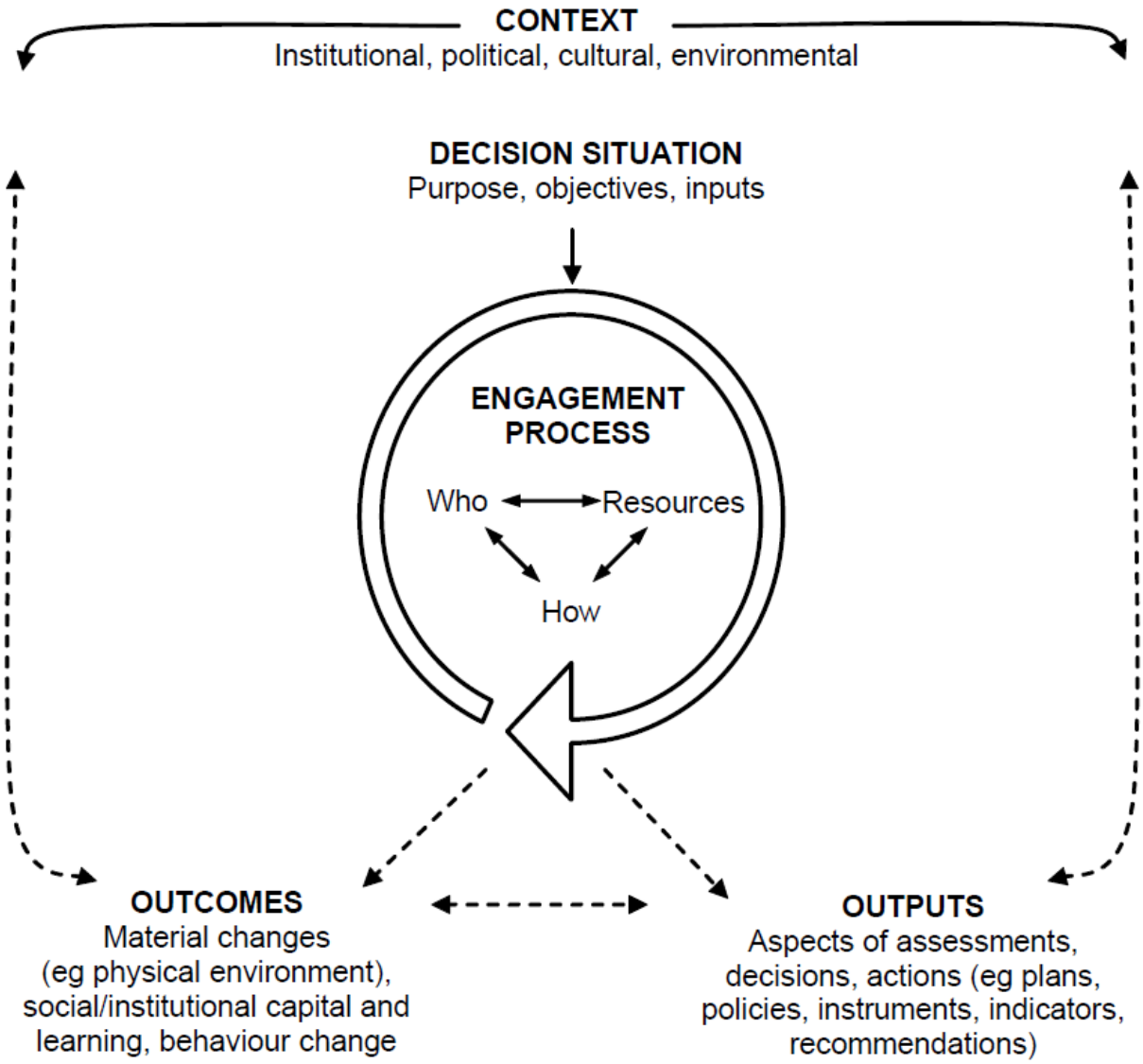

Figure 1: A contextual model of participatory processes design and evaluation (taken from Burgess and Chilvers, 2006, p. 716).

As regards designing processes that are fit-for-purpose, figure 1 demonstrates that analysis of the "decision situation" and its context frames questions about who should be involved in an engagement process (specialists, stakeholders, publics), the manner in which they should be involved through appropriate participatory methods and the level of resources (time, money, expertise) required to do this. [46] Iterative negotiation among these elements "determines the nature of participation as a process evolves, although resources are often subject to institutional and structural constraints". [47] Furthermore, a participatory process leads to a series of outputs and outcomes which are influenced by, and in turn influence, aspects of context (as shown by the two-way dashed arrows). [48]

[46] Ibid, p. 715.
[47] Ibid.
[48] Chilvers, op. cit., 2009, p. 407.

2.4 EXPECTED EFFECTS OF PARTICIPATORY APPROACHES

Another means of selecting appropriate participatory approaches for a given purpose involves reflecting on their anticipated effects and how they relate to different dimensions of the decision-making process. [49] van den Hove has identified three broad categories of effects, namely substantive, procedural and contextual effects. *Substantive effects* relate to the quality of the results of a decision-making process, as gauged against different criteria including environmental, economic, technological or social criteria. Thus "a participatory approach can enhance the substantive quality of decisions by leading to choices that are more pertinent from an environmental point of view or from an economic point of view. It may also lead to choices which are more pertinent from the technological point of view, or to choices which are socially more acceptable than choices emerging from a non-participatory top down decision process for instance". [50] The implementation of participatory approaches can also affect the decision process itself. These *procedural effects* include improvement of the quality of the informational basis of decision processes, improved information use, construction of a more open domain of choice for the decision, more dynamic processes, better conflict management, increased legitimacy of the decision process, improved cost-and time-effectiveness of the process and the possibility for less organised interests to increase their power of influence. [51] *Contextual effects* refer to those effects that are not directly related to the issue at hand but apply to the social context and information systems in which the decision-making process occurs. Contextual effects include increased information of stakeholders and/or the public, improvement of the strategic capacity of decision-makers, changes in the perception and conceptualisation of the social context, modification in traditional power relations and conflicts, reinforcement of democratic practices and citizens' involvement in public domains and increased confidence of actors in institutions.
Jolibert and Wesselink[52] have adapted this typology to describe the effects of participatory approaches on different aspects of the research process. Thus they name procedural, contextual and substantive effects as the impacts of stakeholder engagement in research on policy, society and science, respectively.

2.5 ESTABLISHING CRITERIA FOR TECHNIQUE SELECTION

All of the above comprise criteria that can be used to select an appropriate participatory technique. Each organisation (and each target set of stakeholders) has specific constraints. [53] Thus it is important to match the stakeholder involvement techniques to needs, constraints and desired effects and goals. [54] In order to do this, the organisation should develop selection criteria, discuss the criteria and rank the criteria by order of importance. [55] Multiple

[49] Van den Hove, Sybille, "Participatory approaches to environmental policy-making: the European Commission Climate Policy Process as a case study", *Ecological Economics*, Vol. 33, 2000, pp. 457-472 [p. 463].
[50] Van den Hove, op. cit., 2003
[51] Ibid.
[52] Jolibert, Catherline and Anna Wesselink, "Research impacts and impact on research in biodiversity conservation: The influence of stakeholder engagement", *Environmental Science & Policy*, Vol. 22, October 2012, pp. 100-111 [p. 102].
[53] Organisation for Economic Co-operation and Development/Nuclear Energy Agency Radioactive Waste Management Committee, Forum on Stakeholder Confidence (FSC), "Stakeholder Involvement Techniques: Short Guide and Annotated Bibliography", 06-Jul-2004, https://www.oecd-nea.org/rwm/reports/2004/nea5418-stakeholder.pdf
[54] Ibid.
[55] Ibid.

techniques and methods may be used where the objectives require it, including offline and online discussions. [56]

3 TECHNIQUES AND METHODS FOR PARTNERNING WITH AND ENGAGING STAKEHOLDERS: A SNAPSHOT PICTURE

In this section, we offer brief descriptions of techniques and methods which facilitate higher levels of stakeholder involvement.

Charrette Method[57]: The Charrette method involves organising people into several small groups. It is a useful method that can be used when the nature of the issue necessitates face _ to _ face interaction for stimulation and exchange of ideas. Moreover, the method can be used to collect practical ideas and to stimulate participants to cooperate in a collective environment in order to reach consensus and generate new thinking on a topic. In comparison to other methods, the Charrette method is time - intensive and enrolling people to participate can be a challenge.

Citizens' juries[58]: The citizens' jury method is an alternative and controversial method that requires randomly selected citizens to develop their knowledge of a specific policy area, pose questions and engage in debate with policy - makers and researchers in order to reach a final decision. It is often used alongside other research tools such as surveys, citizen panels, focus groups, interview based studies and participant observation. This method is useful in a variety of ways because it is impartial and objective. However, one of the major disadvantages of the method is that it fails to provide opportunities for communities to evaluate the process.

Citizens' panels[59]: A citizens' panel is a demographically representative group of citizens. This method offers an inexpensive and effective means of monitoring citizens' needs, assessing public preferences and collecting data that can be analysed for multiple purposes.

Consensus conference[60]: The consensus conference is a participatory method incorporating a citizen panel and aims to raise public awareness, involve the public in the policy making process and inform policy-makers and experts about the issues that citizens find important. This method can be used for issues with potential social impact and around which opinions diverge. Consensus conferences serve a variety of purposes including strengthening public debate, influencing policy - making and altering the balance of power. The method can fulfil different goals and objectives depending on the setting in which the tool is applied. Both the institutional setting of the consensus conference and the socio-historical context of the country in which the conference is organised play a crucial role.

Deliberative Polling[61]: Deliberative polling is a form of public education and is mainly used for issues about which the public have little knowledge or as a means of providing

[56] Sciencewise, op. cit., 2013.
[57] http://participedia.net/en/methods/charrette
[58] http://www.methods.manchester.ac.uk/events/whatis/citizensjuries.pdf
http://sru.soc.surrey.ac.uk/SRU37.html
[59] http://www.citizenshandbook.org/compareparticipation.pdf
[60] http://www.ivm.vu.nl/en/Images/PT3_tcm53-161508.pdf
http://estframe.net/ethical_bio_ta_tools_project/content_2/text_2c81d261-b7a8-43e8-8f1e-d724b43e2ba3/1346076808107/et4_manual_cc_binnenwerk_40p.pdf
[61] http://www.pgexchange.org/index.php?option=com_content&view=article&id=132&Itemid=121

information about crucial public issues. It begins with a random representative sample of the population and allows an opportunity to engage different stakeholders such as citizens, experts and policy makers in discussion of a specific topic. According to its practitioners, this method of public consultation measures what citizens would think if they had an adequate chance to reflect on the issue at hand.

Delphi Process[62]: The Delphi method is a method that is widely used in numerous scientific fields. It aims to achieve maximum consensus when a research problem requires teamwork and communication. It is mainly used when long term issues need to be evaluated as it allows experts to deal systematically with a complex problem or task. It provides a venue in which experts can share information that may not be directly available. A good selection procedure is key to the implementation of a successful Delphi as it is based on the opinions of experts and requires the involvement of people who will contribute valuable ideas.

Round Table method[63]: The round table method enables participants to make a full contribution to discussions on certain issues on an equal footing and to generate ideas through considering alternative aspects, seeking solutions and putting ideas into action. The method is useful as regards gaining insight into a topic and allows participants to express their views and opinions. A variety of opinions can flourish as a result of the heterogeneous mix of participants. One major disadvantage of this method is that it generates a wide range of opinions, while individual viewpoints are difficult to generalise and categorise.

