



Public Engagement Innovations for Horizon 2020

Inventory of PE mechanisms and initiatives D.1.1

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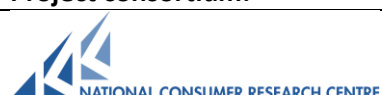
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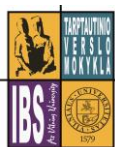


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The PE2020 project

PE2020 will identify, analyse and refine innovative public engagement (PE) tools and instruments for dynamic governance in the field of Science in Society (SiS). PE2020 analyses the PE tools and instruments through a systemic and contextual perspective, and contributes to the potential and transferability of new governance innovations. PE2020 will create new knowledge of the status quo and trends in the field of public engagement in science, refine innovative PE tools and instruments and propose new ones.

The project will do this by (1) further developing a conceptual model that provides a systemic perspective of the dynamics of public and stakeholder engagement; (2) creating an updated inventory of current and prospective European PE innovations; (3) context-tailoring and piloting best practice PE processes related to the grand challenges of the Horizon 2020 and (4) developing an accessible net-based PE design toolkit that helps identify, evaluate and successfully transfer innovative PE practices among European countries.

New tools and instruments for public and societal engagement are necessary to boost the quality, capacity and legitimacy of European STI governance and to solve the looming problems related to the grand societal challenges of the Horizon 2020. In order to ensure practical relevance, the project will work through intensive co-operation between researchers and science policy actors. PE2020 will expand the capacity of European and national science policy actors to integrate better societal engagement by providing an easy access to new PE tools and instruments, to be included in the requirements and implementation of research in Horizon 2020 and beyond.

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1 Introduction

1.1 Public engagement with science

Academics, political institutions, institutions of higher education, civil society organisations (CSO's), and other SIS practitioners have increasingly turned their attention and resources towards the promotion of public engagement with issues and decisions broadly concerning science and technology. For instance, with the proliferation of novel technologies such as new biotechnologies the need to include the public in early scientific developments for idealistic, democratic, instrumental and normative reasons have become evident (Bucchi and Neresini 2007; Burchell et al. 2009; Marris & Rose 2010). In this regard, one rationale for including public input has been to increase democratic participation and reinforce scientific citizenship while acknowledging that scientific and technological advances call for new initiatives, platforms and opportunities to engage the public in democratic ways. Other benefits of public engagement include processes of deliberation in S&T governance “to enhance the capacity to respond to emerging issues with levels of public engagement that are proportionate to the issues” (Burgess 2014:48).

In addition to “a reinvigoration of governmental and scientific attention to relationships between science and the public” (Burchell et al 2009:10), the field of public engagement has been reframed and transformed within the last decades and even though the extent of these transformations are debated especially among researchers, there is a general consensus regarding the turn from ‘understanding’ to ‘engagement’ (or from ‘communication’ to ‘deliberation’ or from ‘deficit’ to ‘dialogue’) within the field. This turn includes a move from a one-way and top-down model of communication towards an increased focus on ‘new’ dialogue-based approaches to engagement that include interaction between decision-makers and citizens as well as procedures for citizens to deliberate together (e.g. mechanisms such as citizens juries, consensus conferences, deliberative polls, among others, taken together under the term ‘mini-publics’ (Abelson et al. 2003; Burchell et al. 2009; Goodin and Dryzek 2006; Stilgoe et al. 2014).

Despite transformations and discontinuities in the field of public engagement, a consensus also seems to exist regarding enduring and forthcoming challenges. ‘Deficit-like assumptions’ still mark dialogue (Stilgoe et al. 2014:5), the impacts and evaluations of possible impacts in many cases remains unexplored and unaccounted for (Burchell et al. 2009; Rowe and Frewer 2005) and the prospects for developing alternative models of scientific governance in terms of ‘a culture of experimentation’ has not yet been exhausted (Irwin 2014:74).

1.2 PE2020

A main ambition with the PE2020 project is to support a more dynamic governance of the science and society relation by identifying and exploring recent cutting edge PE innovations within this composite and multifaceted field. The aim is furthermore to “develop a tool for science policy actors that helps them identify, evaluate and successfully transfer innovative PE practices among European countries” (PE proposal B 2013:3).



This report is the first output of the three-year research project and represents a first phase that focuses on identifying PE innovations. The report presents an up-to-date inventory of current and prospective European public engagement innovations based on data collection from multiple sources. The specific objectives and the methodology for building the inventory are outlined below. The inventory will inform the continued research efforts within the PE2020 project, but it also offers a site, in which decision-makers, stakeholders, practitioners, and academics within the field can explore examples of current PE activities, hopefully adding to international learning and inspiration.

2 Objectives and definitions

The general aim of work package 1, as it is stated in the PE2020 proposal, reads:

The aim of WP1 is to develop an **up-to-date inventory of current and prospective European public engagement innovations**. This inventory will provide a background for the selection of a minimum of 50 cases of innovative PE processes related to the governance of science in society, which will be further explored and described. These case explorations will collectively form a catalogue of innovative PE activities in Europe, which will be presented at an international workshop on PE aimed at international learning. The cases will be identified on the basis of the ‘Monitoring Policy and Research Activities on Science in Society in Europe’ (MASIS) (2010-2012) national reports and subsequent analysis, which will be complemented by follow-up analyses and data collection to enrich the catalogue of innovative PE procedures in Europe. The results of WP1 will inform the conceptual refinements envisaged in WP2.

The first task of work package 1 concerns the construction of a systematically ordered inventory of public engagement innovations based on “an analytical approach that is able to capture variation in PE procedures and processes” (PE2020 Proposal A 2013:4). Within task 1.1. - which constitutes the subject of this report - three main sub-tasks are specified:

- › The development of a **methodology to build an inventory of innovative PE procedures and processes** across the 27 EU member countries and countries associated with the EC Framework Programme. The main empirical basis for this task will be the 37 national reports on Science in Society emerging from the MASIS project, and the PE2020 project will capitalize on this vast empirical information by harvesting all relevant examples of PE throughout Europe.
- › The empirical information contained in the MASIS database will be supplemented by information collected through **review of recent literature** on PE activities in Europe. Task 1.1 will systematically review recent volumes of academic journals such as Public Understanding of Science, Science Communication, Science, Technology, & Human Values, and Science and



Public Policy, which are main outlets for analyses of PE experimentation. Likewise, policy and strategic documents at the level of the European Commission's Science in Society program will be reviewed, and as a part of the efforts to build an inventory of innovative PE procedures in Europe, documentation from the recent interim evaluation of the Science in Society program will be reviewed as well. While the MASIS project was specifically tailored to capture SiS activities at the national level, cross-national PE activities were not the object of the MASIS reports, hence examination of activities initiated at the European level will supplement the overall purpose of building a rich inventory. Further input to the inventory of PE cases will be produced in the context of preparatory discussion with relevant science policy actors in WP3 (task 3.1)

- › Task 1.1 will crystallize an analytical approach that is able to capture variation in PE procedures and processes as well as their particular degrees of orientation towards the societal challenges identified in Horizon 2020, and will, in turn, **involve categorisation and classification of PE activities** across Europe (while also including examples from further afield).

2.1 Working definitions

The term '**public engagement**' is often used as an umbrella term characterizing a range of procedures and practices which include the involvement of 'publics' in science related activities. The fluidity and overlap of definitions within the broad concept of public engagement across academic fields, countries, institutions and professions complicate a clear definitional framework as well as evaluative measures (Burchell et al. 2009; Rowe and Frewer 2005). For instance, PE engagement initiatives include activities in science and technology decision making (S&T governance), public engagement in research (e.g. science communication activities between CSO's and researchers and between scientists and the general public), as well as citizen and CSO initiated activities such as community based research, among others¹. At the outset of this initial research phase, a broad and inclusive definition of public engagement is however applied in order to

¹ Burchell et al. 2009:12 include the following number of 'labels' to illustrate how similar terms often are used interchangeably in relation to public engagement processes; science communication, public understanding of science, outreach, public participation, public consultation, public involvement, social appraisal, patient and public involvement, patient forums and participatory technology appraisal.



maintain an open and inductive approach to the field. The current working definition of public engagement, as it is defined in the PE2020 proposal, reads;

“We understand PE, in this context, as activities where there is a distinct role for citizens or stakeholder groups in research and innovation processes. Characteristic to such processes is that they involve new types of interactions between ‘laymen’ and ‘scientific actors’.” (p. 5).

Innovation in this regard can be understood “*as novel combinations of knowledge, practices and resources...*” (Rask et al. 2012:711). In the scope of the PE project, ‘innovative practices’ constitute a main research focus, and a clear definition is therefore called for. At the same time, the identification of such innovative practices is part of the main research objective and an understanding of what defines innovation in this sense should emerge on the basis of both the empirical and conceptual data analysis. In the PE2020 project, a separate work package has been tailored to develop a thorough conceptual understanding of PE, based in part on analysing in more detail the inventory presented in this report. However, a recurring motif in the internal project discussions concerned this question of novelty, and emphasised how the innovative aspect of these public engagement mechanisms and initiatives springs from their ability to make a political impact. Furthermore, it is suggested that innovation in this context also concerns new hybrid ways (and arenas) for bringing policy makers into discussions between researchers (science) and the public (society).

Both elements resonate with existing literature within the area. The latter relates to the above-mentioned turn from ‘understanding’ to ‘engagement’ and the increased focus on dialogue-based approaches to engagement that for instance include interaction between decision-makers and citizens (Abelson et al. 2003; Burchell et al. 2009; Stilgoe et al. 2014). In this respect, the elements of innovativeness can also relate to the effectiveness of mechanisms to ‘increase and deepen citizen participation in the political decision-making process’ in terms of fair selection mechanisms, to citizens’ opportunities to set the agenda and being informed and for being able to discuss the policy area and influencing decisions. Furthermore, innovativeness can also imply that a combination of different engagement mechanisms is applied and often the best approaches make use of such combinations (Smith 2005:7).

Another needed demarcation concerns the definitions of engagement practices, tools, methods, instruments and techniques, procedures and processes etc. which are referred to in an interchangeable manner among practitioners and within the literature. It is however unclear how each of these terms varies if they do at all. To clarify and specify the research objective (and research process), throughout the report we consistently apply the concept of ‘engagement **mechanisms**’ to characterize more generic ways of enacting participation, and apply the concept of engagement ‘**initiatives**’ to specific cases/examples following Rowe & Frewer (2005:254). A mechanism is then ‘participatory budgeting’ for instance, while the specific initiative could be participatory budgeting in Great Yarmouth Borough Council in 2009-2010.



3 Data collection and categorization of PE mechanisms/initiatives

This section addresses methodological considerations regarding data collection of national and cross-national PE activities and outlines the research and coding strategy as to the construction of an inventory of current and prospective public engagement innovations as well as to a preliminary classification scheme of PE mechanisms and initiatives.