Scenario Workshop[64]: The scenario workshop is a participatory method that combines the scenario and workshop methods in order to raise awareness and promote public interaction. The main advantage of this method is the opportunity to create new sources of knowledge around a local issue by combining research with social needs. This method aims to facilitate effective dialogue, facilitate discussions between different social groups in society and policy-makers, provide critique and generate ideas in order to address social and environment concerns. This method increases the chance of timely intervention and the control of present or foreseen problems. However, one of the limitations of this method is that participants focus on specific aspects of a certain sector without taking into account the social, economic and political consequences of the changes.

Search conference[65]:

A participative process that enables a large and diverse group of people (usually from 20 to 70) to discover values and projects they have in common and to collectively create a plan for the future. Rather than relying on information provided by experts, the search conference incorporates working sessions with a wide range of stakeholders who have knowledge, authority to act and a stake in the outcome, regardless of the status or attitudes of the stakeholders. The search conference works as a participative democracy in which all perceptions make up valid pieces of the puzzle and mutual understanding is achieved through

[62] http://www.unido.org/fileadmin/import/16959_DelphiMethod.pdf
http://web.iyte.edu.tr/~muratgunaydin/delphi.htm
[63] http://www.scottishhealthcouncil.org/patient__public_participation/participation_toolkit/round-table_workshops.aspx#.U8Wfp_l_vP0
[64] http://participedia.net/en/methods/scenario-workshop
[65] http://www.vaughanconsulting.com/searchconference.html
http://www.hc-sc.gc.ca/ahc-asc/alt_formats/pacrb-dgapcr/pdf/public-consult/2000decision-eng.pdf

sharing information. The focus is on future possibilities and how those involved can create a possible space for their implementation, so participants became a community of planners. This method can contribute to bridging the lines of culture, class, gender, power or status as each person participates as an individual *planner* rather than as a representative of their group).

Study circles[66]:

Five to 20 people meet together 3-5 times to discuss a specific topic (for more complex issues, meetings can be scheduled on a weekly or monthly basis)). Background material is provided before a new topic is introduced. A facilitator is involved to make sure discussion flows and ground rules are met, allowing for cooperative and mutual learning. At the end of the session, the group lists the most important outcomes of the discussion and describes any changes in their own views. This method is used to monitor and document the evolution of a group's thinking in regard to a particular issue and to generate recommendations based on a shared body of knowledge.

Sustainable community development[67]

Sustainable Community Development (SCD) aims to integrate economic, social and environmental objectives in the development of a community. SCD views a relationship between economic factors and other community elements such as housing, education, the natural environment, health, accessibility and the arts. SCD stresses the importance of striking a balance between environmental concerns and development objectives, while simultaneously enhancing local social relationships and promoting local control over development decisions as the primary means to achieve sustainability.

Think tanks[68]

Think tanks bring together creative thinkers to develop innovative solutions to current issues and problems. Most are organizations that perform research and advocacy in public policy (social policy, political strategy, economics, military, technology, and culture). Many are non-profit, funded by governments, advocacy groups, or businesses, or derive revenue from consulting or research work related to their projects: there is no single model and regional and national variations apply.

4 DESIGN

As regards the design of the participatory process, key success factors include the following:

- Organisers should agree a project plan that sets out details regarding timeline, budget, key dates and actions and methods.[69]

[66] http://www.hc-sc.gc.ca/ahc-asc/alt_formats/pacrb-dgapcr/pdf/public-consult/2000decision-eng.pdf
https://www.oecd-nea.org/rwm/docs/2004/rwm-fsc2004-7.pdf
[67] http://www.sfu.ca/cscd.html
http://aese.psu.edu/nercrd/community/tools/community-a-different-biography/legacy/sustainable-community-development-an-interactional-perspective
[68] http://www.hc-sc.gc.ca/ahc-asc/alt_formats/pacrb-dgapcr/pdf/public-consult/2000decision-eng.pdf
http://en.wikipedia.org/wiki/Think_tank
[69] Involve, op. cit., 2005.

- Carry out a risk assessment of the potential costs (e.g. social, financial, political, integrity of institutions) that are associated with implementing the public involvement initiative.[70]
- Make relevant, easily understandable information available to participants at an early stage and through a variety of means. [71]
- Suitable venues are required for any workshops or public meetings. Venues can be problematic as many buildings are not designed for more modern techniques while more suitable venues can lack gravitas or be too expensive. It is important to be aware of the various needs of the specific process and to ensure that the venue can meet them (e.g. access for people with disabilities). [72]

5 DELIVERY/IMPLEMENTATION[73]

- Ensure that policy-makers and experts promoting and/or participating in the participatory process are competent in their own areas of specialisation and/or in the techniques and requirements of dialogue. If necessary, put measures in place to facilitate capacity-building of the public, experts and policy-makers in order to enable effective participation.
- Have clear and specific objectives, which are clearly communicated to the participants. Have specific aims for each element of the process.
- Decide what briefing materials stakeholders will need to participate effectively. Language used in written documents must be user-friendly and jargon avoided where possible.
- Involve relevant stakeholders at appropriate times in the oversight of the participatory process/event, including in the production of materials to inform public participants.
- Ensure that no relevant participants are excluded from participating and implement special measures to access hard to reach groups where appropriate.
- Ensure that participants understand the policy development process and be clear on the role of participants.
- The participatory process/event should be conducted fairly with no-built in bias; non-confrontational, with no faction allowed to dominate; all participants treated respectfully; and all participants enabled to understand and question others' claims and knowledge.
- The role of the facilitator is essential in all participatory methods. Active facilitation has been shown to increase relevant information elicited when compared to an identical process without facilitation. Generally, it is the responsibility of facilitators to maintain the flow of the proceedings and to keep everyone on time and on track. The facilitator should be flexible, unbiased, empathetic, a good listener and enthusiastic. The facilitator should develop a rapport with the participants, be respectful and communicate in a clear and friendly manner. While facilitators do not need to be experts in the given subject area, they need sufficient knowledge to facilitate the debate and take the process forward.
- The participatory process should be deliberative - allowing time for participants to become informed in the area; be able to reflect on their own and others' views; and

[70] Health Canada, op. cit., 2000.
[71] Ibid.
[72] Involve, op. cit., 2005.
[73] Drawn and adapted from Involve [8], Sciencewise [16], Rowe and Frewer [14] Toolkit and Health Canada [6].

explore issues in depth with other participants. The context and objectives for the process will determine whether it is desirable to seek consensus, to identify where consensus exists or not and/or to map out the range of views.

- Organisers should be open about areas where plurality and a lack of consensus remain. The outputs of participatory processes should present the rationales and implications of divergent views.
- Involve participants in the reporting of their views, provide them with reports of the participatory process and inform them as to how their views are being communicated and used in policy and decision-making.
- Produce outputs from the dialogue (e.g. reports) in a form which is relevant to, and can be easily understood by, public participants, policy-makers, the scientific community and other stakeholders and the wider public.

6 EVALUATION

The principle of evaluation rests on finding out whether the organisers achieved what they set out to achieve and how well they did it.[74] The more clearly the objectives have been established at the start of the planning cycle, the easier it will be to set up a system to assess whether or not the event has been successful.[75]
Evaluation should contribute to developing research activities during the life of the project (e.g., through feedback from evaluators to partners), improving the design of future related activities, assessing project impact[76], and providing stakeholders with a better idea of the value of their participation by tracking influence on the process[77].

Below are some guidelines put forward by Sciencewise for evaluation:[78]

- Public dialogue processes should be evaluated in terms of impacts and processes, in order that the outcomes and impacts of public dialogue can be identified and experience and learning gained that can contribute to good practice.
- Ensure that evaluation commences as early as possible and continues throughout the process.
- Ensure that evaluation addresses the objectives and expectations of all participants in the process.
- Be evaluated by independent parties.
- Be clear that evaluation itself depends on frameworks that should be open to deliberative scrutiny.

[74] Research Councils UK, op. cit., 2002
[75] Ibid.
[76] Ibid.
[77] Rowe, Gene, and Lynn J. Frewer, "Evaluating Public-Participation Exercises: A Research Agenda", *Science, Technology & Human Values*, Vol. 29, no.4, 2004, pp. 512-556.
[78] Sciencewise, op. cit., 2013.

SECTION II: LANDSCAPE OF EXISTING MML PROJECTS AND ETHICS-RELATED PROJECTS

1 INTRODUCTION

The second section in this handbook offers empirical insights into the landscape of existing MML projects, ethics-related projects and innovation initiatives with regard to their approaches to participatory processes. The aim of the empirical study was to learn from the experience gained in other MMLs, ethics-related projects and innovation activities specifically with regard to their incorporation of and/or interaction with different stakeholders. This enabled a comparison of the processes between the running MMLs and contributed to the identification of what has worked well and what has not, along with the ultimate objective of finding mutually acceptable solutions in workable participatory processes.

This second part of the deliverable proceeds as follows. Section 2 offers a description of the methods of data collection and analysis. Section 3 provides an overview of the MML projects, ethics-related projects and innovation initiatives surveyed (see Appendix 1 for a list of the projects), their participatory goals and mechanisms and experiences and findings as regards participatory processes (see Appendix 2 for a brief description of some of the participatory techniques and methods found in the projects). Based on an analysis of the findings, a set of recommendations for workable participatory processes are offered in sections 4.1 and 4.2. Section 4.3 zones in on MML projects in particular, offering a list of unique features of the projects and views on the meaning of "mutual learning and mobilisation". Section 5 offers a brief conclusion as to the importance of well-organised and implemented participatory approaches for the societal challenge of ethics assessment.

2 DATA COLLECTION AND ANALYSIS

A website study of MML projects, ethics-related projects and innovation initiatives was carried out in order to identify those projects that appeared most relevant to SATORI. Semi-structured interviews were carried out with MML project leaders[79] and other leaders and key contributors on ethics-related projects and innovation initiatives regarding their plans for and/or experiences with participatory processes in their respective projects.

In total, 34 interviews were carried out across 28 projects (see Appendix 1 for details of the projects surveyed). The majority of these interviews were carried out by phone or over Skype, with interviews lasting between 15 and 45 minutes. The interviews were recorded and permission was requested for the use of quotes (see Appendix 3 for consent form).

The interview tool (see Appendix 4) was informed by a brief literature survey of the scholarly and grey literature on participatory approaches. The interview questions were grouped under three main headings, namely "participatory processes", "experience of participatory processes" and "recommendations" (for participatory processes in other projects and for the SATORI project). Questions in the interview tool were followed but with enough leeway to

[79] The planning and organisation of interviews with MML project leaders and contributors was carried out in conjunction with DMU colleagues working on Work package 12.

facilitate modification, elaboration and occasional digressions. This approach was designed so as to elicit specific details from project contributors across a variety of projects.

Given the nature of the data – reports of project leaders' and others' experiences with participatory processes – discourse analysis was not required. For this reason, coding was carried out by hand, i.e., without the assistance of a qualitative data analysis software package such as NVivo, in order to categorise the main themes emerging from the interviews. These themes were grouped under the three headings mentioned above.

3 OVERVIEW OF PROJECTS AND FINDINGS REGARDING PARTICIPATORY PROCESSES

3.1 MML PROJECTS

MML Project	Participatory goals and mechanisms	Comments/findings
INPROFOOD	• Promoting bottom-up development of concepts (processes and structure) of societal engagement in food and health research. • Investigation of the role of 'Public Engagement in Research' in private and public research sectors. • Stakeholder engagement programmes. • Outline of an MMLAP based on stakeholder analysis and social network policy analysis. • European Awareness Scenario workshops (EASW). • Play Decide games. • European Open Space Conference (forum for debate) – one such conference was held. • Stakeholders engaged: (1) public organisations (e.g., research institutes and universities); (2) independent civil society organisations (CSOs) and (3) industry.	• 35 EASWs were held in 13 countries and comprised the main format for participation. The consortium followed a random selection procedure which required the creation of large databases for each group. This was problematic given that some larger countries might have thousands of one kind of stakeholder group (e.g., CSOs) while others may have very few or even none. In addition, some countries may have public registries allowing the easy accessibility of details, while others may be lacking in such registries. The EASW method was chosen for its novelty and sophistication – the consortium wanted to go beyond standard engagement techniques. • Play Decide games are frequently used in science museum initiatives and were viewed as particularly appropriate for engaging young people in discussing their approaches to a particular problem. • The Open Space Conference was chosen because it allows a high degree of openness and transparency. • Regarding *representativeness of the different stakeholder groups* involved, the respondent was satisfied but pointed to two challenges in particular. First, it may not be easy to convince some stakeholders (e.g., big food associations) to send a representative to talk for a whole day. Persistence is crucial, as is the following up of e-mails with phone calls. Second, partners in the

		research consortium had different levels of experience with participatory processes – some partners had no previous experience. This can make the project difficult, particularly when there are so many partners involved.

R&DIALOGUE	• Promoting dialogue between research and civil society in order to develop shared and sustainable solutions in the transition to sustainable, low-energy production.
	• Aim to achieve
	  o A joint vision on the development of a low carbon society
	  o Actions to improve dialogues and mutual learning
	  o "An interactive energy dialogue between science and society leads to an accelerated realisation of sustainable energy projects"
	• R&Dialogue aims at an equal participation of stakeholders, for all to express and share their specific point of view: respecting differences, acknowledging the value of every one, pooling resources for the common interest.
	• National dialogues.
	• A social science team facilitates the social process for an effective sharing and mutual learning experience.
	• A dialogue that enables mutual learning and develops a joint vision on decisions and actions for a low carbon society.
	• National dialogue includes
	  o Interviews with stakeholders
	  o Online discussion
	  o Face-to-face workshops
		• The UK National Dialogue is seeking to engage organisations in public and private sectors and civil society organisations for whom a low carbon society is not their core mission. This was their initial thinking, however, the project team has found it *difficult to elicit interest if the topic is not the core mission of the organisation*. The concept of responsible research and innovation also informs the approach, i.e. to foster discussion between providers of research and technology and other parts of society before the technology is fully formed. The aim is to *investigate whether dialogue can influence subsequent development.*
		• As regards the effect of the dialogue process, ideally stakeholder input would impact decision-making. The respondent observed that *measuring whether decisions are actually influenced is difficult* because such influence may be intangible.
		• As regards the degree to which processes can enable mutual learning and mobilisation, the respondent emphasised the importance of following up – after the empirical engagement – on the degree of learning that occurred, in addition to the point at which learning occurred.
		• The respondent felt that the notion of "mutual learning" (with an emphasis on "mutual") is very idealistic, implying a level of consensus. The notion of "mobilisation", he felt, also implies a sort of common awareness of a certain issue. A better approach, he felt, involves investigating the structural differences in how people to do things and looking at the extent to which these

		perspectives overlap.

PERARES	• PERARES aims to strengthen public engagement in research (PER) by involving researchers and Civil Society Organisations (CSOs) in the formulation of research agendas and the research process.
	• Existing debate formats (science cafes, science festivals, online forums/debate).
	• Science Shop network.
	• Scenario workshops between research institutes and NGOs.
	• Alternative forms of agenda-setting dialogues: bringing research institutes/universities and CSOs together to work on a specific research topic in the social sciences and humanities.
		• The idea was to do something that was more than the sum of its parts. There are already people doing dialogues and research for civil society and the idea was to link up science shop practitioners with dialogue practitioners. 10 or 20 years ago both groups of people would not have been on speaking terms with each other because the dialogue people usually come from science centres or festivals that demonstrate the beauty of science, whereas the science shop people come from a more democratic perspective in which a more critical perspective about how mainstream science behaves exists. However, the respondent feels that both groups have become more pragmatic and the people in the science centres have become more aware of ethical aspects and have begun to organise these debates, so it's no longer so black and white.
		• The consortium has developed evaluation guidelines, i.e., a toolbox with four sets of evaluation tools. A major motivation for developing the guidelines is the frequently "sloppy approach" to evaluation on the part of science shop and public engagement people. They developed four sets of questionnaires that can be used in order to make it easier and to encourage own partners to use them. The toolbox includes the following:
		  • First form on having just established a partnership: expectations management, are the roles clear, is the research question clear for everyone, etc.
		  • Mid-term evaluation during the project
		  • Evaluation output
		  • Evaluation impact of the project a year to a year and a half following completion of the project in order to see what the CSOs

		have done with the results. This is mostly done on an informal basis in science shops but can also be done historically (e.g. on the occasion of an anniversary). Important to have good examples of impact for university support both re public engagement with research and research engagement with society.

SiS CATALYST	• SiS CATALYST involves two main pillars of work, i.e. the mainstreaming of science in society activities for children through the development of practical and easy delivery guidelines and support and the mobilisation of the political processes involved required to effect change. Crosscutting themes include Listening to Young People, Recognising the Role of Students and Building the Dialogue with Key Players (organisers, scientific researchers and managers).
	• Aims include
	  o Mobilising mutual learning among stakeholders at different levels and from different sectors, regions and countries
	  o Encouraging institutions to empower children and instil early positive attitudes to learning through activities such as 'Children's Universities'
	  o Providing a blueprint of activities for engaging, inspiring and motivating children with ability who appear unlikely to progress to post-secondary education
	  o Enriching lifelong learning and social inclusion through the next generation of learners
	• The Mentoring Associate Programme involves 36 organisations, including universities, networks, science institutions, museums and NGOs from over 20 countries. Each partner is paired with another to work together on a key issue of science communication or social inclusion. The Mentoring partnerships are split into three themes: sustainability, models and targeting, three key themes for any person or organisation wishing to work in either science communication or social inclusion.
		• As regards the question as to what 'learning' means, the respondents emphasised that in order to know something about the degree of learning that has occurred, it is necessary to know what the baseline is. As regards the 'mutual' aspect of learning, they emphasise societal benefit, while noting that learning occurs on a one-to-one basis. There are different learning outcomes but a mutual situation.
		• Learning is linked not only to stakeholders but to the various consortium partners.
		• The coordinators are struggling with how to *capture learning between the partners*.
		• One important *outcome of learning* is a consistent change in behaviour. However, such change can be difficult to measure, given that projects run for finite periods. Another learning outcome is a *process of reflection* in which reflective thinking is integrated into daily work.

GAP2	• GAP2 builds upon the GAP1 project. The aim of the GAP1 project was to initiate working collaborations between scientists and fishery stakeholders by combining their knowledge and skills to enhance understanding and management of fisheries and the marine environment. GAP1 created a foundation of active participation and mutual learning by establishing 11 case studies of science-fishery stakeholder collaboration which GAP2 is now building upon. GAP2 aims to demonstrate that through working together, scientists, fishermen and policy-makers can find sustainable solutions to the challenging issues of fisheries management. • Standard social science methods (interviews, observation, focus groups, oral histories) • Participatory mapping • Participatory modelling • Participatory management • Collaboration and participation • Exchange Program for researchers, fishery stakeholders, and policy-makers exploring how collaboration works. This programme encourages the sharing of understanding and ideas by funding candidates to travel and undertake an exchange with relevance to participatory research.	• Participation involves *defining objectives and issues with stakeholders and working together* - sharing responsibility for work activities, involving fishermen and stakeholders in order to give value to their knowledge and to translate their traditional ecological knowledge into metrics that could be used for scientific purposes. • *Engagement is about empowerment of those people around the table* - allowing fishermen and other stakeholders to enter the management discourse and to increase skills. However, this is not only in one direction, i.e. it is not about scientists informing stakeholders but also the reverse. • The *trans-disciplinary approach* is very challenging. When using social science methods it is necessary to engage other disciplines in order to do it well. Credibility and legitimacy increase with a trans-disciplinary approach - also makes it more appealing to the policymakers (at least in practice). • It is *difficult to make an impact at the highest level of policy-making* due to some barriers that exist, e.g. policymakers are not used to endorsing or using research that is carried out under a participatory approach.
SEISMIC	• The SEISMIC project is linked to a Joint Programming Initiative and aims to coordinate national projects/programmes related to urban development. • The consortium wants to assess the views of citizens and representatives of civil society organisations with regard to their needs and priorities in the area of social innovation. Their aim is to bring these perspectives into the research and innovation agenda, in addition to obtaining more differentiated views across different countries. Regional context, cultural aspects and national economic trajectories will all play a role. • Stakeholders include city representatives and NGOs representing grassroot initiatives, in addition to people "from the streets" (the general public). • Participatory processes will include workshops, debates and the use of social media.	• As regards the level of participation of stakeholders, the consortium's main ambition is that stakeholders' statements will have an *impact on the research and innovation agenda*. They also want stakeholders to initiate new activities and get actively engaged in the project. • *Representativeness is a tricky issue*. It needs to be well thought out in terms of the kind of stakeholder (old, young, employed, unemployed, etc.), i.e. a kind of very broad representation. On the other hand, there are different sectors relevant to urban development (i.e. education, health

		sector, energy, government, infrastructure and so on) and this also has to be balanced. All of these aspects have to be taken into account in the fields of urban development and urban social innovation. • With regard to the *notion of mutual learning*, their ambition is to introduce aspects to the research agenda that have not been well covered thus far and to start a joint debate with stakeholders. For the coordinator, mobilisation is about raising the level of engagement and giving people a need to express their wishes, giving them a voice and motivating them to take action.
SYNENERGENE	• Synenergene aims to initiate and foster public dialogue on synthetic biology and mutual learning processes among a wide variety of stakeholders from science, industry, civil society, education, art and other fields. • Open dialogue between stakeholders re benefits and risks of synthetic biology. • Exploring possibilities for its collaborative shaping on the basis of public participation. • Mutual learning processes among a wide variety of stakeholders including science, industry, civil society, education, art and other fields. • Mobilising new stakeholders to participate in discourse on synthetic biology. • Specialised stakeholder fora (civil society, business, policy, media and science).	• *The SYNENERGENE project is just in its first phase*. For that reason, the interviewee could only speak in general terms about the participatory processes that are proposed/planned to take place in the later phases. • There are three main phases in the public involvement platform. The consortium is currently in the first phase in which third parties are shaping experiences and learning with SYNENERGENE partners. They have passed the first milestone in this phase, namely knowledge sharing and mutual learning work. In a second phase, those involved will meet again in order to share ideas regarding public engagement activities. In a third phase, third parties and project partners will develop participatory activities together. • The level of participation they aim for is to engage/partner with stakeholders. The desired outcomes of the processes include the capture of public views, concerns and expectations of the public re synthetic biology. Another objective is to feed in findings re concerns and so on into research strategies at the European level. Given that synthetic biology is a new field and the public

		is largely unaware of it, they also aim to inform stakeholders.
MARLISCO	• MARLISCO aims to raise public awareness, facilitate dialogue and promote co-responsibility among different actors towards a joint vision for the sustainable management of marine litter across all European seas. • Through developing innovative mechanisms and tools, the consortium aims to effectively engage, inform and empower society, reaching the widest possible audience. • Survey on perceptions and attitudes of different stakeholders regarding marine litter. • Video contest for young people. • National debates: national fora on marine litter including industry representatives, the public, environmental concern groups, NGO and national/regional policymakers and decision-makers. • National activities (exhibitions, workshops, clean-ups). • Awareness exhibition on the theme of marine litter (aim is to inform and sensitise the general public and educational community). • Educational material on marine litter.	• The respondent is responsible for co-ordinating the workpackage on national fora for stakeholder dialogue. The consortium will hold 12 fora in 12 different countries. The organisers wanted to have public engagement in the fora (they wanted everyone to "have their say"), so they organised a webcasting event. • The first forum event was very successful. 50 participants were invited encompassing different sectors involved in the area of marine litter. They also invited the general public to participate. 14 *satellite groups* from the country participated in teams of five. The feedback from the satellite groups was very positive, with participants saying that they appreciated being part of such an event. The respondent reported that establishing such satellite groups was technically quite difficult and budget limitations were another factor. • The forum organisers had a substantive aim, i.e. that participants' solutions would have an effect on governance decisions regarding the challenge of marine litter. The forum organisers will make a list of suggestions re views on how to solve the problem of marine litter. This will be followed by a vote on the list of ideas. A document will then be submitted to the national government and the Commission. The document for the EC will *condense views from the 12 national fora*. The organisers' hope is that such a document will *empower people* – if nothing has been done three years down the line, they can refer to this document in questioning the powers that be.
CASI	• Main aim to develop a methodological framework for assessing and managing sustainable innovation through wider public engagement in the RTDI system and the commitment of a broad spectrum of societal stakeholders. • Mapping online survey.	• The consortium will start its engagement activities at the end of 2014/beginning 2015. The number of people to be engaged is "huge": activities will include a mapping online survey, workshops and