3.1 Data collection

A multilevel approach has been applied in the data collection process; a desk research including a literature review has been performed, survey results have been applied, and innovative PE mechanisms and initiatives in Europe and further afield have been identified with the assistance of the international members of the advisory panel and PE2020 partners. More specifically, the number of sources includes:

- › The 37 national country reports emerging from the ‘Monitoring Policy and Research Activities on Science in Society in Europe’ (MASIS) project (2010-12) have constituted the main empirical starting point for data collection. PE2020 builds on the Masis project and capitalizes on this vast empirical information by harvesting all relevant examples of PE throughout Europe. The dedicated sections of the Masis reports concerning ‘public engagement in priority setting’ (including sections on ‘formalised procedures for citizen involvement’, ‘Citizen- or CSO-initiated activities with political impact’ and ‘importance of upstream engagement’) have been systematically coded in Nvivo (see below). The sections encompassing ‘Activities related to Science in Society’ which relate to science communication at large, have been coded according to included PE examples of ‘science cafes’ and ‘science competitions’. Other science education and awareness raising initiatives, such as science centres and museums have only been included if they involved dialogue-based activities and if there ‘is a distinct role for citizens or stakeholder groups’ (cf. working definition for ‘public engagement’).
- › The project, ‘Engaging Society in Horizon 2020’ (Engage2020, Sep. 2013- Nov. 2015), a sister project to PE2020, has conducted a survey among international scholars in the field of research and innovation in order to map the use of methods for societal engagement in activities related to research and innovation. The PE2020 inventory adds in these survey results where supplementary mechanisms and specific initiatives are located. The Engage2020 survey aimed to collect examples of methods (mechanisms) why results to a lesser degree include specific initiatives.
- › A third data source consists of 50 SIS case studies conducted by the Technopolis group (1st version, May 2012) as a part of the mid-term SIS programme evaluation. Relevant examples of PE mechanisms/initiatives among these 50 case studies which include cross-national PE activities have been reviewed and added to the PE inventory. Other relevant current or completed EU SIS projects have also been reviewed, although less systematically, and incorporated into the PE database.



- › A literature review has been conducted comprising of both academic journals as well as ‘empirical’ reports addressing PE activities. The academic journals ‘Public Understanding of Science’, ‘Science Communication’, ‘Science, Technology, and Human Values’, ‘Science and Public Policy’ have been examined for recent articles concerning ‘public engagement’ since these journals represent primary outlets for academic analysis of PE activities. This systematic procedure included recent articles published from 2008 onwards. The collection of relevant literature has also been supplemented by a less systematic ‘snowballing’ strategy at where relevant articles, books and commissioned reports have been gathered throughout the research process and through internet searches, expert knowledge etc. These pieces exceed the 2008-2014 timeframe by also including classic texts, for instance. (See section 6.1 for further review specifications)
- › External sources such as internet sources (e.g. homepages of institutions, organisations, centres etc. engaged with public engagement activities) have also supplemented data collection. Additional cases suggested by project partners and international advisory board members have also been added to the inventory.

3.2 Categorization of PE mechanisms/initiatives

In order to manage the amount of data comprised in the inventory and to provide an overview of the vast amount of PE mechanisms and initiatives identified through data collection, mechanisms and initiatives are structured according to the five main categories listed below. This division primarily serves as a heuristic for organising data and also works as a pre-categorisation model for further exploration, conceptualization and refinement of typology construction in work package 2.² The software programme Nvivo (a software package for computer-assisted qualitative data analyses) has been applied to assist the organization, structuring and coding of data as well as to facilitate the systematical pre-categorization of PE initiatives. The categories below have been constructed and refined through a stepwise and iterative coding process informed by dominating conceptual models for categorizing PE activities, as well as the construction of categories has been empirically driven and funded³.

² It is thus important to emphasise that the categories function as ‘technical distinctions’.

³ Methodological details with regard to the coding and categorization procedure will be specified in a later report (D2.1) in order to further refine, enrich and validate the typology of PE mechanisms and initiatives. Drawing on even



Inventory mechanisms and initiatives are presented under five headlines:

Public communication – *the aim is to inform and/or educate citizens.* The flow of information constitutes one-way communication from sponsors to public representatives, and no specific mechanisms exist to handle public feedback (examples include public hearings, public meetings and awareness raising activities).

Public activism – *the aim is to inform decision-makers and create awareness in order to influence decision-making processes.* The information flow is conveyed in one-way communication from citizens to sponsors but not on the initiative of the sponsors as characterizes the ‘public consultation’ category. (examples include demonstrations and protests).

Public consultation – *the aim is to inform decision-makers of public opinions on certain topics.* These opinions are sought from the sponsors of the PE initiative and no prescribed dialogue is implemented. Thus, in this case, the one-way communication is conveyed from citizens to sponsors (examples include citizens’ panels, planning for real, focus groups and science shops).

Public deliberation – *the aim is to facilitate group deliberation on policy issues of where the outcome may impact decision-making.* Information is exchanged between sponsors and public representatives and a certain degree of dialogue is facilitated. The flow of information constitutes two-way communication (examples include ‘mini publics’ such as consensus conferences, citizen juries, deliberative opinion polling).

Public participation – *the aim is to assign partly or full decision-making-power to citizens on policy issues.* Information is exchanged between sponsors and public representatives and a certain degree of dialogue is facilitated. The flow of information constitutes two-way communication (examples include co-governance and direct democracy mechanisms such as participatory budgeting, youth councils and binding referendums)

well-known elaborated conceptual models with regard to PE dimensions remains a challenging task in capturing diverse, multifaceted, complex and hybrid PE activities. Further conceptualization and data analysis will be carried out and specified in report D2.1.



The categories partly build and elaborate on the tripartite definition of public engagement put forward by Rowe and Frewer (Rowe and Frewer 2005:254). In differentiating between 'public communication', 'public consultation' and 'public participation', the 'flow of information' differs to a substantial degree between one-way and two-way communication. This tripartite definition does to some extent include the intensity of participation in the 'knowledge construction process' (Bucchi and Neresini 2007:462) and thus concerns the levels, at which the public is involved. This scaling resembles well-known theoretical notions in interpreting and typologizing public participation, in which Arnstein's 'ladder of citizen participation' (1969) represents one of the most familiar and renowned models. The public can participate in a number of ways, and can for instance be merely 'passive recipients of information', it may be included in consulting procedures where the public opinion is taken into consideration or it may be an active participant in dialogue-based activities which forms part of decision-making processes, among others. However, this tripartite definition are not able to fully embrace the question of political impact and degree of 'power sharing' in decision-making-processes which to a greater extent is included in Arnstein's model and other classification models (see for instance Smith 2005; Burgess and Chilvers 2006). The five categories applied have therefore been elaborated according to the intensity of participation in terms of involvement in decision-making processes and the potential political impact of citizens on these processes (Smith 2006). Furthermore, it was evident from the empirical findings that the tripartite definition was not sufficiently specified to capture the diversity among the inventory mechanisms and initiatives; in some of the specific initiatives, the information flow is conveyed from citizens to sponsors but not on the initiative of the sponsors (which characterizes the 'public consultation' category). In these cases, most mechanisms and initiatives are grassroot and activist oriented (for instance mechanisms such as demonstrations and protests). A fourth category was grounded in the data; 'public activism', was therefore constructed along with a fifth category concerning 'public deliberation'. The latter category covers deliberative forms of engagement which go beyond consultative mechanisms but where the outcome does not necessarily impact decision-making.

As the main aim of these categories are to organize and survey a large amount of data, the categories need to be able to allow for a comparison of similarities and differences among PE mechanisms but at the same time be inclusive enough to encompass hybrid forms of PE innovations. This implies that a mechanism/initiative could potentially feature in more than one category. The main aim of the mechanism/initiative has therefore been the decisive factor for the preliminary categorization. In cases where several mechanisms are applied, the main mechanism (as well as the main objective) has been the decisive factor. In general, the categorization of both initiatives and mechanisms has been informed by established literature and by a qualitative and careful assessment of case description/additional material established through multiple coding sessions.

The inventory presented below thus applies a simple, dual classification scheme. First, it distinguishes between PE mechanisms (which are generic ways of enacting public engagement) and PE initiatives (which are the concrete examples of specific engagement activities). Second, it classifies PE mechanisms according to five overarching models, namely communication, activism, consultation, deliberation, and participation.



This basic classification scheme is primarily a means for arranging the empirical cases in an accessible and informative way. It is meant to reduce complexity in a highly complex database. Clearly such classificatory schemes also involves a certain degree of violation of the subtler nuances of the individual cases, and attempts to validate the classification scheme by multiple coding procedures within the PE consortium have revealed considerable interpretative variation and have highlighted the difficulties in applying even simple categorisation of PE initiatives.

It should therefore be stressed that the classification scheme applied here is preliminary. In later stages, the PE2020 project will carry out additional work that aims at validating and strengthening the categorisation of public engagement initiatives.

4 Inventory of PE mechanisms and initiatives

The up-to-date inventory of current and prospective European public engagement innovations presented below, encompasses 76 mechanisms and 250 initiatives. The inventory is presented under the five headlines specified above; public communication, public activism, public consultation, public deliberation and public participation. The inventory aims to reflect the scope and heterogeneity of both national and cross-national PE activities that have been and are taking place across Europe (and further afield). It does not, however, suggest to comprise and exhaust the vast amount of PE innovations within the range of the various activities that include the involvement of ‘publics’ in science related activities within this disparate field of public engagement – from the most activist, autonomous and bottom-up initiatives to the most formalised and institutionalised mechanisms for assigning decision-making-power to citizens. Even though 250 PE initiatives should allow users of the inventory to get a good sense of the field, the inventory is, in other words, just a sample of a (growing) universe of PE initiatives worldwide.

The inventory covers PE innovations within all of the five areas of public engagement defined. However, reflecting a project-specific focus on S&T governance and the role of the Masis national reports as a main source for data collection, a particular focus on what could be termed a ‘citizen-political authority relationship’ (Smith 2005:13) is employed, which implies that mechanisms and initiatives characterized as either consultation, deliberation or participation are probably covered more extensively in the inventory than within the field in general. Furthermore, since PE2020 builds on the Masis project and capitalizes on this vast empirical information by harvesting all relevant examples of PE throughout Europe (see section 3.1) some categories such as ‘public communication’ and ‘public activism’ emphasise initiatives from the Masis reports.

Each initiative within the inventory is outlined according to original source descriptions (text cuts and minor changes have however been made), and further information (e.g. internet resources, journal articles, books and reports) is provided as well in separate columns. References to journals can be further located in the literature review in Appendix A, where article abstracts are provided. A fourth column specifies the country involved in the initiative. If only one country is involved, the name of the country is stated. If more than one country is involved, the stated specification is ‘international’. If more than one country is involved and the



initiative has been funded by an EU framework programme, the specification is ‘international, EU funded’. The catalogue will continuously be updated online throughout the project period, so as to include current initiatives and to remain an up-to-date resource for both internal project purposes and for policy-makers, academics and practitioners within the field of public engagement.

4.1 Public communication

– *the aim is to inform and/or educate citizens.* The flow of information constitutes one-way communication from sponsors to public representatives, and no specific mechanisms exist to handle public feedback.