	• Webinar. • Citizens' panel. • Stakeholder workshops. • Expert workshops.	webinars. The consortium aims to reach more than 10,000 people. • The consortium will establish an online survey involving all stakeholder groups. They are also designing a mapping methodology in order to map the different countries and other organisations such as the United Nations. In parallel, they will map sustainable innovation cases. • The survey will include 1500 respondents from all Member States and will explore sustainable innovation and the factors necessary for the successful management of sustainable innovation. Both the project partners and the country correspondents will identify the relevant people from the EU and UN organisations, in addition to countries outside the EU. The survey takes the form of an instrument with which to scope the first draft of the common framework. The focus of the survey will be clarified following the mapping activity. • The consortium will then organise stakeholder workshops to discuss the first draft of the framework. They will also have pilot projects on testing the assessment framework with innovators (20 technological innovators and 20 social innovators). They will also carry out interviews with innovators/developers.
PACITA	• PACITA aims to increase the capacity and enhance the institutional foundation for knowledge-based policy-making on issues involving science, technology and innovation, mainly based upon the diversity of practices in Parliamentary Technology Assessment (PTA). • The main objectives of the project are as follows: o To expand the TA landscape in Europe o To explore the institutionalisation of PTA in different ways and in different countries o To investigate countries that do not have TA o Training schemes	• Re the anticipated effect of the participatory processes, the aim is to build knowledge that fits into policy-making. The respondent noted the *difficulty of detecting the direct influence of participatory activities on the policy-making process.* • There has been a lot of mobilisation already in countries with TA. Mobilisation is also present in the engagement with policy-makers regarding their expectations, etc. Mobilisation in non-TA

	○ The Volta magazine • The PACITA consortium: half of the partners have established PTA while the others have yet to establish PTA in their respective countries.	countries in visible in the building of networks and engaging people in understanding TA. • As regards learning, there are a number of elements in the project. Policy-makers learn about the contribution of TA, researchers learn about the needs of policy-makers and experienced practitioners in TA train new/less-experienced practitioners in the area. On a broader level, many policy-makers are now more knowledgeable about TA and people are being mobilised on a political level.
SFS	• Sea for Society engages stakeholders, citizens and youth in an open and participatory dialogue to share knowledge, forge partnerships and empower actors on societal issues related to the ocean. In so doing, the project aims to develop and enrich the concept of "Blue Society", preparing mechanisms for cooperation in parallel. • Consultation phase based on the principles of participatory dialogue. • Collective intelligence methodology. • Sharing of co-authored knowledge arising from the consultation process. • Mobilisation phase. • Public Engagement in Research (PER). • Partnership and interaction mechanisms.	• The consortium used the collective intelligence methodology to consult citizens and stakeholders. The methodology proved to be very successful in collecting feedback. The idea is to bring a group of people together to come up with shared opinions on a certain topic. Initial discussion of barriers in the field takes place, followed by ideas and options for addressing these barriers. The consortium carried out a collective intelligence initiative with citizens (1 day) and stakeholders (2 days). • Stakeholders were *categorised according to influence to reflect on a specific issue*. Specifically, they were grouped according to first and second tiers and influence. This categorisation ensured that everyone with a role in relation to the issue was included and no one was excluded. • In terms of the level of participation, the aim was to engage stakeholders and to collaborate with them. The project consortium also wanted to understand engagement and how to get stakeholders to work together to decide on research priorities – the respondent reported that this particular aim was achieved. • As regards the desired outcome of the participatory processes, the aim was to better

		understand the issues at stake. The respondent highlighted the problems of messages not reaching stakeholders and a lack of collaboration.
NERRI	• NERRI (Neuro-Enhancement: Responsible Research and Innovation) is a three-year project under the 7th Framework Programme. • The aim of the project is to shape a normative framework underpinning the governance of neuro-enhancement technologies. • The project will involve different stakeholders and will promote a broad societal dialogue about neuro-enhancement. • It will use MML activities such as interviews and workshops to engage scientists, policy-makers, industry, civil society groups, patients and the wider public. • The project will also develop an analytic classification of neuro-enhancement technologies into currently available methods, experimental and hypothetical technologies.	• The project started with a work package devoted to the classification of enhancement techniques currently available in Europe (drugs, devices, etc). • A series of interviews was conducted to analyse the ethical framework of the different stakeholders. • A very critical point was the identification of representatives of users who should be a group of key stakeholders. It appears that few people use enhancing drugs in Europe and a very weak pro-enhancing movement exists. The consortium has identified some representatives in groups supporting transhumanism and the development of cyborg rights. • A first participatory activity was conducted in Rome. It was a science café in one of the city's main scientific museums. The activity was conducted by a philosopher with a background in neuroethics. • Multidisciplinary meetings are planned for the next step. • The media have been identified as key stakeholders in shaping general knowledge about neuroenhancement and media representatives are involved in multidisciplinary meetings. • Some differences emerged between the different members of the consortium concerning the kinds of participatory processes that fit better in the different countries. Their suggestion for future projects is to have enough time to analyse and compare the baseline about the selected topic (in terms of knowledge but also in terms of general interest) in the different countries in order to develop appropriate participatory processes that will finally help all the participant to reach the

		goal, which is the building of a common European ethical framework in very controversial topics.

3.2 ETHICS-RELATED PROJECTS AND INNOVATION INITIATIVES

Project	Participatory goals and mechanisms	Comments/findings
EST-FRAME	• Developing an assessment framework for R&I, based on integration of different types of assessment (impact, risk, technology, ethical, economic, foresight assessment). • Opening up discussion between different types of assessors & other stakeholders (policy makers, industry, researchers, NGOs). • Validating results from the project's case studies (mapping assessment practices and government situations in selected fields). • Testing the workability of the developed integrated assessment framework (participants engaged throughout the process) and exploring the interest among stakeholders to actually use the developed tool in practice. • Workshops: discussing assessment practices and policy in selected fields. • Workshops: discussing & testing the developed integrated assessment framework.	• The project is developing an assessment framework for R&I, based on integration of different types of assessment: impact, risk, technology, ethical, economic, foresight assessment. • The project has learned that there is insufficient dialogue between different assessment domains. This is especially important in cases of controversial and contested issues regarding new technologies where routine assessment practices are insufficient and a broader reflection and flexibility is required. Different types of experts challenge each other in interesting ways which enables a more innovative way of understanding the problems within a technology field. • A good way of involving technology developers and different policy makers (economic, technological etc.) with other stakeholders would be to replicate the cross-domain thinking at the level of stakeholders with responsibility. To have multi stakeholder ethical assessment with actual decision-makers would be the challenge. • It is important to be sensitive to national differences and differences in R&I fields. • Difficulties in attracting NGOs.
SYBHEL	• Providing a platform for stakeholders from different expert communities to reflect on the ethical and legal issues raised by synthetic biology in the context of European health policy making. • Discussing the existing set of tools that are currently available to govern these issues and reflecting on the different European fields of policy and governance that are likely be challenged by existing and future health applications of synthetic biology.	• It is important to have a clear idea as to why different stakeholders should be involved (purely academic workshops risk being boring and not useful). • Give stakeholders the opportunity to present their own work or the questions that they themselves see

	• Tackling the question as to what synthetic biology can offer in response to global health issues. • Workshops, structured around a discussion paper that the organisers of the workshop prepared and on which participants were invited to comment in their own submitted papers/presentations. • Discussed new approaches: • real-time technology assessment • road-mapping. • Short story competition	as relevant to the workshop topic. • It is necessary to create a situation which enables more open interaction. In this situation, everyone is invited to leave their comfort zone and engage in an open discussion in which everyone is challenged. • Analyse what exactly the project learned from the interaction and what this entails for the direction of the project. (Use participation to verify the goals of the projects and to eventually redefine them.) • Hosting stakeholders from different fields was also a valuable experience for the participants themselves since they could share experience and were challenged to reflect on their daily routine, discussing it from new perspectives and contexts. • Difficulties in getting policy-makers to come to workshops.
RESPONSIBILITY	• Aimed at coordination and implementation of responsible R&I. • Forum: a space for the discussion of appropriate guidelines and overall approaches to RRI, in a manner which is inclusive of a wide range of stakeholders. • Observatory: a depository of responsible R&I resources; a permanent point of reference in the field of responsible R&I, accessible to all.	• It is important to include stakeholders at all stages throughout the project, already in the development of the project and its participatory tools. • Identifying the right stakeholders is very important and not at all obvious. Often, stakeholders are identified in a very obvious and arbitrary way. The end-user is often overlooked.
GREAT	• Developing a theoretical model of participation based on an empirical survey of practices in European projects. • Analysing the limits and conditions of participation. • Motivating stakeholders to participate. • Enabling people to participate. • Glossary of responsible R&I (in cooperation with the Observatory in the RESPONSIBILITY project).	• What is the conception of participation we are working with? Participation should not be limited (as it often is) to consultation. Participation should be understood more broadly and stakeholders should co-construct the targets of research. Participants should be involved in strategy setting and decisions. Also, the impact of participation should be clearly defined and visible to participants. • How to motivate people to participate? Some are limited by time and money, others do not find ethical problems/issues pertinent to their practice. The rationalistic approach (argumentation and demonstration) has limited scope. • Enabling/facilitating capacity-building of participants is very important; otherwise you are

		only dealing with their preconceptions. People have to understand the problems, contexts need to be created. • Collecting recipes for participatory processes would be the wrong approach. These processes are highly context-specific and may not be applicable to other contexts. • There should be no presuppositions regarding how processes should work. The other, i.e. stakeholder's points of view, should be taken into account.
EGAIS	• The goal was to study how the advanced/emerging technologies oriented projects were managing ethical issues in order to suggest improvements in processes involving management of ethical issues. • Questionnaire on ethical governance of the projects (among project leaders). • Workshops in which the ethical implications of various emerging technologies were discussed with a range of stakeholders. • Final conference: comments, results and the outcome of the project were discussed.	• Ethical issues are often ignored or relegated to the 'expert' or 'board of experts', typically outside the field. Ethics (and related issues) were seriously considered and imbedded within the project only in a very few cases. The lack of a participatory approach and the failure to embed ethics from the beginning are very common features within these types of projects (emerging technologies). • It proved difficult to avoid an academic debate and get in touch with practitioners (it proved difficult to attract people from industry). It is a challenge to get people involved. It is necessary to have a scenario prepared, a story that serves as a template, connects all stakeholders and motivates the discussion. • Once you get the debate going you should really be open to different opinions and values; participatory processes should involve the *precautionary principle*, because you will have conflicts, which is natural. • Focus on the process, not the outcome. • There is a gap to be bridged between ethical discussions in technology and in humanities. Definitions, guidelines and codes of conduct are not enough – there is a need for a critical theory of ethics in technology, based on a philosophically sound approach.
VALUE ISOBARS	• Participatory processes focused on the end user (general public): main focus on younger people and having a participatory process on value-related questions in	• There is significant potential for participatory process if they are done well, and at the same time a

	relation to different technologies. • "Value Dialogue Science Parliament": involved 60 high-school students. The idea was to directly engage with students on issues in S&T (privacy, security, etc.), with examples given from biometrics, and formulate a discussion supported by their (students') basic values and views. The aim was to detect relevant social values and get insight into public views and value-sensitive issues: this can provide for a valuable counter-perspective to the expert advice. • Project's consortium workshops: preliminary results from the workshop discussions were distributed electronically to a group of selected end-users who provided feedback to the discussions; the group of selected end-users was also invited to the final project conference in Brussels. • Discussions with policy makers throughout the course of the project and the end; representatives from DG-Research and the project's end-user panel gathered to discuss the results, recommendations and possible further activities.	potential for misuse (e.g., some cases in developing countries have been unsuccessful). Presently, little is known about the success or lack thereof of processes. • Ethical matrix should be used for participatory processes. • Efforts should be made to gain better coverage of the interplay of values / value-sets regarding the questions of S&T within European countries, in order to achieve an improved representation of the cultural and societal variety within Europe. Qualitative research on values in relation to S&T should be conducted on a wider scale within the European community. Research should aim to elucidate value diversity, ambiguity and complexity in the cultural landscape of Europe. • Research should be conducted to evaluate the short-term and long-term value of participatory exercises of various forms, and in particular to identify to what degree these exercises can elicit deeper values or value-sets of people in their perceptions of S&T. • Implicit and explicit value judgments in European S&T governance should be made transparent such that the main driving forces of political decisions become accessible for open dialogue.
PROGRESS	• Plenary workshops and collaboration on reports with project partners from all continents; integrating knowledge, experiences and approaches from around the world. • Gathering information and coming to agreements on the differences between approaches to research and innovation in different regions. • Workshops with end-users: marginalised population in southern Africa (the San community of South Africa, Botswana and Namibia); working with various NGOs established in southern Africa and the South African San Institute as a partner in the project; because it can be difficult for people without higher education to make their voices heard in complex European projects, the consortium also has specially dedicated workshops for the San community which focus on the topics according to the project contract but with an alignment to the specific circumstances and research needs of the local population; bringing representatives of various communities to	• The participants were able to contribute to the research proposal from the start and are now able to contribute to published outputs as well as add their voice to the plenary workshops. • The coordinator consulted with relevant stakeholders at the beginning of conceptualising the research and then built their views into the project proposal. • People from the communities are highly engaged in ways not seen in Europe and are very keen to contribute and to resolve as many matters as possible. • Especially when working with vulnerable populations it is important that others do not grab the

	one place to talk (they are lacking these opportunities because of distance/transport issues).	centre of the stage. • The recommendation would be to involve people who do not normally get involved in participatory processes and involve them with a lot of power. Insist on equitable partnerships with groups in developing countries. (Giving funds for involvement; bringing in their views through funded employees.) Participatory processes should not just involve flying in somewhere, undertaking whatever processes one thinks might be required, and then flying out.
CONSIDER	• Consider stands for Civil Society Organisations in Designing Research Governance. • The Consider project considers the role of CSOs in research (if at all) including their possible roles, tasks and their involvement in research. For those CSOs that do have a role, the project consortium wants to understand the mechanisms that allow effective participation, in addition to those factors that work to constrain good participation. • The consortium carried out a survey of a CORDIS database of projects in order to investigate which projects included CSO participation. They then carried out another survey looking in-depth at 30 cases with different stakeholders in participation projects, namely CSOs, academic scientists and industry with the aim of formulating recommendations for CSOs, researchers, research funders and policymakers which speak to CSO participation. • The consortium is still analysing the data and have identified a number of issues thus far. Issues include the lack of effective funding, a lack of capacity/experience on the part of CSOs to carry out effective research , difficulties re the legality of such entities in European projects and the fact that EU projects can be very complex and bureaucratic. Additional issues include the lack of a common language between researchers and CSOs and tokenism, i.e., CSOs being involved just because research should be applied.	• Some CSOs are participating effectively and are even leading projects (this is rare) as they are experts in the particular field. *The level of participation of CSOs varies*. Some CSOs are treated as partners, are responsible for specific work packages and have a very good budget. Others participate as intermediaries (e.g. giving feedback on medical research) while others attend meetings, share their expertise but are not involved in a specific work package. • Re the success of projects in engaging CSOs, there are differing views, with scientific researchers reporting success and some CSOs reporting that they feel they have not been taken seriously or have not been listened to (some of these feel disadvantaged). • As regards the representativeness of stakeholders, the respondent reports that researchers on the projects think that projects are representative of the agendas, needs, wishes and so on of CSOs. *Re involvement of CSOs in projects*, some were involved from the outset re the form the project should take and provided equal input, while some CSOs were invited to the project following acceptance of the proposal to give talks, feedback, etc. Some of the CSOs are OK with this while others feel less valued as a result. • The consortium is still working on a model for CSO

		participation. The respondent commented that *there is no one model for effective involvement of CSOs in research projects*, rather there are different models of participation.
RESPONSIBLE INDUSTRY	• The Responsible Industry project is the first Commission funded RRI project in the private sector. The rationale for the project: since research and innovation is primarily carried out in industry, the RRI movement also has to consider privately funded research. • The project consortium will carry out a Delphi study of RRI in industry involving 130-150 stakeholders and create an implementation plan that will be tested in four pilot projects. The Delphi study will be the main instrument for information gathering regarding *de facto* RRI. The end result will be an exemplar implementation plan of RRI in industry. • A major premise for the project and associated participatory processes is that RRI is a societal activity which requires societal input and stakeholder engagement. ICT for ageing and well-being is a specific theme in the project – stakeholders to be engaged include industry working in this area, in addition to stakeholders in civil society.	• As regards representativeness, the Delphi study allows a broad spectrum of input. Interpretive data analysis will be used to map the different responses.
SAPIENT	• Goal: to identify the kind of concerns that might arise with regard to surveillance systems, activities or technologies. • Scenarios were given to stakeholders for them to discuss. Discussions were a hybrid between a focus group and a workshop. • Different stakeholders for the different scenarios (15-20 people in each of them). • Participatory mechanisms implemented in the middle of the project. • Input was used to develop a surveillance impact assessment.	• The feeling was that focus groups/workshop enabled mutual learning when sufficient time for discussion was allowed: ⅓ of the time to presentations and ⅔ to discussion. • Groups were quite large - smaller groups (8-10 people) would allow more detailed discussion. • Recording discussion (with informed consent) is recommended. • When working with scenarios it is useful to send them in advance. More leverage could be obtained if stakeholders are asked to discuss the scenarios with their colleagues prior to the meeting. • Each participatory process has its advantages and limitations. A "trade-off" has to be made depending on objectives: representativeness, discussion, interaction and so on.
ETICA	• Participatory goal: to validate previous project's research on ethical concerns (gathering of new information was not the priority). • Two processes for two different stakeholders: focus groups for general public and survey for ICT experts. The groups were never mixed.	• Participatory mechanisms here were used more as a validation of previous research than as a truly participative process. • Be careful with focus groups (lay people): feeling is

	• Participatory mechanisms used at the end of the project.	that videos and presentations used to explain scenarios had an impact on their views and may have shaped their output
		• Recommendations:
		  ○ think the participatory process thoroughly according to the project's objective and integrate them with the actual research at the earliest time possible
		  ○ develop the ability to truly understand and connect to each other

Res-AGORA	• The major goal of the Res-AGorA project is to develop a normative and comprehensive governance framework for Responsible Research and Innovation (RRI). • The project has two main phases: the first one has a strong empirical approach to RRI, to understand the actual framework from the current activities in RRI in Europe, through an extensive case-study process (30 case studies conducted with the aim of identifying particular governance arrangements that seem to work quite well in governing R&I in the philosophy of RRI). As a result of these case-studies, they found some interesting elements that can be the building blocks for future developments. • The second phase will start in September 2014 and will be the real participatory phase, based on co-construction. They will bring the preliminary data obtained in phase one into a series of stakeholder workshops to explain the basic concepts of RRI and to refine them, and also to test the governance frameworks that emerged from the first phase. • The goal will be achieved through a continuous monitoring of RRI trends and developments in 16 selected countries and constructive negotiations and deliberation between key stakeholders. • The participatory processes are based on two experts meeting in the first phase; five co-construction workshop in the second phase.	• The governance framework will be used in the future especially by intermediaries, like funding agencies. So the impact will be on practices, and through practices on the general perception of research and innovation. • During the expert workshop, they discussed the ethical approach to R&I. For some experts, ethics is the first step, and ethical limits should be discussed before starting to design the governance framework; for others, ethical debate is implicit in RRI and doesn't need to be discussed beforehand. • They plan to discuss with the stakeholders at what level and to what extent should they actually address ethical issues in the framework building process. • A well designed participatory process needs to be carefully prepared. Facilitators are needed too - they should be selected carefully among people with good "translational" skills. • Broad and inclusive involvement of all the stakeholders seems to be the only method to go forward with RRI. Participatory processes will be needed also to govern RRI in the future.
FRAMING NANO	• The overall aim of FRAMING NANO was the development of a proposal for a governance plan to enable safe nanotechnology development at EU level and beyond. The project was established with the objective of defining a governance framework together with constructive and practicable regulatory proposals aimed at supporting a responsible development of nanoscience and nanotechnology through the process of an open and international multi-stakeholder dialogue amongst the	• Consultation with stakeholders was a fundamental element of the process. The purpose of monitoring and evaluating stakeholder engagement was, on the one hand to collect different opinions and create a valuable source of information about the project, and on the other hand to build capacity among the

	scientific, institutional, industrial, non-governmental and broader public communities. • For the purposes of the project the process was based on four key pillars : o Analysis of existing and ongoing regulatory processes, science policy interfaces, research of risk assessment and governance in nanotechnologies. o Consultation with stakeholders regarding an evaluation of their attitudes, expectations and needs and the provision of a list of issues to be considered in the deliberative phase of the project. o Framing of the issues leading to a governance platform to manage the responsible development of nanotechnologies o Dissemination of information about nanotechnologies, including proposals developed within the project in order to raise stakeholder awareness and obtain further input for the development of a governance platform.	stakeholders. • In order to reach the objectives mentioned above, the Framing Nano Project developed a two-stage Delphi Study. The Delphi study was the backbone of the entire project and constituted the core of the dialogue process. The Delphi study was selected in order to gather stakeholders' views and expectations in relation to environmental, health and safety issues as well as ethical, legal and social issues related to nanotechnology. • The co-ordinator reported that the project was a very fruitful exercise in terms of deepening the various aspects of controlling the responsible development of nanotechnologies and raising the awareness of the stakeholders. • The co-ordinator also reported that the results of the project have not yet been translated into specific actions but the principles underlined are gaining attention and ground. He hopes that the approach they proposed will become of common use to govern a responsible research and innovation as the principles identified for nanotechnologies could be applied in general to all emerging technologies and innovation. • In order to have meaningful results, the number of stakeholders involved was quite high since the response for these type of exercises is normally not higher than 20-30%. For the first Delphi round, they identified more than 300 stakeholders who were asked to answer the questionnaire. A little more than 100 of them answered. The second round involved only some of those stakeholders. All partners were required to identify a certain number of these stakeholders in their own country and were also asked to solicit responses.
VOICES for INNOVATION	• VOICES is a consultation using the opinions of 1000 people from 27 EU countries to shape the future of European research in the field of urban waste. • The goal was to prepare an overall EU report detailing 1000 citizens' hopes, fears,	• VOICES organisers strongly support their participatory process because an important advantage of focus groups, in comparison with other