Mechanism	Description	References	Country
Awareness raising activities			
“Open Science”, Czech rep. (science education)	“Open Science” is a project aimed at attracting especially secondary schools students to pursue scientific careers, namely in natural and technical sciences. It organizes lectures for students at the Academy and summer workshops for school teachers. It also organizes two-year residencies for students in AS research centres – 150 students can, under professional supervision, directly participate in scientific research, meet top experts in different fields, and gain excellent knowledge about the present state of science and the perspectives of its future development. The best students shall publish their works in scientific journals, attend student conferences in the Czech Republic, or present their papers at international conferences (EUSCEA and ESOF). Scientific residencies will last two years (January 2010 – January 2012). The main goal of the project is to create a long-lasting collaboration between secondary schools and scientific centres and thus motivate talented students to study technical and natural sciences. The Open Science project is focused on the recruitment of human resources in a long-term disadvantaged field of research – natural and technical sciences and to set up a network of long-term cooperation between secondary schools and institutions of the Academy of Sciences of the Czech Republic.	<p><u>Source:</u> MASIS Report Czech Republic, p. 36.</p> <p>http://www.otevrena-veda.cz/</p> <p><u>Additional information:</u> http://www.otevrena-veda.cz/</p>	Czech Republic
Biodiversity - Um Bosque Perto de Si (A Bush Next to You), Portugal	Biodiversity - Um Bosque Perto de Si (A Bush Next to You). This project involves more than 100 schools and 7 science centres nationwide, coordinated by a leading research institution in the area of forest ecosystems, the Jardim Botânico da Universidade de Lisboa. Its goals is to engage secondary school students in the identification and mapping of biodiversity in Portuguese forests and their ecosystems, to raise their awareness of the importance of science in environmental protection and to recognise the need for risk management and for the redesign of socio-ecological environments within forests.	<p><u>Source:</u> MASIS Report Portugal, p. 33</p> <p><u>Additional information:</u> http://www.ciencia viva.pt/projectos/bosque/</p> <p>http://www.ciencia viva.pt/projectos/bosque/livro.pdf</p>	Portugal



<p>Children's science tea parties in several science museums, Switzerland (science education)</p>	<p>Children's Science tea parties have been organised in many science museums; for example, the small inventors club of the Espace des inventions of Lausanne proposes afternoons with scientific experiments, do-it-yourself and children's tea; the Passerelle Science-Cité from the UNIGE also proposes children from 8 to 12 years old to discover a scientific topic during an afternoon.</p>	<p><u>Source:</u> MASIS Report Switzerland, p. 38</p> <p><u>Additional information:</u> http://www.espace-des-inventions.ch/</p> <p>http://www.unige.ch/communication/service/passerelle.html</p>	<p>Switzerland</p>
<p>Children's universities project, Austria plus other European countries</p>	<p>Austria: The Austrian Kinderuniversitäten (Children's Universities) represents another interesting project. It should be noted that the Children's Universities do not operate under one framework and employ partly differing concepts. One example is Vienna's Children's University, the team not only organises the Vienna based event but also coordinates the European project eucu- net (European Children's Universities Network) to build a network of Children's Universities across a wide range of countries. The Vienna Children's University, among other goals, follows the aim of reaching children from underprivileged backgrounds that do not regularly get into contact with science and academic institutions. Austria still is one of the countries where the parents' socioeconomic background influences the children's educational path to an important degree. The Children's University aims at working against this trend. During the summer holidays, there are two weeks of programme with more than 400 lectures and more than 4000 participating children. The children receive student IDs, eat in the university's canteens, attend lectures by university teachers in the actual university buildings or labs, go to the libraries, and are at the end awarded diplomas. The settings also enable parents, sometimes for the first time, to put foot into a university. The aim is to make the children acquainted with universities and to reduce contact inhibitions. Although the degree to which children from underprivileged backgrounds indeed can be reached this way is still an open question, the project's concept certainly is very ambitious. The project is also interesting in that it results in a weekly radio programme (http://oe1.orf.at/kinderuni), and in collaborations with newspapers.</p> <p>Germany: Many universities organise children's universities much like regular courses, i.e. children are handed out student ID cards and certificates to motivate them to follow the complete term. Very soon in their relatively short history, children's universities attracted internationally renowned lecturers, like Nobel Prize winner Christiane Nüsslein-Volhard with her talk on "Why is one not allowed to clone human beings?" in 2003. In 2005, the Tübingen Kinderuniversität received the Descartes Prize for Science Communication.</p> <p>Liechtenstein: There are individual activities targeted at school children, like Kinder-Uni Liechtenstein (Children's University), which raise topics like future energies, climate change or how technological progress will influence life in the future.</p> <p>Lithuania: Two of Lithuanian universities (Vilnius University and Kaunas</p>	<p><u>Sources:</u> MASIS Report Austria, p. 38.</p> <p>MASIS Report Germany, p. 66.</p> <p>MASIS Report Liechtenstein, p. 19.</p> <p>MASIS Report Lithuania, p. 28.</p> <p>MASIS Report Switzerland, p. 38.</p> <p><u>Additional information:</u> Vienna's Children's University: http://kinderuni.at</p> <p>Eucu- net (European Children's Universities Network): http://eucu.net</p>	<p>International, EU funded.</p>



	<p>University of Technology) are participating in European Children's Universities Network (EUCU.NET, http://eucu.net/). EUCU.NET is funded by the European Commission under the Seventh Framework Programme for Research and Technological Development (FP7), Science in Society. The aims of these Lithuanian Children's Universities are to involve children in science, to popularise the science, to help children understand importance and interest of science, to help children find their talent, to share the experience and knowledge of the famous scientists and professors with children.</p> <p>Switzerland: Most higher education institutions have elaborated initiatives: The universities of Zürich, Basel, Geneva, Bern, Fribourg, Luzern have defined a Kids' university; the UNIGE participates since 2005 in the LERU's European program for a Kids' University; The UNIBAS participates in the EUCUNET European Children's universities network.</p>		
De wereld aan je voeten ('the world at your feet') (science education), Belgium 2008-2009	<p>The project 'De wereld aan je voeten!' ('the world at your feet!') is an initiative of the Royal Flemish Engineers Association (Koninklijke Vlaamse Ingenieursvereniging) and subsidised by the Departments of Science and the Department of Education of the Flemish government (2008-2009). The aim is to convince students in the last two years of secondary education to strive for a career as engineer, technician, entrepreneur or researcher. Schools (of general and technical secondary education) can opt in and can then make use, among other things, of contact with entrepreneurs, engineers and companies to facilitate the reflection of youngsters on science, technology and innovation in a globalising world.</p>	<p><u>Source:</u> MASIS Report Belgium, p. 46</p> <p><u>Additional information:</u> http://www.dewereldaanjevoeten.be/</p>	Belgium
Development of the System for Disclosure and Education of the Young Researchers (pupils), Lithuania, 2009-2011	<p>In 2009, Lithuanian Youth Information and Technical Creativity Centre with Lithuanian Centre of Young Naturalists (project partner) began to implement the project „Development of the System for Disclosure and Education of the Young Researchers (pupils)“, financed by European Social Fund and Lithuanian Republic state budget. The project will last until 2011. This project seeks to create an effective non-formal science and technology education and training system, aid to develop the scientific approach, the creativity of young people, to disclose and develop talents. Also, it is especially important to develop the qualification of the teachers, who could lead the young people to scientific research. The project has three main goals and activities. One of them is to establish the young researchers consulting centre, which would provide the aid for young researchers to communicate with the experienced researchers and as well to create the info base of the young researchers' research works. Another goal is to create good conditions for teachers to work with young researchers and to improve their skills of researching. Third goal is to bring together young researchers. While implementing this project, non-formal summer school for young researchers is organised. During the lectures and workshops, pupils are learning about creative thinking, visiting labs of physics, biomedical sciences and technology, improving research skills. This project covers all Lithuanian schools.</p>	<p><u>Source:</u> MASIS Report Lithuania, p. 27</p> <p><u>Additional information:</u> http://www.jaunasis-tyrejas.lt/</p>	Lithuania



<p>EARTHWAKE – European Television - a workshop to prepare a new agenda for science communication, 2007-2011</p>	<p>The EARTHWAKE project involved a consortium of four members and funded a two-day workshop in November 2007, bringing together TV executives, scientists, science communicators, TV writers and producers, advertisers, web designers and the public. The aim of the workshop was to develop recommendations to harness the appeal of popular strands of TV, such as drama, wildlife programmes and sports, to create a new awareness and interest in science. The event attracted a series of high-profile speakers and an audience of about 100 representatives from the media and science communities. The workshop developed a set of 16 recommendations, which the consortium disseminated to the target audience – scientists, TV and new media people, research funders and European research organisations. As result of EARTHWAKE, two of the consortium members have created four new “Science in Society” prizes. EARTHWAKE was a specific support action funded under FP6’s Science and Society programme. The project began on 1/1/2007 and ended on 30/11/2011. Total cost was 64 800 EUR, which the EU funded fully. The project brought together in a two-day event leading European actors, notably TV executives, scientists, science communicators, TV writers and producers. The event also involved the public, advertisers and web designers. They were gathered from 8 to 9 November 2007 in Strasbourg to explore models for European collaboration, how best practice can be spread and how targeted money can act as a catalyst. EARTHWAKE aimed at using the appeal of popular strands of European TV to create a new awareness and interest in science. Unlike science programmes which often address the converted audiences, EARTHWAKE reflected the new philosophy of ‘science in society’, introducing much more science into drama, wildlife programmes and sports, which command huge audiences. Another aim was to bring scientists closer to TV people (executives, producers, writers etc.), bringing the two groups to the same table. The project consisted mainly of a two-day workshop. The workshop was attended by about 100 people, coming from the media sector, science and science communication. The project partners could secure a number of high-profile speakers from the media and science (communication) communities, including representatives from the BBC, the German Screen Writers’ Guild, ESA etc.</p>	<p><u>Source:</u> Tehnopolis group (2012): Sis Case Studies, May 18, first version, pp. 103-104: See data collection specification, section 3.1 in this report.</p> <p><u>Additional information:</u> See source.</p>	<p>International, EU funded.</p>
<p>ECB - European Coordinating Body in Maths, Science and Technology Education, 2011-2014</p>	<p>The project primarily seeks to reinforce the links and partnerships between maths, science and technology (MST) education and the relevant careers within the industry, on a European scale. The ultimate goal is to tackle two related challenges:</p> <ul style="list-style-type: none"> • In addressing young Europeans’ relative disinterest in MST subjects • In developing the skills necessary for filling the 20m high-skilled and 30m medium- skilled MST jobs expected in Europe by the year 2020. The project consortium is formed of a multi-stakeholder partnership of 26 members across 15 European countries, connecting Ministries of Education, business actors (large enterprises, national science platforms, industrial bodies, etc.) and universities. The main coordinating tool for the ECB is the network of schools, brought together in order to index, catalogue and expand business practices to do with attracting young people. The programme also enables schools to try out various practices and evaluates their impact through questionnaires to students and teachers. Through its online presence, the ECB also looks at a series of crosscutting issues as well as providing various multimedia tools and guidelines for good practices and innovation in teaching and teacher training. 	<p><u>Source:</u> Tehnopolis group (2012): Sis Case Studies, May 18, first version, pp. 130-131: See data collection specification, section 3.1 in this report.</p> <p><u>Additional information:</u> See source.</p>	<p>International, EU funded.</p>



<p>ECOSUPPORT Project (Bonus programme), 2011</p>	<p>The winner of the award for the best BONUS+ public engagement activity or product 2011 is GeoDome visualization platform - Stakeholder decision support by scientific communication by BONUS+ ECOSUPPORT project. The BONUS Steering Committee Chair Dr Joachim Harms handed the award to the project's coordinator Professor Markus Meier from the Swedish Meteorological and Hydrological Institute on 24 October at the BONUS Forum 2011 in Gdansk, Poland. The evaluation panel for the award Erik Fellenius (BONUS Steering Committee), Ilkka Herlin (BONUS Advisory Board) and Maija Sirola (BONUS Secretariat) reviewed the entries and concluded the following on ECOSUPPORT's winning entry: "ECOSUPPORT has made a clear investment of time, resources and dedication in the GeoDome visualization platform to provide a new and innovative way to engage meaningfully with the key end-users, allowing visitors to become more receptive of the research on the state of the Baltic Sea under different scenarios of nutrient supply, pressure from fisheries and impact on climate change, and to collect feedback to continue developing GeoDome and to better address the end-user specific knowledge needs and demands of the future."</p>	<p><u>Source:</u> BONUS Baltic Organisations' Network for Funding Science EEIG</p> <p>http://www.bonusportal.org/</p> <p><u>Additional information:</u> http://www.bonusportal.org/</p>	<p>International</p>
<p>European Nanodialogue initiative, with an exhibition at the Pavilion of Knowledge, in Lisbon</p>	<p>A number of initiatives were launched, starting in 2006, to engage the public in two-way dialogue on nanotechnologies and nanosciences in Portuguese society. An example is participation in the European Nanodialogue initiative, with an exhibition at the Pavilion of Knowledge, in Lisbon (2006). The Pavillion of Knowlegde (Pavilhão do Conhecimento – Ciência Viva) is the largest Science Center in Portugal and constitutes the headquarters of the Ciência Viva Association. The contents of the exhibition module were organized in 7 sections; Sections 1, 3 and 4 were defined by freestanding "scenery walls" with graphics, background and explanatory text. Each wall has a characteristic colour uniting the scenery and the exhibits. The rear parts of the walls contained information too: the "agorà" is an open place, which wants to arise curiosity, also from the outside, and to welcoming everybody. In every section, together with the main information, there were comments and opinions on the same topic, so visitors could confront their ideas and opinion with those expressed by scientists, politicians, philosophers and science fiction writers. The central table, representing a space for debate and discussion, gave people the opportunity to "play" with real nano-objects; at the same time the space was also used for science demos, focus groups and small debates. During the display of the exhibition different events were performed, in order to enrich the exhibition module, but also to give visitors the opportunity to be involved more actively into the debate.</p>	<p><u>Sources:</u> MASIS Report Portugal, p. 16.</p> <p>NANO DIALOGUE Enhancing dialogue on nanotechnologies and nanosciences in society at the European level, Final report: p. 20-37. Available at: http://cordis.europa.eu/documents/documentlibrary/102583451EN6.pdf</p> <p><u>Additional information:</u> http://cordis.europa.eu/documents/documentlibrary/102583451EN6.pdf, p. 35-37.</p>	<p>Portugal</p>



Galathea 3, nine month worldwide scientific expedition, Denmark	<p>The nine month worldwide scientific expedition of Galathea 3 is the most prominent example of successful science communication in Denmark in recent years. Galathea 3 was a large scale collaborative project, planned and implemented by The Danish Expedition Foundation, which is a commercially operating foundation established by the Ministry of Science, Technology and Innovation. The Danish Expedition Foundation raised funds for the expedition through government grants and donations from private foundations and enterprises. Galathea 3 carried 71 scientific projects, out of which most were natural science projects. On its sea route, the expedition ship visited Greenland, South Africa, Australia, Chile and the United States among others.</p> <p>Besides being a large scale science expedition, the purpose of Galathea 3 was to provide a boost for the recruitment of new scientists in the future. With a satellite link from the research ship directly to classrooms, students were able to watch scientists work during the expedition. Galathea 3 was extensively covered by Danish media, and referring selected results from a survey of 924 people, 83% had heard of the expedition, 58% had followed the expedition continuously in Danish media, and 32% of parents interviewed had talked with their children about the expedition.</p>	<p><u>Source:</u> MASIS Report Denmark, p. 35</p> <p><u>Additional information:</u> http://www.galatheaa3.dk/uk</p> <p>http://virtuelgalathea3.dk/</p>	Denmark
NECOBELAC – 2009-2012	<p>NECOBELAC – Network of collaboration between Europe and Latin American Caribbean countries to spread know-how in scientific writing and provide the best tools to exploit open access information in public health. NECOBELAC is a 3.5 year project involving a consortium of six members from Italy, Brazil, Colombia, the UK, Portugal, and Spain. The project aims at spreading knowledge on methods of scientific writing and publishing and on appropriate tools for open access dissemination of public health information. It does so by developing a ‘train-the-trainers’ strategy in scientific writing and open access. These courses are attended by professionals already involved in scientific publication and open access publishing, who then replicate courses locally. Eight ‘train-the-trainers’ courses have been carried out by the consortium, which produced 34 replication activities so far, involving 200 institutions in 15 countries. NECOBELAC is a coordination action funded under FP7’s SIS programme. NECOBELAC works in the field of public health and aims at improving scientific writing, promoting open access publication models, fostering technical and scientific cooperation between Europe & Latin American Caribbean (LAC) countries. The NECOBELAC project centres on training activities in scientific writing and open access publishing. NECOBELAC partners develop, organise, and teach courses for professionals in European and LAC institutions (‘train-the-trainers’ courses). These professionals then replicate the courses in their own countries and the NECOBELAC project has as its main target audiences public health institutions, editors, librarians, authors and information specialists in Europe, Latin America and Caribbean countries. NECOBELAC acts mainly through training activities. The ‘train-the-trainers’ courses are three-day training courses targeted at professionals already involved in scientific publication and open access.</p>	<p><u>Source:</u> Tehnopolis group (2012): Sis Case Studies, May 18, first version, p. 77: See data collection specification, section 3.1 in this report.</p> <p><u>Additional information:</u> See source.</p>	International, EU funded
RIMAS – Promoting Inquiry in Mathematics and Science	<p>The aim of PRIMAS is to promote the use of inquiry-based learning (IBL) within science and mathematics education. It will develop this pedagogy through relevant teaching materials and guidelines for classrooms and professional teacher training courses, to then be disseminated throughout Europe on a large scale.</p>	<p><u>Source:</u> Tehnopolis group (2012): Sis Case Studies, May 18, first version, p. 141:</p>	International, EU funded.



<p>Education Across Europe, 2010-2013</p>	<p>Where PRIMAS really stands out from other projects in this area is in the variety of stakeholders it works with – including policymakers, school leaders, teachers and parents – in order to engender a supportive environment for IBL and encourage its wider application at the grassroots level. The project is compelled by the hypothesis that relevant groups at multiple levels must be given adequate support before a change in attitude can be realised in order to spread IBL. As such, the approach is broadly supported by research that shows that the uptake and rise of new teaching and learning pedagogies significantly depends on contextual factors, including parents’ personal reactions; how available cooperative networks are for stimulating the approach; and the relevant assessment practices (i.e. school examinations and syllabi). The systematic and reasoned approach taken up by PRIMAS thus seeks to tackle all three of these areas in generating ground support and better promote and disseminate IBL for a lasting impact on Europe’s future scientists, engineers and inventors. The project’s multi-level dissemination plan thus includes the following: Support and professional development for teachers and teacher trainers, selected materials for professional development and direct classroom use, actions for introducing and promoting teachers’ uptake of IBL, methods for working with out-of-school parties (e.g. local authorities, parents...), methods for disseminating activities and information to multiple layers of society, contextual analyses on IBL implementation, aimed at gaining political support, evaluation and feedback on the project’s own validity and effectiveness Ultimately, the goal is to enable more students across Europe to experience scientific inquiry first-hand in order to improve their perception of what STEM subjects (and careers) really entail. This is rightly viewed as an important factor in preparing Europe for a competitive future; inspiring and encouraging ever more young people to pursue top-flight careers within STEM disciplines as a viable source of future growth. Alongside the various components of the multi-level dissemination plan (outlined above), PRIMAS provides a course of direct professional development for teachers, conducted over an intensive two-year period. This training is implemented via a multiplier model, which involves 20-25 ‘multipliers’ within each participating country to be trained in IBL techniques so that they, in turn, will train other teachers and disseminate their knowledge and skills to an ever-larger population. Beyond this, each partner carries out their own dissemination activities via various events (like conferences, workshops, students’ days...) involving teachers, politicians or other stakeholder groups. Consortium-wide international conferences also take place as a further way to disseminate the findings and values of PRIMAS and stimulate wider support and publicity for its activities.</p>	<p>See data collection specification, section 3.1 in this report.</p> <p><u>Additional information:</u> See source</p> <p>http://www.primas-project.eu/en/index.do</p>	
<p>Project, 'The sky as a gift', Croatia, 2004-2009</p>	<p>„The Sky as a Gift” is an educational project that enables students of primary schools to meet the ways of scientific reasoning (methods) through astronomy. This educational project trained teachers introducing scientific literacy, and enabling them to bring children closer to the world of science through astronomy. The project involved actively more than 1530 students, 193 teachers from 166 schools across the Republic of Croatia. The project was organized by non-profit NGO “Znanost.org” in partnership with other organisations like the “Physical Society Split”. Schools that are engaged in the project were borrowed</p>	<p><u>Source:</u> MASIS Report Croatia, p. 33</p> <p><u>Additional information:</u> http://nebo.znanost.org/joomla/index.php?lang=en</p>	<p>Croatia</p>