	concerns and ideas on the theme of urban waste. • They used a single participatory tool: a three-hour focus group with approximately 10 citizens selected by local recruitment agencies on the basis of sociodemographic characteristics • Citizens were the only stakeholders. • Focus groups were followed by a semi-structured script consisting of an introduction, four main exercises and an evaluation part. • Each focus group was facilitated by a moderator. • Focus groups were composed of four exercises, to engage the participants on the relevant topics, drawing out collective opinions and ideas in a carefully facilitated face-to-face process. • This participatory process was chosen because they wanted to influence and modify the decision making process at the institutional level (policy making and procedures), changing the calls of Horizon 2020 in the field of waste management and research to fit better with citizens' needs.	research methods, is that participants can respond to and build on the views expressed by the other participants. • The outcome of the project was a document that was used by decision makers to modify both the scientific calls and the policies of waste management. • They claim that their project demonstrated the need of the Science in and for society call and the role of citizens in shaping RRI. • They strongly support the need of a good validation, consolidation and evaluation process of the participatory processes. • They also stress the importance of giving feed back to the stakeholders who took part in the consultation, so they can understand the relevance/importance of their contribution. • Ethical issues such as the impact of modern life in waste productions and individual responsibility for the environment were part of the discussion in the focus group during the assessments of citizens' needs and perceptions.
EUROPEAN INNOVATION PARTNERSHIPS (EIPs) (Two interviews: Interview on the European Innovation Partnership on Active and Healthy Ageing and interview with designer/co-ordinator of EIPs)	• Cooperation between the supply side and the demand side very early in the innovation process. • Shortening the time from idea to innovation. • Making innovation more fit for purpose with early input from the demand side. • Presenting successful solutions with a view to possible application in another city/region/state. • Action Groups • Marketplace • Reference Sites	• EIPs operate in the field of societal challenges and public markets. Cooperation is based on an exchange of ideas and forming of initiatives. Since the EIPs are active in public services, the emphasis is on mutual benefit and added value of cooperation (excluding the issues of competition and copyright). • Bottom-up approach: the initiatives come from partners themselves, who autonomously formulate and operate their action plans. (All kinds of stakeholders can register their interest. Participation is voluntary and EIPs do not provide funding/investment. Stakeholders with common interest form Action Groups and work out Action Plans and Commitments according to which they develop their innovations.) The role of the Commission is to facilitate the process.

		• The demand and supply side cooperate at an early stage in the innovation process, so that the innovations can be developed faster and are more targeted to fit specific actual needs. The inclusion of policy-makers and regulators aims to facilitate required adaptations of policies, revisions of regulations, expediting the standardisation process etc. • An innovation cannot always be straightforwardly copied: there is a need to account for the specifics of the situation and to develop a toolkit for successful transmission.
JOINT PROGRAMMING INITIATIVE (JPI) JPI: More Years, Better Lives – The Potential and Challenge of Demographic Change	• The Joint Programming Initiative (JPI) "More Years, Better Lives - The Potential and Challenges of Demographic Change" seeks to enhance coordination and collaboration between European and national research programmes related to demographic change. • The JPI follows a transnational, multi-disciplinary approach bringing together different research programmes and researchers from various disciplines in order to provide solutions for the upcoming challenges. Currently 14 European countries and Canada are participating. • Workshops were organised with experts from different fields (health, social welfare, education and learning, work and productivity, housing, urban and rural development, mobility). • Intedisciplinary meetings will also be organised. • The partners involved many different stakeholders interested in ageing such as trade unions, regional governments, city councils, patients associations, scientists, educators and teachers. • All the stakeholders were involved since the beginning in the different advisory boards. • Imputs from the different advisory boards had an impact in changing the decisions of the general assembly of the JPI (so they had an impact on decision making). • Participatory projects involving civil society at large will start in 2015 with the first call issues from the JPI.	• The feeling of the coordinator of the JPI is that it is not really clear how this kind of initiative should work. The goals are ambitious and the number of stakeholders involved is huge but there are no funds allocated to help participatory processes. • Civil society was involved via associations that should represent all the stakeholders, but to avoid overlapping and conflict only one of each kind is selected (often the most important one at European level, so they lack different points of view). • The selection of the participatory tools was in part restricted by limited organisational and financial resources and was determined by the fact that they are a rapidly evolving entity. • They don't feel that the JPI is the best framework to promote participatory processes and public involvement in science and research. • They think that JPI formula is suitable for pacing the different research programs of the different countries in a certain field, to harmonise the goals of European research, but they don't know how to involve citizens in this process. • MYBL has no direct effect on decision making processes, because their role is to advise decision makers. Any kind of decision is taken by the General Assembly, where there are only the representatives

		of the Member States with voting rights. They had a minor impact on policy making, but they succeded in changing the perception of the older people and of their needs in the GA. • It's too early to understand if this JPI will be able to mobilise societal actors or to reach any other goal involving the whole society. Their first aim is to align the research agenda on demographic change and ageing in the different member states, which is a huge task. The first common call will be launched in March 2015, so the involvement of the different stakeholders and the debate on ethical issues or controversies will emerge only after the first research project starts.

4 RECOMMENDATIONS FOR WORKABLE PARTICIPATORY PROCESSES

Recommendations for workable participatory processes have been developed through an analysis of the findings concerning participatory processes in the different projects (see tables in previous section). The first set of recommendations (section 4.1) sets out first-hand good practice advice for the design, implementation and evaluation of participatory processes. The second set of recommendations (section 4.2) reflects specific advice/recommendations for the SATORI project on the basis of respondents' general experience with participatory processes and more specific experiences with ethics-related projects and issues. Section 4.3 offers real world and project-based insights into the notion of "mutual learning and mobilisation" by focusing in on the defining features of these projects (4.3.1) and practitioner views on the meaning of mutual learning and mobilisation in practice (4.3.2).

4.1 FINDINGS FROM INTERVIEWS: GOOD PRACTICE ADVICE

Preparation

- It is important to be *clear about the particular notion of participation being worked with*. Participation should not be limited – as it often is – to consultation. Participation should be understood more broadly and stakeholders should contribute to co-constructing the targets of research and be involved in strategy-setting and decision-making.
- The *goals of a participatory process should be clear* from the outset. Think the participatory process through thoroughly according to the objectives of the project.
- Projects with many partners at European level require a *high degree of preparation*. It is important to plan well in advance and to have sufficient time to test the methodology.
- It is important to know *the environment* in which you are carrying out a participatory exercise – different countries will have different conditions and perspectives.
- *Defining stakeholders and target groups* is a challenge – it is often easy to reach the "usual suspects" but more difficult to open up to more general publics. End-users tend to be overlooked.
- *Selecting the participatory process/approach* involves some level of compromise. For example, using webcasting as a participatory technique may lead to the loss of some industry stakeholders who do not want to have their contributions broadcast and on record. A lack of resources may mean that face-to-face meetings and workshops are not possible, thus necessitating interactions online which, in turn, have their own limitations. For example, online discussion through the medium of online dialogue tools suffers from delayed responses and a lack of face-to-face interaction. Thus each participatory process will have positive aspects and limitations and a trade-off will have to be made depending on the objectives of the exercise. It is important to be clear about what you want, e.g. public participation versus the involvement of other key stakeholders. Moreover, there are different levels of engagement and no one glove will fit.
- The *complexity of the topic* - if it is new and the public does not have knowledge of it - necessitates the creation of awareness and accessibility of activities to various publics.

Design

- It is important to *motivate and enable stakeholders to participate* without perpetuating a rationalistic or paternalistic approach. A bottom-up approach enables stakeholders to co-define the goals of the project and facilitates their involvement in decision-making. *Stakeholders should be involved in the design* of participatory processes so as to facilitate their being fit-for-purpose.
- Organisers should not have a fixed idea of how the process/approach should work – they should be *open to stakeholders' input* and *sensitive to situation-specific dynamics* as they develop.
- Projects should not only consult stakeholders at the beginning of a project but find ways in which to *engage stakeholders throughout the duration of the project* and further development.
- Stakeholders should be informed from the outset as to the *kind of impact* they can expect as a result of their participation. In addition, the nature of the impact should be communicated to them after the participatory process has concluded.
- *Clarity about what will be done with results* is crucial. Participants want feedback on their contributions, namely with respect to the manner in which their contributions are taken up in further work. The results of engagement exercises must be used and the impact of contributions should be demonstrated. It is also vitally important to have a transparent process in which an explanation of the method is provided and documents are made publically available.
- Experience has shown that *dynamics differ in different groups* and organisers should not be "afraid" of this.
- *Representativeness* is a challenge. The aim is not to be representative of society as a whole but to ensure that there is variety in the profile of societal stakeholders.
- It is important to *identify the motivations of stakeholders to be engaged* in order to elicit and retain their interest. However, in engaging stakeholders it is important to be careful about their expectations and to think about how to generate added value as a result of their participation.
- *Buy-in of participants* in the participatory process is crucial.

Implementation

- Having *a good facilitator* is crucial to the hosting of a good event which is seen by stakeholders as having some legitimacy. Moreover, the facilitator should be well-versed in the methodology and should provide all involved with an opportunity to speak. The facilitator should be able to deal with both the technical and social aspects of engagements. Science journalists, science communicators and science museum guides function well in this role given their expertise in translating science and in managing opinions from a neutral perspective.
- It is important to *find a balance between the structure of the participatory process and openness*. It can be challenging to avoid a typical academic debate and open up the discussion to views from different fields of practice.
- It is important *not to underestimate the tacit knowledge* and experience of lay people.
- It is important to have some kind of *incentive* for people to participate. While financial incentives are not encouraged by the European Commission, organisers of

engagement events can try to compensate by ensuring a very nice location for the exercise, in addition to good food, etc.

- When working with vulnerable populations, it is important that others do not take the limelight. Involve those people who do not normally participate in such processes such that they have a good degree of agency in the process. Partnerships with groups in developing countries should take place on an equal footing.

Feedback and follow-up

- *It is crucial to follow up with participants* by developing a short report on exercise outcomes or by having local institutions keep in touch with them at the local level.
- Following the participatory event, organisers should analyse the *outcomes* of the process and reflect on the implications of the outcomes for the further "direction" of the project.
- Participatory processes done well have great potential. At the same time, participatory processes can be misused. Third party evaluation of the outcomes of the participatory processes should take place.
    - The PERARES consortium has developed evaluation guidelines, i.e., a toolbox with four sets of evaluation tools. A major motivation for developing the guidelines is the frequently "sloppy approach" to evaluation on the part of science shop and public engagement people. They have developed four sets of questionnaires that can be used in order to make it easier and to encourage own partners to use them. The toolbox includes the following:
    - First form on having just established a partnership: expectations management, are the roles clear, is the research question clear for everyone, etc.
    - Mid-term evaluation during the project
    - Evaluation output
    - Evaluation impact of the project a year to a year and a half following completion of the project. This is mostly done on an informal basis in science shops but can also be done historically (e.g. on the occasion of an anniversary). Important to have good examples of impact for university support both regarding public engagement with research and research engagement with society.

Other issues

- It is *difficult to detect the direct influence of participatory activities* on the policy-making process.
- *Academic relevance* is an important issue. Researchers want publications while other project partners/participants may prefer to have results that have an impact.
- *Difficulties in language and communication* between backgrounds and disciplines is a challenge.

4.2 RECOMMENDATIONS FOR THE SATORI PROJECT

- It is crucial to have a clear idea as to why stakeholders should be involved. In this regard, the following issues should be considered: why should someone - a stakeholder - join a project, what is their role in it, what kind of collaboration can they offer, etc.?
- It is important to think about how to motivate people to participate: some participants are limited by resources (time and financial), while others do not feel that ethical issues/problems are relevant to their practice.
- A number of interviewees identified media representatives as key stakeholders but did not know how to involve them. Furthermore, media representatives are viewed as a category with its own agenda that is not always as clear as that of science or industry representatives. One of the interviewees stated that this is because media representatives have never been considered as independent stakeholders but only as a "passive node" along the transmission chain of knowledge.
- There are different aspects to mutual learning and it is important to understand the different elements involved.
- One project co-ordinator stressed the importance of assuring participants that their voices will be heard, in addition to emphasising the importance of openness and transparency. Moreover, organisers of participatory processes should promise to collect empirical data in as correct a fashion as possible. Finally, with regard to substantial issues of public engagement in research, the coordinator reported that people (stakeholders) do not know who is making the decisions regarding research, what is being researched, etc. Moreover, citizens know that they are not really being heard. Citizens also are critical of the lack of transparency and openness in research programming.
- As regards recommendations for the development of the ethical framework in SATORI, one respondent stressed that "there is no single ethics".
- The EST-FRAME project has shown that there is insufficient dialogue between different assessment domains (impact, risk, technology, ethical, economic, foresight assessment). This is especially important in cases of controversial and contested issues regarding new technologies where routine assessment practices are insufficient and a broader reflection and flexibility is required. Different types of experts challenge each other in interesting ways which enables a more innovative way of understanding the problems within a technology field.
- One project respondent observed that there is a gap to be bridged between ethical discussions in technology and in humanities. Definitions, guidelines and codes of conduct are not enough – there is a need for a critical theory of ethics in technology, based on a philosophically sound approach.
- It is important to decide on what should come out of the SATORI project, e.g. is the ethics assessment framework going to be something that the Commission will implement? If so, this aim needs to be communicated to stakeholders regarding their role in the process.
- One respondent stressed that the benefits of research need to be distributed more fairly. Specifically, there is a need for a greater balance between industry and citizens in EU-funded research. People are not informed as to what it means to do research for civil society – they have the idea that it is bad science or that it does not lead to anything, while it leads to much social innovation and well-being, along with good research and results.

- Efforts should be made to facilitate better coverage of the interplay of values / value-sets regarding questions around science and technology (S&T) within European countries, aiming at improved representation of cultural and societal variety within Europe. Qualitative research on values in relation to S&T should be conducted on a wider scale within the European community. Research should aim to elucidate value diversity, ambiguity and complexity in the cultural landscape of Europe.
- Implicit and explicit value judgments in European S&T governance should be made transparent such that the main driving forces of political decisions are accessible to open dialogue.

4.3 MML PROJECTS

4.3.1 DEFINING FEATURES

- Bringing together a diverse group of actors with broad and varied expertise and experience all working towards a common goal.
- Public engagement in research.
- Engaging the participation of marginalised groups in defining a research agenda, e.g., PERARES consortium worked with travelling communities in Hungary, Spain and Ireland.
- Important role of CSOs and grassroots organisations in setting the research agenda.
- Transdisciplinary approaches in some cases.
- Working at different levels, i.e., the local, regional and national levels.
- Linking participatory research and its outcomes to the policy level.
- Importance of stakeholders' views and perspectives having an impact on the research and innovation agenda.
- Concept of responsible research and innovation informing the approach, i.e., fostering discussion between providers of research and technology and other parts of society before the technology is fully formed. Can dialogue influence subsequent development?

4.3.2 VIEWS ON "MUTUAL LEARNING AND MOBILISATION"

"Mutual learning and mobilisation" was variously viewed and discussed as follows:

- Across many projects, learning is linked not only to stakeholders involved in the projects but also to the various consortium partners who have very different backgrounds and perspectives.
- Societal benefits are an important part of the 'mutual' aspect of learning. There are different learning outcomes but a mutual situation.
- The notion of "mutual learning" (with an emphasis on "mutual") is very idealistic, implying a level of consensus. The notion of "mobilisation" also implies a sort of common awareness of a certain issue.
- Mutual learning involves a genuine exchange between stakeholders and scientists and the creation of new knowledge.
- Mutual learning is about bringing experts with different backgrounds together.
- Mobilisation is about getting many people involved, including people from universities that did not have engagement previously. Learning derives from the fact

that people work alongside people with very different levels of experience, i.e. those who have been working in the area of public engagement for 25 years and those who have just started to work in the area. In addition, very established institutions and newly established grassroots organisations work together, as well as partners of different ages and with different agendas.

- Mobilisation is about raising the level of engagement, giving people a voice and motivating them to take action.
- One project respondent prefers to talk about "mobilising" as opposed to "mobilisation" as this implies a more active approach. For her, mobilising includes stimulating thinking about diversity and stimulating learning.
- In order to have an idea as to the degree to which participatory processes can enable mutual learning and mobilisation, it is important to follow up – following conclusion of the engagement – on the degree of learning that occurred, in addition to the point at which learning occurred.

5 CONCLUSION

Interaction with a variety of stakeholders will be a crucial element in the development of a common ethics assessment framework. Given the diversity of needs, values and interests of the different stakeholders, participation is central to the societal challenge of ethics assessment. Both parts of this deliverable have shown that there are a myriad ways in which participation can be carried out. Most importantly, both the handbook and empirical insights have demonstrated the importance of thoughtful and considered design, implementation and evaluation of participatory approaches for meaningful engagement and participation to take place. This is particularly salient for the implementation of an MML project such as SATORI which aims to address the societal challenge of ethics assessment by proactively forging partnerships with complementary perspectives, knowledge and experiences such that stakeholders' contributions can have a direct influence on the development of the ethics assessment framework.

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APPENDIX 1 MML PROJECTS AND ETHICS-RELATED PROJECTS SURVEYED

This section sets out a list of the projects included in the empirical survey, in addition to the position/role of interviewees within the respective projects.

MML projects

- INPROFOOD – Towards sustainable research programming for sustainable food innovations (co-ordinator and work package leader)
- R&DIALOGUE – Research and Civil Society Dialogue Towards a Low-Carbon Society (principal investigator on a national dialogue event) http://www.rndialogue.eu/
- PERARES – Public Engagement with Research And Research Engagement with Society (co-ordinator)
- SiS-CATALYST – Children as Change Agents for Science in Society (co-ordinator and researcher and advisory board member) http://www.siscatalyst.eu/
- GAP2 – Connecting Science Stakeholders and Policy (lead partners in participatory research and policy uptake work packages) http://gap2.eu/
- SEISMIC – Societal Engagement in Science, Mutual learning in Cities (co-ordinator and advisory board member)
- http://www.seismicproject.eu/
- SYNENERGENE – Responsible Research and Innovation in Synthetic Biology (lead partner on public participation work package) http://www.synenergene.eu/
- MARLISCO – Marine Litter in European Seas – Social Awareness and Co-Responsibility (lead partner on platform for stakeholder dialogue) http://www.marlisco.eu/
- CASI - Public Participation in Developing a Common Framework for Assessment and Management of Sustainable Innovation (co-ordinator) http://www.casi2020.eu/
- PACITA- Parliaments and Civil Society in Technology Assessment (co-ordinator) http://www.pacitaproject.eu/
- SFS – Sea for Society Towards a Blue Society (leader on consultation process work package) http://seaforsociety.eu/np4/home.html
- NERRI - Neuro-Enhancement: Responsible Research and Innovation (consultant for participatory processes) http://www.nerri.eu/eng/home.aspx

Ethics-related projects

- Consider – Civil Society Organisations in Designing Research Governance (co-ordinator) http://www.consider-project.eu/
- Responsible Industry (co-ordinator) http://www.responsible-industry.eu/

- ETICA – Ethical Issues of Emerging ICT Applications (co-ordinator)
  http://www.etica-project.eu/
- SAPIENT - Surveillance, Privacy and Ethics (partner responsible for participatory processes)
  http://www.sapientproject.eu/
- EST-FRAME – Integrated EST framework (co-ordinator and workshop organiser)
  http://estframe.net/
- SYBHEL – Synthetic Biology for Human Health: the ethical and legal issues (work package co-ordinator)
  http://sybhel.org/
- RESPONSIBILITY – Global Model and Observatory for International Responsible Research and Innovation Coordination (lead project partner researcher and project partner researcher)
  http://responsibility-rri.eu/
- GREAT – Governance for Responsible Innovation (project co-ordinator)
  http://www.great-project.eu/
  EGAIS – The Ethical Governance of Emerging Technologies (lead researcher in project co-ordination team and workshop organiser)
  http://cordis.europa.eu/result/report/rcn/53898_en.html
- PROGRESS – Towards a European normative model for Responsible Research and Innovation globally (project co-ordinator)
  http://www.progressproject.eu/
- VALUE ISOBARS – The Landscape and Isobars of European Values in Relation to Science and New Technology (project co-ordinator)
  http://www.value-isobars.no/
- FRAMING NANO – A multi-stakeholder dialogue platform framing the responsible development of Nanoscience & Nanotechnologies (project co-ordinator)
  http://www.framingnano.eu/

European Innovation Partnerships

- European Innovation Partnership on Active and Healthy Ageing (representative of Directorate General Health and Consumers and a representative of Directorate General Research & Innovation/Innovation Union policy)
  http://ec.europa.eu/research/innovation-union/index_en.cfm?section=active-healthy-ageing

Joint Programming Initiatives

- More Years, Better Lives – The Potential and Challenges of Demographic Change (co-ordinator)
  http://www.jp-demographic.eu/

APPENDIX 2
BRIEF DESCRIPTION OF METHODS AND TECHNIQUES FOUND IN THE PROJECTS

Multi stakeholder workshops[80] bring together people from various fields and domains who share a common area of interest to discuss area-related issues and challenges, exchange experience or share good practices. Based on their specific (professional, communal, etc.) perspectives, participants share their views in a discussion, structured around an introductory paper or a series of presentations. The open format of this technique allows various aspects of the subject to come to the fore and enables confrontation of various approaches.

Conference[81]: a series of expert presentations on a predetermined theme, followed by a discussion with an assigned respondent or other participants. Cross-domain conferences can include different stakeholders presenting their views on a common issue.

Value Dialogue Science Parliament[82] is a form of direct engagement with youth in which high-school students discuss issues of science and technology. The aim of the approach is to detect relevant social values and get insight into public views on value-sensitive issues.

PlayDecide[83] is a discussion game that can be used to talk in a simple and effective way about controversial issues ranging from ambient assisted living to climate change. The main goal of PlayDecide is to propose solutions, define strategies and policies for action and inform decision-makers and policy-makers of the ideas and plans developed during the game. The tool introduces policy-making as a process in which different choices and options are available. The results of the games are uploaded on a dedicated website which allows for comparison of views between countries.

The **European Awareness Scenario Workshop (EASW)**[84] is a method of promoting discussion and participation created by the Danish Board of Technology. The aim of the scenario workshop is to create a basis for local action with regard to different areas of technology or issues related to ecology and the urban environment. Scenarios are formulated in advance and workshop participants' feedback on the scenarios, along with their own experiences, form the basis for visions and action plans.