	small research telescopes free of charge. The awards for the best students and schools are also organised and the winners receive the telescopes, summer schools attendance, etc.		
Renewable energy technologies - Rali Solar, 2005, Portugal	This nationwide school project, active since 2005, is based on a partnership between EDP, Portugal's main electricity provider, the Museum of Electricity and the Ciencia Viva Agency, with the scientific support of both LNEG (Laboratório Nacional de Energia e Geologia) and SPES (Sociedade Portuguesa de Energia Solar). The project engages secondary school students' teams all-round the country in the design and manufacture of prototypes of self-renewing powered devices. The educational agenda stresses the importance of renewable energy technologies, addresses both environmental concerns and related climate change issues and focuses on the challenge of maintaining a secure supply of energy while simultaneously reducing emissions of carbon dioxide. Teachers receive specific training from scientists from LNEG in science museums and centres close to the schools involved. In terms of scale the project consists of: 356 teams (each producing its own device within a school science project); 215 schools and more than 1000 students competing at a final event, which took place in Lisbon, 15th May 2010.	<p><u>Source:</u> MASIS Report Portugal, p. 33.</p> <p><u>Additional information:</u> http://www.ciencia.viva.pt/ralisolar/</p>	Portugal
Science Municipalities project, science education and local enterprises interaction, 2008-2011, Denmark	Science Municipalities involves the private Lundbeck Foundation and the independent organization Danish Science Communication (DNF), and aims at making the strategy for science education in schools interact with the strategy for development of local enterprises. The Science Municipality project was a national three-year project aimed at improving conditions for science education in 25 Danish municipalities. The project was a part of the national strategy for development of science education and was funded by the Ministry of Children and Education. After being informed about the project, about half of all 98 Danish municipalities expressed their interest in the project and finally 25 of them were engaged in the project with acceptance from the local political leaders. This meant that 1/3 of all Danish pupils were affected by the project. The purpose of improving conditions for science teaching was to increase pupils' interest in science and technology in order to inspire more pupils to pursue a science profile during higher education and hopefully beyond. Experiences from the pilot project, stressed the importance of establishing precautions to ensure that the development was not just temporary and limited to the project period. Based on these lessons, the focus on ensuring a sustainable progression was a great concern in the Science Municipality project, and elements, constructed to support permanent effects of the effort, constituted the project model. The overall idea with implementation of the model was to increase the utilization of existing science education initiatives and resources, more than it was an effort to initiate many new costly projects. The Science Municipality project was based on a model consisting of elements establishing supportive conditions and networks on several levels in each Science Municipality. The main core in this model was the link between the different networks of stakeholders either directly or indirectly involved in science education.	<p><u>Sources:</u> MASIS Report Denmark, p. 39.</p> <p>"Science Municipalities – education for growth Experiences and recommendations from the Science Municipality project 2008-2011" (http://www.ind.ku.dk/projekter/science_kommuner/Science-kommuner_-_engelsk.pdf)</p> <p><u>Additional information:</u> http://danishsciencefactory.dk/our-projects</p> <p>http://www.formidling.dk/sw7986.asp (in Danish).</p> <p>http://www.ind.ku.dk/projekter/scienc</p>	Denmark



		e_kommuner/Science-kommuner_-_engelsk.pdf	
Science, Technology and Engineering Programme for Schools (STEPS) by Engineers Ireland (the society of professional engineers)	Engineers Ireland (the society of professional engineers) runs a programme for schools called Science, Technology and Engineering Programme for Schools (STEPS). STEPs supports primary school teachers in doing engineering projects in the classroom, supplying them with activity packs, kits and competition prizes. They also run an annual seminar for secondary school girls about women in engineering. The STEPs homepage provides information about engineering and math to both students, ages 7-11, 12-15 and 16-18, and teachers. The information includes math video tutorials, information about activities and courses aimed at parents and guidance counsellors.	<u>Source:</u> MASIS Report Ireland, p. 30. <u>Additional information:</u> http://steps.ie/	Ireland
SET-ROUTES, A pan-European women ambassadors programme, 2006- 2008	SET-Routes was a specific support action that started in 2006 and ran for 30 months. The aim of SET-Routes was to reach young people (girls but also boys) and provide them with inspirational role models of women scientists and engineers in order to raise their awareness and interest for careers in science. SET-Routes set out a very innovative approach to promote role models at the European level as well as the programme encompasses four key actions: An international conference on women in science – The Way Forward; the School Ambassadors Programme; the University Ambassadors Programme; and the Insight Lectures.	<u>Source:</u> Tehnopolis group (2012): Sis Case Studies, May 18, first version, pp.3ff: See data collection specification, section 3.1 in this report. <u>Additional information:</u> See source. http://www.set-routes.org/	International, EU funded.
Sparkling Science - a programme to bring scientists and young people into contact, (several projects), 2007-2017, Austria	Sparkling Science is a programme to bring scientists and young people into contact. School children participate in research processes and communicate the research results to the public. Such collaboration can happen, for example, in the form of jointly conceived high school theses, A level projects and degree dissertations or as part of cross-curricular school projects. In the first phase of the programme different formats are explored, while later on successful models shall be implemented. The programme is supposed to run for 10 years (2007 to 2017) with a planned annual funding of 3 million Euros. So far, more than 150 projects have been initiated. From 2007 until 2011, in addition to the funding of big research projects, the Federal Ministry of Science, Research and Economy also provided funds for excellent and innovative school research projects in the framework of which schools wanted to actively support current research activities of scientists. The 30 highest scoring projects received awards as well as research prizes of up to 5,000 euros each. The aim of this second, smaller funding track of the programme was to support projects in which schoolchildren, teachers and researchers worked together directly and carried out investigations together.	<u>Source:</u> MASIS Report Austria, p. 40 <u>Additional information:</u> www.sparklingscience.at http://www.sparklingscience.at/_downloads/facts_figures.pdf	Austria



<p>Technique at school for the 21st century” (2008-2010), Belgium (science education)</p>	<p>The project “Technique at school for the 21st century” (2008-2010) is a cooperation between the Department of Science and the Department of Education of the Flemish government. It aims at enhancing interest in science and technology (and more particularly in technical education) from an early age onwards. In this context it should be noted that technical education in Belgium is less valorised because there is an informal cascade system in the educational field in which general education has the best reputation, technical education is less highly esteemed and vocational training is the least preferred. Middle class children are overrepresented in general education, while lower class children are overrepresented in technical and vocational education. An important reason for this is early tracking (at the age of 12-13 years a choice between one of the three forms of education is made by or on behalf of youngsters).</p>	<p><u>Source:</u> MASIS Report Belgium, p. 45.</p>	<p>Belgium</p>
<p>The Science bus “Suur Vanker” (‘Big Dipper’), organised by the Estonian Physical Society, Estonia plus similar concept 'nanoMiracles - on the move' programme in Hungary and Movilab - a mobile laboratory, Spain</p>	<p>Estonia: The Science bus “Suur Vanker” (‘Big Dipper’), which demonstrates interesting physical experiments, has had the biggest success and visited more than one third of all schools in the country. The concept is built on the idea to bring physics and science closer to students (to schools) and to provide attractive science shows and experiments. Positive feedback was received from both pupils and parents, proving that the initiative had a positive impact on how people view physics. The science bus and its team, which is composed of physics students from the University of Tartu and from the Estonian Physical Society, got the European Descartes Prize for Science Communication in 2006</p> <p>Hungary: A recently launched program „NanoMiracles – On the move“ is a mobile interactive nanotechnology exhibition in Hungary. A special bus was prepared for this exhibition that can go to any part of the country. The visitors can receive live presentations from specially trained demonstrators. The projects main objective is to reach out to the general public in the country and raise awareness of potential benefits of nanotechnology by demonstrating the state of the art nanotechnology products and applications in an interactive moving exhibition. The visitors of „NanoMiracles - on the Move” will receive live presentations from specially trained demonstrators. The projects main objective is to reach out to the general public in the country and raise awareness of potential benefits of nanotechnology.</p> <p>Spain: Movilab: Mobile laboratory set up in the trailer of a lorry with scientific experiments for young students and the general public. Action carried out in collaboration with CSIC and the Padrosa Foundation. Science Fair Sociedad Andaluza para la Di- vulgación de la Ciencia (SADC): Travelling game based Fair with exhibitors and the participation of schools. It started 7 years ago.</p>	<p><u>Sources:</u> MASIS Report Estonia, p. 26 and 35. MASIS Report Hungary, p. 28. MASIS Report Spain, p. 45. <u>Additional Information:</u> Science bus: http://www.teadusbuss.ee/teadusbuss/avaleht Movilab: http://www.proyec tomovilab.es/</p>	<p>Estonia Hungary Spain</p>



<p>TWIST – Towards Women In Science and Technology 2010-2013</p>	<p>TWIST brings together a set of activities and exhibitions organised in science centres and designed to highlight and challenge gender stereotypes. Actions are based on the idea that the neglect of the gender dimension of research has implied that the share of women in research is extremely low. Research shows, for example, that more boys than girls visit science centres. Women are therefore victim of social representations and the bias starts very early, meaning that actions have to be undertaken to restore self-confidence and interest in science at the youngest age. TWIST’s objective is to overcome the gender stereotypes that undermine girls’ confidence in choosing a career as a researcher, mainly by including a gender dimension in the design of exhibits in science centres. Taking into consideration gender mainstreaming in exhibitions and activities should lead to widen the base of visitors and contribute to encourage a wider interest in science, especially among girls. The range of activities undertaken by the project partners is very diverse and targets both the general public and schools (i.e. young people, parents and teachers,). Activities at the level of science centres have in common to foster dialogue with citizens, and involve lectures, debates with citizens, workshops, interactive drama, teacher training, meetings with women scientists (‘speed-dating’), special events like White Nights on science and gender, etc.</p>	<p><u>Source:</u> Tehnopolis group (2012): Sis Case Studies, May 18, first version, pp. 25-26: See data collection specification, section 3.1 in this report.</p> <p><u>Additional information:</u> See source</p>	<p>International, EU funded.</p>
<p>UPDATE – Understanding and Providing a Developmental Approach to Technology Education, 2007-2009</p>	<p>UPDATE105 was an EC call project funded under FP6 as a specific support action. It ran over three years between January 2007 and December 2009. The purpose of the project was to improve science and technology teaching in Europe in order to make technology more attractive to young people. In particular, this goal arose in order to address the shortage of girls involved in technology, which was recognised as a problem and something of a curiosity for developmental psychologists. What was original and innovative about UPDATE was its focus on early childhood and primary education (i.e. before age 12), within which the biggest impact might be achieved in terms of shaping attitudes sustainably to raise interest in technology at secondary or later stages. At the age of 16 or over, it would be too late for many young men and women to begin thinking about a career in technology, since much of their attitude would already have become fixed. As such, UPDATE’s aim was threefold:</p> <ul style="list-style-type: none"> • To examine why girls drop out from technology education at various stages • To envisage new educational methods for making technology (and technological careers) more attractive for both girls and boys • To promote, encourage and mobilise young people (although especially girls and young women) at various ages for careers in engineering and technology and an improved understanding of the subject, as a whole <p>As such, the project took a holistic approach and covered new ground in trying to identify the very earliest predictors of career choice and design interventions to better promote technology in schools, teacher training centres and businesses. The approach taken was to promote a deep understanding through the partners’ expertise and collect it through various pilot cases and an online ‘wiki’ for expanding communication.</p>	<p><u>Source:</u> Tehnopolis group (2012): Sis Case Studies, May 18, first version, pp. 149-150: See data collection specification, section 3.1 in this report.</p> <p><u>Additional information:</u> See source.</p>	<p>International, EU funded.</p>



Vienna open lab project, Austria, 2006-	The Vienna Open Lab, is a biomolecular hands-on laboratory organised by dialog<>gentechnik, which offers access to practical work in life sciences for children, young people and adults. Under the supervision of young scientists, small groups of visitors have the opportunity to perform experiments in molecular biology, thereby getting insights into everyday life in a lab and entering into discussions on various aspects related to the biosciences. After a test-run the lab was officially opened in 2006 and since then has welcomed more than 15.000 visitors. The Vienna Open Lab is located at the Campus Vienna Biocenter, i.e. amidst 'real-world' lecture halls, laboratories and spin-offs. The Vienna Open Lab also organizes Summer Science Camps for children interested in the natural sciences.	<u>Source:</u> MASIS Report Austria, p. 38. <u>Additional information:</u> www.viennaopenlab.at	Austria
"Young Inventor Programme", Montenegro	Even though it is not strongly considered yet by the government, there is great interest from the Ministry of Education and newly formed Ministry of Science for the "Young Inventor Programme". It represents a bottom-up process generated by individuals to create a climate for innovative actions of young people that can affect future science and research programmes and even, in the long run, the country's general economic state. This could be one of the positive examples of this bottom-up approach that the government could use in future science and research strategies. The objectives of the programme are: 1. To bring student inventions to successful conclusion. 2. To develop their knowledge and skills in the process of invention. 3. To utilize the scientific and practical knowledge that students possess to produce original inventions of practical benefit to themselves and others. 4. To strengthen the confidence of students in their ability to make their ideas become reality.	<u>Source:</u> MASIS Report Montenegro, p. 13.	Montenegro
ASTEP (Accompaniment in S&T at primary school, Accompaniment en Sciences et Technologies à l'Ecole Primaire, France (science education)	ASTEP (Accompaniment in S&T at primary school, Accompaniment en Sciences et Technologies à l'Ecole Primaire) is a government program for scientific education in the primary school, with the help of scientists and students. The program aims to connect the school with the world of scientists, to make accessible science to a young public, to develop scientific disciplines and create vocations, to encourage experimentation and acquire new knowledge. It proposed activities may involve several areas (astronomy, biology, ecology, energy, mechanics) and organizes training for teachers who want to acquire teaching skills in science.	<u>Source:</u> MASIS Report France, p. 30.	France
Discover Primary Science programme, Ireland (science education)	Discover Science and Engineering (DSE) is a government initiative that aims to increase interest in science, technology, innovation and engineering. DSE's Discover Primary Science is a programme which aims to promote science to primary school children, parents and teachers. It facilitates teacher training in general primary science, and provides teachers with online resources and classroom activity packs. Just over 3,100 primary schools and their teachers are currently participating in activities which include hands-on induction days which are hosted throughout the country in colleges of education, institutes of technology, universities and education centres.	<u>Source:</u> MASIS Report Ireland, p. 30.	Ireland



<p>'La main à la pate', France, (science education)</p>	<p>An educational program of Canadian origin, "La main à la pate" provides assistance in the field of science and technology for nursery and elementary school. The program was launched in 1996. The aim was to teach science and technology in primary school by an approach based on an experimental investigation.</p>	<p><u>Source:</u> MASIS Report France, p. 30.</p> <p><u>Additional information:</u> http://www.lamap.fr/</p>	<p>France</p>
<p>Haus der kleinen Forscher (Little researcher's house), Germany (science education)</p>	<p>Haus der kleinen Forscher is initiated by the Helmholtz-Gemeinschaft (Helmholtz Association), McKinsey & Company, Siemens Stiftung (Siemens Foundation) and Dietmar Hopp Stiftung (Dietmar Hopp Foundation) and supported by the BMBF. It seeks to bring science education to pre-schools by organising training workshops, establishing a network between schools and educators and by supplying teaching materials for conducting scientific experiments at school. It tries to raise children's curiosity and enthusiasm for natural sciences and technology and sees learning as a shared process between children and educators. Local networks of participating schools facilitate the individual activities, and a magazine, launched in 2011, provides latest information to educators. Schools which participate for a longer time can enter the competition for the "Haus der kleinen Forscher" Award. In 2011, an additional 5,000 pre-schools and 3,000 all-day schools are expected to join the initiative, summing up to a total of 20,000 pre-schools with more than 500,000 children and more than 25,000 educators trained by the programme. From 2011, the Federal Ministry for Education and Research provides an additional 2 million euros per year to include children between 6 and 10 years of age.</p>	<p><u>Source:</u> Masis report Germany p. 70.</p> <p><u>Additional information:</u> http://www.haus-der-kleinen-forscher.de.</p>	<p>Germany</p>
<p>ILMARI project, Finland, 2002-</p>	<p>Supporting critical debate and reflection per se about science society issues is not among Finnish strengths. However, there are interesting new approaches such as ILMARI, a climate change and energy information project that aims to enlighten primary, secondary and high school students and teachers about climate change and their role as human beings; young people shall be involved in conversations and receive support in their projects. During five years, there have been over 800 school visits all over Finland. 30 000 students have heard about their issues and there has been training for two hundred volunteer climate envoys. According to the evaluation report in spring 2005, school visits have been successful in strengthening young people's awareness. 38% of secondary school students and 18% of middle school students have become more aware about the climate situation. Half of the students considered themselves to be informed enough to work against the climate change. Since then, experiences from this project have been used in other school visiting projects due to the successful concept of Ilmari and how NGOs work together).</p> <p>The Ilmari project has been financed by the Ministry of Trade and Industry under the Finnish Climate Change Communications Programme 2002-2007. Ilmari project has won several energy and climate change communication prizes. Currently the school envoy activity developed within the Ilmari project continues as an established part of the activity of the organizations that were involved in the Ilmari project. According to an evaluation of the Ilmari project, one of its main success factors was "peer group communication", in other words, school pupils have found it</p>	<p><u>Source:</u> MASIS Report Finland, p. 35-36)</p> <p><u>Additional information:</u> http://www.energychange.info/casestudies/159-case-study-5-ilmari</p>	<p>Finland</p>



	easy to listen to the messages from young NGO members who worked as the climate envoys.		
Komm-mach-MINT (Come on, join MINT) and Girl's Day are two initiatives with the goal to attract girls and young women to study MINT subjects, (plus other MINT initiatives) Germany	Komm-mach-MINT (Come on, join MINT) and Girl's Day are two initiatives with the goal to attract girls and young women to study MINT subjects or to consider a professional position in this area. Around 700 individual projects have been launched until 2010 and have attracted around 90,000 girls and young women. The National Pact for Women in MINT professional areas aims at changing the image of MINT professions, at fascinating girls and young women for natural sciences and engineering and at empowering women educated in MINT disciplines to go for careers in science and economy. Targeted measures are offered to reach these goals, in particular at the interfaces between school and university as well as between university and occupation. The MINT Zukunft schaffen (MINT Create the Future) initiative seeks to stimulate school children's (secondary schools) and students' interest in MINT subjects (Mathematics, Informatics, Natural sciences, Technology) and to develop quality and quantity of teaching in these areas at schools and universities. Initiated by German companies and industry associations in 2007 for a six-year period, the MINT activities aim at satisfying the recognised demand in skilled personnel in technology-oriented industry sectors, to increase the number of women working in these areas, and to increase the number of successful students in MINT subjects at universities. Activities include internships, pre- university classes, workshops, awards, and competitions. Examples of MINT activities (996 activities listed in February 2010): MINToring (scholars accompany students): In this programme, scholars from university accompany students at schools during the last three years of school. The idea is to give students insight into studying the MINT subjects Mathematics, Informatics, Natural sciences or Technology (engineering). 655 school children and students have been supported by the MINToring programme in 2010. In the related school children's academy programme which provides orientation to school children in identifying appropriate vocational training opportunities, 18 project schools with 328 school children were participating.	<u>Source:</u> MASIS Report Germany, p. 71. <u>Additional information:</u> http://www.komm-mach-mint.de www.komm-mach-mint.de/content/download/1324/ http://www.sdw.org/schuelerakademie/mintoring	Germany
LUMA project, Finland	LUMA project by The Finnish National Board of Education (FNBE) under the Ministry of Education has been on-going since 1996. LUMA is a national level programme supporting vocational and comprehensive education of mathematics and natural sciences. The project provides additional materials, web-based educational services and connections between schools, university personnel, policy makers and industrial organisations. Attracting girls in the issues of mathematics and natural sciences is among the special targets of the project.	<u>Source:</u> MASIS Report Finland, p. 34.	Finland



<p>Physics-Business-Politics-Technology”, Romania, 2005-</p>	<p>A one day meeting organized every two years at the Parliament of Romania (held for the first time in 2005, the International Year of Physics) by the „Horia Hulubei” National Institute of Physics and Nuclear Engineering, together with the Commissions for Education, Science Youth and Sports of both Chambers of the Parliament. Called FAPT, meaning „fact” in English but used as an acronym for „Physics- Business-Politics-Technology”, the meeting joined every time scientists (not only physicists), representatives of the private sector, high-tech people and politicians. Each time the meeting had a central theme, which this year was „The Offer of Physics”. The idea was for Physics to be ready to adapt its strategy to the actual needs of Society in Romania as well as of the concerned domains of the national economy. The year 2010 was considered as a good „time for choosing”, due to recent important developments in physics in Romania, related to the country becoming formally a candidate for CERN membership and being awarded the construction of the ELI Nuclear Physics Pillar. Gathering together some of the most important people in the country with decisional power in funding, deciding and approving the necessary actions for the near and medium future and, by no means least, having an important word to say in the organization of the Romanian educational system, has already proved essential in taking the next steps to be taken. In a time of complicated financial conditions, putting together the interests of the scientific community and the general needs of the society is the only way to establish a reasonable way ahead.</p>	<p><u>Source:</u> MASIS Report Romania, p. 41.</p>	<p>Romania</p>
<p>Students in Research (MERA), Cyprus (Science education)</p>	<p>The basic aim of this programme is to familiarize students of the primary and secondary education of Cyprus with the scientific research procedures. In particular the programme aims to help students learn the essence and the order of steps in a research work, understand the concepts of „theory”, „research question”, „experiment” and „variables”, learn how to write and present a scientific work, learn how to find research information, engage in the concept of team work, develop their communication skills and their critical thinking, execute a research budget, and cultivate their skills and talents. Research teams comprise of one to five students, a teacher –coordinator, as well as an experienced researcher from a Cyprus research institution. It should be noted that the Research Promotion Foundation provides teachers participating in this programme with special training after the launch of the competitions.</p>	<p><u>Source:</u> MASIS Report Cyprus, p. 39.</p>	<p>Cyprus</p>
<p>Technology and Innovation in Education (TEKE), Cyprus (science education)</p>	<p>The basic aim of this programme is to familiarize students of the primary, secondary, higher and technical education of Cyprus with the scientific innovation procedures. The main aim and objectives are similar to the MERA project discussed in the previous paragraph, but geared towards innovation processes.. In particular the program aims to help students learn the essence and the order of steps in an innovation process, learn how to write and present an innovation work, learn the societal benefits of innovation works, learn how to find innovation-related information, engage in the concept of team work, develop their communication skills and their critical thinking, execute an innovation project budget, and cultivate their skills and talents. Research teams comprise of one to five students, as well as a teacher – coordinator. As in the case of the „MERA” Competition, the Research Promotion Foundation provides teachers participating in this programme with special training after the launch of the competitions. In addition, prizes for the winners of the</p>	<p><u>Source:</u> MASIS Report Cyprus, p. 39.</p>	<p>Cyprus</p>