The **Open Space Conference**[85] format and structure was designed by DIALOGIK – a German non-profit institute for communication and cooperation research- and is roughly based on the "Open Space Technology" method founded by Harris Owen.[86] Open space conferences usually take place over a period of three days but this can vary depending on the topic and the target group. The number of participants can range from 100 – 1000. There is no formal schedule but a heading and sub-title are provided in order to have a motivating question from the outset. The workshops are self-organised by the workshop participants with basic guidance from a facilitator regarding the basic rules of how to work together. Participants are required to write a report which they hand to the organisers following each

[80] http://archive.unu.edu/hq/library/Collection/PDF_files/CRIS/PMT.pdf
[81] http://archive.unu.edu/hq/library/Collection/PDF_files/CRIS/PMT.pdf
[82] http://www.value-isobars.no/
[83] http://www.playdecide.eu/
[84] http://www.cipast.org/cipast.php?section=1012
[85] http://www.openspaceworld.org/
[86] http://en.wikipedia.org/wiki/Open_Space_Technology

session. The Open Space conference is a suitable method to use with diverse groups with heterogeneous interests and from a variety of disciplines.

Science Cafés[87] are events that take place in informal community gathering spaces such as pubs and coffee shops. The events are open to everyone and feature an engaging conversation with a scientist about a particular topic. Interactions between a scientist and the public are two-way and dynamic, thus empowering the public to learn while allowing the scientist speaker to gain a valuable perspective on their work.

A **science festival**[88] is a festival that showcases science and technology with events such as lectures, exhibitions, workshops, live demonstrations of experiments, guided tours and panel discussions. Many science festivals include hands-on activities similar to those found in science centres. Many science festivals also have events specifically aimed at secondary school students and/or teachers, such as workshops or curriculum-linked workshops.

Participatory modelling[89] refers to the process of incorporating stakeholders, including the public and decision-makers into the modelling process. Participatory modelling differs from modelling itself in that stakeholders may play a role both in the definition of the model (e.g. selecting relevant variables, providing qualitative and quantitative information on variables, establishing the relationships among the variables, setting the general conditions) and in the selection of scenarios to be investigated. Participatory modelling offers multiple outcomes including increased and shared knowledge and understanding of a system and its dynamics under a variety of conditions, empowerment of stakeholder participants and mutual collaboration between scientists, stakeholders and policy-makers. However, participatory modelling requires quite some time and expense with potentially unpredictable modelling processes. Moreover, participatory modelling can be difficult to replicate and generalise.

Participatory mapping[90] comprises a powerful tool that increases stakeholder involvement and provides a means for participants to express their ideas in an easily understandable visual format. These maps go further than the physical features portrayed in traditional maps to include everything of value to the community – such as social, cultural and economic features – expressed in spatial terms. Participatory modelling can be used to identify data gaps, to evaluate existing programmes, plans and activities, to facilitate the decision-making process and to empower stakeholders. However, participatory mapping can be time-consuming and resource-intensive. Moreover, the success of participatory mapping depends highly on the capabilities of the stakeholders involved, thus some methods will not be feasible for certain audiences.

Participatory planning[91] is a participatory process aimed at defining, proposing and enforcing a management plan on issues of common interest. The emphasis on a management plan as an approach allows for the integration of stakeholders, scientists and policy-makers, thereby stimulating participatory action and research. Participatory planning allows an opportunity to tailor management rules at local/regional scale according to stakeholders'

[87] http://www.sciencecafes.org/
[88] http://en.wikipedia.org/wiki/Science_festival
[89] http://gap2.eu/methodological-toolbox/participatory-modelling/
http://www2.econ.iastate.edu/tesfatsi/ParticipatoryModelingWhatWhyHow.AVoinov.March2010.pdf
[90] http://csc.noaa.gov/digitalcoast/sites/default/files/files/1366314383/participatory_mapping.pdf
http://gap2.eu/methodological-toolbox/participatory-mapping/
[91] http://gap2.eu/methodological-toolbox/participatory-planning

needs with a bottom-up approach integrating experience-based and research knowledge as an important aim. The outcome of participatory planning is the design of a management plan that is based on a participatory process.

A **focus group**[92] is a planned discussion among a small group (4-12 persons) of stakeholders facilitated by a skilled moderator. It is designed to obtain information about people's preferences and values- and the reasons for these preferences - through observing the structured discussion of an interactive group in a permissive, non-threatening environment. Focus groups can also be conducted online. Focus groups are good for initial concept exploration and generating creative ideas. They are often used to test, evaluate and/or carry out a programme review. They are most appropriate to get a sense of regional, gender, age and ethnic differences in opinion. They are not effective for providing information to the general public or responding to general questions, nor are they used to build consensus or make decisions.

Surveys[93] are a method of primary data collection based on communication with a representative sample of individuals. Surveys are usually descriptive in nature but can also be used to provide causal explanations or explore ideas. A survey can be conducted using different information-gathering techniques such as mail-out questionnaires, in-person interviews and telephone surveys. The method can fulfill a number of objectives such as identifying a group's characteristics, measuring attitudes and describing behavioral patterns.

European Innovation Partnerships (EIPs) participatory tools

Action Groups are "assembl[ies] of partners committing to work on specific issues,"[94] related to the scope of challenges tackled by an EIP. The partners – selected among applicants to the EIP's "Invitations for Commitment" – design and follow their own action plan. This bottom-up approach is based on the benefit of stakeholder cooperation (supply side, demand side and policy makers) in public market innovation.

The Marketplace is a web-based tool for open exchange of ideas and initiatives. Registration allows networking, partner and peer search as well as finding and posting information on subject area-related news, projects and funding opportunities.[95]

Reference Sites are peer-reviewed presentations of successfully implemented innovations and practices, with the aim of encouraging their application in other places or contexts.[96]

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[92] King Baudouin Foundation and the Flemish Institute for Science and Technology Assessment, *Participatory methods toolkit: A practitioner's manual*, December 2003, http://archive.unu.edu/hq/library/Collection/PDF_files/CRIS/PMT.pdf

[93] http://www.hc-sc.gc.ca/ahc-asc/alt_formats/pacrb-dgapcr/pdf/public-consult/2000decision-eng.pdf

[94] European Commission: European Innovation Partnership on Active and Healthy Ageing. https://webgate.ec.europa.eu/eipaha/actiongroup/index/what

[95] *Cf.* European Commission: European Innovation Partnership on Active and Healthy Ageing. https://webgate.ec.europa.eu/eipaha/index/marketplace

[96] *Cf.* European Commission: European Innovation Partnership on Active and Healthy Ageing. https://webgate.ec.europa.eu/eipaha/index/site

APPENDIX 3 PARTICIPANT INFORMATION SHEET

Stakeholders Acting Together On the ethical impact assessment of Research and Innovation (SATORI)
http://satoriproject.eu/
Participant information sheet

By signing the attached form, I understand that I am consenting to participate in the European Union-funded (Grant agreement number 612231) SATORI research project conducted by the University of Twente, Trilateral Research & Consulting and other partners. I am aware that the purpose of this research is to understand current practices and principles in ethics assessment across a number of fields. This research will involve an interview lasting up to one hour where I will be invited to discuss my knowledge about this area.
I understand that I am participating in this research voluntarily and that I am free to terminate the interview at any time. I am also aware that I am free to refuse to answer any questions that I feel are commercially or institutionally sensitive or relate to topics that I do not wish to discuss. I understand that I have the right to ask questions and receive understandable answers before making any decision.

I understand that I will only be asked to provide professional, not personal, information and that the record of my involvement in the research will be kept confidential. I have been informed that everything I say will be anonymous and that I will remain anonymous in any published material. The interview data will be recorded via voice recorder and I understand that I can request a copy of the transcript to review if I wish. I understand that I am also allowed to delete or make any changes to the transcript if I feel my answers could be improved or clarified. I understand that this research will be used to produce an up-to-date and detailed comparative analysis of EU and international practices related to ethics assessment in scientific research and related innovation activities.

I understand that this research conforms to European Commission guidelines and that it has been approved by the Ethics Committee in the Co-operation theme of the 7th Framework Programme. Finally, I have been given the contact details of the research team and I have been informed that I am free to contact Philip Brey (Project Coordinator) about any queries relating to my data or the project itself. Philip Brey's e-mail address is p.a.e.brey@utwente.nl and his telephone number is +31-53-4894426.

SATORI Interview Participant Consent Form

Project Title: **Stakeholders Acting Together on the ethical impact assessment of Research and Innovation**

Participant Identification Number for this project: **Please initial box**

1. I confirm that I have read and understand the information sheet/letter (delete as applicable) dated *[insert date]* explaining the above research project and I have had the opportunity to ask questions about the project. ☐

2. I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason and without there being any negative consequences. In addition, should I not wish to answer any particular question or questions, I am free to decline and can contact Philip Brey on +31- 53- 4894426 ☐

3. I understand that my responses will be kept strictly confidential. ☐

4. I give permission for members of the research team to have access to my anonymised responses. I understand that my name will not be linked with the research materials, and I will not be identified or identifiable in the report or reports that result from the research. ☐

5. I agree for the data collected from me to be used in future research. ☐

6. I agree to take part in the above research project. ☐

_____	_____	_____
Name of Participant (*or legal representative*)	Date	Signature
_____	_____	_____
Name of person taking consent	Date	Signature
To be signed and dated in presence of the participant		
_____	_____	_____
Lead Researcher	Date	Signature
To be signed and dated in presence of the participant		

Copies:

Once this has been signed by all parties the participant should receive a copy of the signed and dated participant consent form, the letter/pre-written script/information sheet and any other written information provided to the participants. A copy of the signed and dated consent form should be placed in the project's main record (e.g. a site file), which must be kept in a secure location.

APPENDIX 4 INTERVIEW INSTRUMENT

SATORI is a recently launched MML project which aims to develop a common European framework for ethical assessment of research and innovation (R&I) (seehttp://satoriproject.eu/). The SATORI research consortium will develop an ethics assessment framework based on thorough analysis, participatory processes and engagement with stakeholders, including the public, in Europe and beyond. One major aim of the project is to build a common approach concerning the societal challenge of ethics assessment among the different MMLAP partners/ethics-related projects. In a first step, we want to learn from the experience gained in other MMLs/ethics-related projects, specifically with regard to approaches to participatory processes. We want to understand other projects' incorporation of and/or integration with different stakeholders and to identify workable participatory processes. To that end, we are interested in hearing about your experiences with participatory processes, especially regarding what has worked well and what has not.

Participatory processes:

- Which kinds of participatory processes do/did you use? What kinds of stakeholders do/did you aim to reach?
- Why have these particular participatory processes been included in the project?
- What were the criteria for choosing the participatory processes?
    - What level of participation do they facilitate? (low to high/inform versus engage/partner)
    - What kind of effect do you expect from the participatory process?
        - Substantive (concrete decision outcomes)
        - Procedural (modifications to the process of deciding)
        - Contextual ("side" effects)
- At which stages of the project do/did you seek consultation with stakeholders? Why were these stages chosen?

Experience of participatory processes:

- Please reflect on your experience with the participatory processes used in the project
    - Which processes were most useful?
    - Which were less useful?
- Were the processes representative of different stakeholder groups involved? Can you please elaborate on your answer?
- Please reflect on the degree to which the processes enabled mutual learning and mobilisation. For ethics-related projects: Please reflect on the degree to which the participatory processes contributed to mobilising societal actors, opening up to civil society and enhancing trust and acceptability of research and innovation processes and outcomes among the general public for ensuring widespread use of technologies.

Recommendations:

- Recommendations for participatory processes in other projects
    - Are there any recommendations you could offer for the set-up and running of participatory processes in other projects?

- Recommendations for the SATORI project
    - Given your engagement with different actors in the research and innovation process, do you have any recommendations for the development of the ethical framework in SATORI?