	Competitions are used for educational activities by the respective schools.		
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Mechanism	Description	References	Country
New social media			
Twitter is used to inform the public about events and insights (for example SIRUS - about drug research, Norway)	New social media, such as various blogs, Facebook, Twitter and podcasts have enabled new types of citizen information and involvement. Twitter is used to inform the public about events and insights	<u>Source:</u> MASIS report, Norway, p.17. <u>Additional information:</u> http://twitter.com/rusforskning (about drug research)	Norway
Universities offer video podcasts of lectures through iTunes, Norway	Universities offer video podcasts of lectures through iTunes (for example NTNU).	<u>Source:</u> MASIS Report Norway, p. 17. <u>Additional information:</u> http://wiki.math.ntnu.no/tma4105/2009v/podcast	Norway

Mechanism	Description	References	Country
Science competition (primarily young people)			
Contest for young inventors, Latvia, 2010	Inventors' Day and Contest for young inventors was organised in December 2010 for the first time in Latvia. The aim of this event was to popularise inventing activities among the general public and especially youngsters, and to motivate for commercialisation of inventions and new ideas. During the Inventors' Day the exhibition of new technologies, prototypes and products developed by Latvian enterprises and research institutions took place as well as discussion forum and contest for youngsters were organised. The aim of the Contest was to use the knowledge obtained in the discussion forum to find solutions for certain problems (within two hours) which could meet the needs of society.	<u>Source:</u> MASIS Report Latvia, p.41.	Latvia



Contest of science dissemination activities for pupils and teachers, Spain	Ciencia en Acción: Contest of science dissemination activities. Many pupils and teachers participation. Related to an international competition. Annual international contest started by Sociedad Española de Física, currently organized by several institutions.	<u>Source:</u> MASIS Report Spain, p. 46. <u>Additional information:</u> http://www.cienciaenaccion.org/	Spain
Debating Science Issues, contest for second-level school students, Ireland	Debating Science Issues is an initiative of eight scientific research centres in the cities of Dublin, Cork and Galway, supported by a science centre in Belfast, Northern Ireland. It involves hundreds of second-level school students in debates about current issues in science, particularly on topics with strong social and ethical dimensions, such as stem cells, nanotechnology, influenza vaccination and genetically modified foods. Started in 2007 with funding from the Wellcome Trust, the annual competition includes qualifying events in the four provinces and the finals in the Science Gallery. The sponsoring research centres provide scientific briefings and workshops on the chosen topics, including a workshop on bioethics. Participants learn skills in handling complex scientific information and in ethical reasoning. Over 500 students in 40 schools took part in workshops in the 2010 competition and 350 went on to form debating teams and compete. Additional funding has been secured to maintain the competition in the coming years.	<u>Source:</u> MASIS Report Ireland, p. 29. <u>Additional Information:</u> http://www.clarity-centre.org/content/debating-science-issues	Ireland
Energy Efficiency Project competition for high school students and Turkish Astronomical Society Telescope Building Competition, Turkey	One of the recent interesting project competitions among secondary education students is the Energy Efficiency Project Competition for High School Students. TÜBİTAK organizes this competition annually with the collaboration of General Directorate of Electrical Power Resources Survey and Development Administration. Turkish Astronomical Society Telescope Building Competition: The competition is organized with the aim of promoting interest in astronomy among all age groups.	<u>Source:</u> MASIS report, Turkey, pp. 41, 53.	Turkey
EUCYS 2011 – European Union Contest for Young Scientists	The 23rd ‘European Union Contest for Young Scientists’ (EUCYS 2011) was held in Helsinki between the 23rd and the 28th September 2011. The Contest is an annual event that first began in 1989 and has been hosted each consecutive year by a different European city. Under FP7, each Contest currently receives a maximum of €600,000 of EC funding, on top of further private investments from various partners. The prime goals of EUCYS are to promote scientific interchange between young researchers in Europe and guide them into future careers at the forefront of science and technology. The events are coordinated as exhibitions showcasing the best research young Europeans (aged 14-21) have to offer, as selected within their home countries. The best nine are then awarded one of the Contest’s core prizes of €7,000, €5,000 or €3,500, corresponding to three first prizes, three second and three third. A final core prize for international cooperation (worth €5,000) has been introduced since 2008 and belongs to guest participants from non-EU countries hosting their stalls alongside the EU candidates (previous winners include New Zealand, Brazil, and USA). Further prizes also offer honorary trips to youth science fora or include select work placements within partner institutions (such as the European Patent Office or the	<u>Source:</u> Tehnopolis group (2012): Sis Case Studies, May 18, first version, pp. 134-136: See data collection specification, section 3.1 in this report. <u>Additional information:</u> See source.	International, EU funded.



	<p>EIROForum) for outstanding participants within specific areas of research. Overall, the Contest covers various scientific disciplines including physics, chemistry, biology, medicine, maths, engineering, computing, environment and social science. EUCYS allows outstanding young scientists from all over Europe to: Exchange and debate their ideas and findings in a stimulating, cosmopolitan environment, showcasing them far beyond their home environments, share common interests in different disciplines and relate to international peers in order to form lasting friendships, build their experience through the forefront of research within their age-group, take part in cultural and educational activities within the host country and win exclusive prizes to further stimulate their interest, drive and potential in the future. Ultimately, the activity and interest generated by the Contest helps to embed scientific endeavour, cooperation and exchange within Europe's youth, culture and community as well as identifying and inspiring the bright new scientific minds of the future. Furthermore, it brings together and expands the many activities taking place at national levels, increasing their visibility and impact, adding definite value beyond the domestic level.</p>		
Famelab	<p>Competitions like FameLab are supposed to motivate young scientists to communicate in an understandable and engaging way. FameLab is an exciting competition to find the new voices of science and engineering across the world. FameLab was started in 2005 in the UK by Cheltenham Science Festival and has quickly become established as a diamond model for successfully identifying, training and mentoring scientists and engineers to share their enthusiasm for their subjects with the public. Working in partnership with the British Council this global competition has already seen more than 5000 young scientists and engineers participating in over 23 different countries from Hong Kong to South Africa, USA to Egypt. In the USA, NASA is our FameLab delivery partner.</p>	<p><u>Source:</u> MASIS Report, Austria p. 37.</p> <p>http://famelab.org/</p> <p><u>Additional information:</u> www.famelab.at</p> <p>http://famelab.org/</p>	International
Ideenkanal (and then Ideen camp), Liechtenstein	<p>Ideenkanal (Idea channel): Competition for young people born in or before 1975. The task was to generate any innovative idea (e.g. to start a radio show for showcasing young talents from the region), post the idea on the competition's web site and collect as many votes as possible from readers by advertising the idea on Facebook or Twitter (during October 2010). The proposers of the 16 most voted ideas were then invited to Ide encamp (Idea Camp) at Liechtenstein University in November 2010. After a two more qualification rounds, the 5 most convincing ideas are selected by a group of 25 mentors, which during the two-day event help work on the ideas and prepare realization.</p>	<p><u>Source:</u> MASIS Report, Liechtenstein, p. 19.</p> <p><u>Additional information:</u> http://www.ideenkanal.com</p>	Liechtenstein
Jugend forscht, Germany	<p>Jugend forscht (German contest for young scientists): A very well recognised national competition, initiated in 1965, where school children (up to 14 years of age) and young people (15 to 21 years of age) present projects (e.g. experiments, innovative solutions or products) in seven scientific disciplines. The competition takes place every year and started out as a national competition, but nowadays is organised in three levels (regional, state and national level). For 2011, 10,677 participants have registered 5,707 projects for the competition. Winners of the competition are invited to present their projects at events at</p>	<p><u>Source:</u> MASIS Report Germany, p. 72.</p> <p><u>Additional information:</u> http://www.jugend-forscht.de</p>	Germany



	conferences, trade shows and the media. Winners are also nominated to participate in the European Union Contest for Young Scientists.		
Jugend Innovativ, Austria	Jugend Innovativ is a school competition to encourage innovative ideas in business, design, engineering, science, and environmental protection.	<u>Source:</u> MASIS Report Austria, p. 40. <u>Additional information:</u> www.jugendinnovativ.at	Austria
New Pupils' inventor contest, Estonia, 2008-	In 2008 a new Pupils' inventor contest was established. Pupils can submit their inventions or ideas to the contest and they are evaluated by the evaluation committee. Already in the first year of the contest, 570 works were submitted. The contest has been very popular among the pupils and teachers and it has gained lots of positive media coverage. In 2008 the prize fund was 150 thousand EEK (~10 000 €), in 2009 and 2010 the annual budget is 400 000 EEK (~25 000 €). The contest is organised in cooperation with Archimedes Foundation and AHHA Science Centre. It is funded by the Ministry of Education and Research.	<u>Source:</u> MASIS Report Estonia, p. 26.	Estonia
Research Sprouts, Denmark	"Research Sprouts" - a national competition for secondary school pupils who want to explore science further, initiated by the Ministry of Research as early as 1997. 100 students nationwide can receive guidance from a mentor scientist, and be supported in conducting their research project, in order to be honoured as one of the annual „Research Sprouts“.	<u>Source:</u> MASIS Report Denmark, p. 39. <u>Additional information:</u> http://forskerspiner.ku.dk/english .	Denmark
Robocup, Croatia	The most popular among the young people is the state competition in informatics and the "Robocup" – the competition of young technicians in robotics.	<u>Source:</u> MASIS Report Croatia, p. 33.	Croatia
The BT Young Scientist and Technology Competition, Ireland	The BT Young Scientist and Technology Competition is an annual competition held every January aimed at encouraging interest in science in secondary and primary schools and currently sponsored by telecommunications company BT Ireland. There were 1,588 entries for the 2010 contest. Entries are divided into four categories: biological and ecological sciences; chemical, physical and mathematical sciences; social and behavioural sciences; and technology. The final stage of the competition is an exhibition open to the public of around 500 student projects as well as science and technology based exhibits and entertainment. Winners of the BT Young Scientist and Technology competition go on to compete in the EU Young Scientist Contest. It is a countrywide celebration of mathematics, and aims to help people of all ages to understand more about how mathematics is useful. The competition is for second level students, culminating with an exhibition of selected entries.	<u>Source:</u> MASIS Report Ireland, p. 31. <u>Additional Information:</u> http://www.bt-youngscientist.ie/	Ireland



<p>Tutki-Kokeile-Kehitä (Research-Experiment-Develope) - Finland</p>	<p>Tutki-Kokeile-Kehitä (Research-Experiment-Develope) is a Finnish annual science and technology competition for young people from 6 to 20 years old. Entering projects are on fields of biology, environment, chemistry, geography, life sciences, mathematics, medicine, physics or technology. A project can be an invention, a study, a computer program or a result of a design process. The criteria used to assess the projects are: originality of the idea, practicality of the solution and creativity in the approach to the problem; quality of written report; the age of contestants. Among all entries, the best 15 projects will be selected for an exhibition. The contestants responsible for these selected projects will be invited to Science Centre Heureka to present their work to the members of the jury and the jury members will have an opportunity to interview the contestants. Ideas of a technical nature can in some cases be protected by various means such as patents, copyright and registration of designs or trademarks. If a project seems to have any features worth protecting, the organizers will help the contestants to start the protecting process. The total sum of monetary prizes is 10 000 euro.</p>	<p><u>Source:</u> MASIS Report Finland, p. 35.</p> <p><u>Additional information:</u> http://www.tek.fi/index.php?id=1157</p>	<p>Finland</p>
<p>Viksu the Academy of Finland Annual Science Competition for Senior Secondary Students, Finland</p>	<p>VIKSU Launched in 1998, Viksu the Academy of Finland Annual Science Competition for Senior Secondary Students, is the biggest event of its kind in the country. The aim of the competition is to inspire greater enthusiasm among students in science and in research careers and at the same time to create a stronger basis for a sustained interest in doing science. The Viksu concept is following (see the web link). Entries in the form of essays around 20 pages in length are invited from individuals or a maximum of two partners. The essays may be from any discipline and cover any subject. Each entry is reviewed by two experts, including for instance researchers involved in Academy-funded research projects. On this basis some 20-30 entries are short-listed for a panel review which decides the winners. The panel of experts consists of professors from different disciplines. Prizes are awarded to the ten best entries: the prize money totals around EUR 16,000. In addition, the best-performing schools in the competition get to share prize money worth EUR 8,000. Several Finnish universities grant automatic entry for winning students, provided that their essay is directly related to the field of study for which they have applied and that the student has completed the matriculation examination. The Academy's Annual Science Competition for Senior Secondary Students has now been arranged 12 times. Each year some 120-160 entries are received. Girls have been more active in submitting entries than boys, but the top prizes have been evenly distributed. Entries are received from all disciplines. Last years the best entries have included essays from the fields of biology, physics, history, literature, computer science and philosophy.</p>	<p><u>Source:</u> MASIS Report Finland, p. 35.</p> <p><u>Additional information:</u> http://www2.aka.fi/index.asp?id=DA7E39BAA1664A1DA75AC4B70EF733F3</p>	<p>Finland</p>
<p>Young Scientists Competition, Israel</p>	<p>Among these programs are some of an extra-curricular nature, such as the "Young Scientists Competition," which, in correspondence with the research and development plans of the EU, feeds into the International Science and Engineering Fair sponsored by Intel. Within Israel, the competition is administered by the Bloomfield Museum of Science in Jerusalem.</p>	<p><u>Source:</u> MASIS Report Israel, p. 39.</p>	<p>Israel</p>



<p>Öveges József Physics Competition for students at elementary school plus OTDK for students, Hungary</p>	<p>Öveges József Physics Competition: Wide-ranging and popular student competition at elementary schools. Yearly national competition for students at elementary school. OTDK (National Scientific Student Conference): A „showcase“ and competition of the best students in science and arts, to develop one’s talents. Yearly national competitions for university and high school students in all fields of studies, organized by OTDT (National Scientific Student Council).</p>	<p><u>Source:</u> MASIS Report Hungary, p. 37.</p> <p><u>Additional information:</u> http://www.kfki.hu/education/verseny/oveges/</p> <p>http://www.otdt.hu/index.php</p>	<p>Hungary</p>
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Mechanism	Description	References	Country
<p>Science events (only if they include dialogue-based activities)</p>			
<p>ESOF – EuroScience Open Forum, (Copenhagen 2014 - specific focus on media representatives)</p>	<p>ESOF, the EuroScience Open Forum, is a biennial five-day meeting, which is supported through the European Commission’s Science in Society programme as a non-call action. ESOF events present and discuss the frontiers of scientific and technological research in Europe, contribute to the development of a European scientific identity and help bridge the gap between science and society, stimulating policies to support scientific research. ESOF meetings are both international and multidisciplinary, and include science events and sessions through a range of different formats – both formal and informal. ESOF brings benefits to a wide range of groups, including the host city, participating scientists and industry, as well as to the general public through open events. EC support has been continuous and therefore important in helping ESOF establishing a long-term plan for regular science meetings. ESOF meetings are organised for scientists, young researchers, business representatives, entrepreneurs and innovators, policymakers, science communicators, and the general public across Europe. It is a forum for discussing new discoveries and for debating science and societal questions.</p>	<p><u>Source:</u> Tehnopolis group (2012): Sis Case Studies, May 18, first version, pp. 124ff: See data collection specification, section 3.1 in this report.</p> <p><u>Additional information:</u> See source.</p> <p>ESOF Copenhagen 2014 - specific focus on media representatives – see http://esof2014.org/</p>	<p>International, EU funded.</p>



Mechanism	Description	References	Country
Telethon (S&T fundraising)			
Charity-based fundraising to investigate specific kinds of diseases (biomedical research), Spain	An scenario in which the participation of citizens can influence the course of the investigation, are telethons and charitable events. For example, the Marathon of TV3, a journey that takes place once a year to raise funds to investigate some kind of disease has collected between 1992 and 2009 more than 70 million Euro, which turns it the second source of funding for Catalan biomedical research. In this case the level of public awareness of the campaign, needs and results of research projects is very high since the economic participation is closely related to the perception of the problem.	<u>Source:</u> MASIS Report, Spain, p.22.	Spain

Mechanism	Description	References	Country
Webportals			
Slovenian Biosafety Portal	The Slovenian Biosafety Portal is the central Slovenian website on biosafety with the use and handling of genetically modified organisms (GMOs). On the Slovenian Biosafety Portal, information is provided on the biosafety system (legislation, competent authorities, supervision) in Slovenia, which ensures the protection of the environment and people's health with the use of GMOs.	<u>Source:</u> MASIS Report, Slovenia p. 19.	Slovenia
The Icelandic Web of Science, also q&a with researchers	A first unique and interesting project that is currently going on in Iceland is the Icelandic Web of Science (www.visindavefur.hi.is) developed by the University of Iceland. The target audience are young students and the general public and the objective is to increase interest and participation among young people and the general public in science. The Icelandic Web of Science has been inaugurated in 2000. The Icelandic Web of Science is an accumulative on-line encyclopaedia where the general public is offered to send in questions and receive an answer by experts. In principle this means that the science community does not decide what kind of knowledge is offered - the general public has the power to ask for scientific knowledge in the way they feel it is relevant. Instead of having an article on the ozonosphere explanation is offered by providing answers to specific questions and thus by contextualizing a specific issue. The main emphasis of the Icelandic Web of Science is to facilitate and encourage a dialogue between the scientific community and society at large, in a way where science matters to the individual.	<u>Source:</u> MASIS Report, Iceland, p.33-34. <u>Additional information:</u> http://visindavefur.hi.is/	Iceland



The Royal Academy of Science (KVA) website, Sweden	The Royal Academy of Sciences (KVA) has a special area on their website for issues related to Science in Society. It is said that the academy focuses on important social issue and appraises them from a scientific perspective. To this date there are four issues that are discussed in that manner: Energy, Health, Conditions for research, and Environment and Climate. The academy profits from an independent position and accumulated experience, and can therefore act as an informal advisory board to the public debate and the government's policy process.	<u>Source:</u> MASIS Report, Sweden, p. 18.	Sweden
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4.2 Public activism

– *the aim is to inform decision-makers and create awareness in order to influence decision-making processes.* The formation flow is conveyed in one-way communication from citizens to sponsors but not on the initiative of the sponsors as characterizes the 'public consultation' category.

Mechanism	Description	References	Country
Demonstrations			
Organisation Clean Sea, Bulgaria, protests against the deployment of buoys facilities in the Burgas Bay to build the oil pipeline	The construction of the oil pipeline "Burgas-Alexandropolis": Discussion 'for', and 'against' the pipeline is still led after the initiation of the project in 2007 at the strong response of environmentalists. In 2009 the association "Clean Sea" organized a series of protests against the deployment of buoys facilities in the Burgas Bay to build the oil pipeline. The demonstration was organized alongside the public consultations on the project. According to the organization, the presence of the public from the Black Sea municipalities of rallies and public consultation was extremely important to hear the position of ordinary citizens in this project.	<u>Source:</u> MASIS Report Bulgaria, p. 20.	Bulgaria
UK - e.g. Greenpeace on nuclear power	Greenpeace and Friends of the Earth have both campaigned against nuclear power. Additionally, local communities have campaigned against the building of nuclear power stations and against the storage of nuclear waste in their locality.	<u>Source:</u> MASIS Report UK, p. 25. <u>Additional information:</u> http://www.greenpeace.org.uk/autofrontpage http://www.foe.co.uk/	United Kingdom



Mechanism	Description	References	Country
Ombudsmand			
Freedom of speech by energy researchers at the VTT Technical Research Centre of Finland	The recently occurred public controversies about political pressures on evidence based decision making (see section 1.1) have caused some legal actions, as for instance the Parliamentary Ombudsmand investigating whether the freedom of speech by some energy researchers at the VTT Technical Research Centre of Finland has been illegally restricted by their employer, as claimed publicly by the researchers themselves. The way in which these discussions will continue and how public agencies react on them will be indicative of a cultural transition that may be occurring.	<u>Source:</u> MASIS Report, Finland, p. 20.	Finland

Mechanism	Description	References	Country
Protests			
Youth Defence, Ireland	Citizen groups opposing embryological research and use of embryonic stem cells in biomedical research, e.g. Youth Defence, have a continuing influence on policy, deterring government (if it was minded to take such an initiative) from introducing legislation in this area.	<u>Source:</u> MASIS Report, Ireland, p. 16.	Ireland
Citizen groups opposing the construction of a major waste-to-energy incineration facility in Dublin, Ireland	Citizen groups opposing the construction of a major waste-to-energy incineration facility in Dublin have delayed the project which is the subject of a formal contract between the local authority and an engineering company.	<u>Source:</u> MASIS Report, Ireland, p. 16.	Ireland
Citizen groups protests on genetically modified crops, Ireland	Citizen groups opposing genetically modified crops a decade ago also had a lasting impact; no commercial-scale cultivation of such crops has proceeded.	<u>Source:</u> MASIS Report, Ireland, p. 16.	Ireland
Local resistance to the implementation of co-incineration (Portugal)	The co-incineration crisis: The implementation of co-incineration plants in Portugal was (and still is) a very sensitive matter, not only in the choice of technical solutions but also, and mainly, in terms of their specific locations across the Portuguese landmass. Strong resistance from local populations to the installation of these systems in their neighbourhood, together with public concerns about their environmental effects, led to an unprecedented shift in the role played by scientific commissions: firstly, and in this particular case, their role moved from providing advice to exercising decision-making power; the view expressed by the scientific committee determined the political action taken in these matters; also, there has been a growing effort to ensure the independence of scientific committees and their members.	<u>Source:</u> MASIS Report, Portugal, p. 16.	Portugal



Protest against a cellulose plant in Latvia	Generally it might be more common for citizens and NGOs in Latvia to engage into debates on specific (technological) infrastructure objects potentially exerting negative influence on the local environmental conditions. Thus mention can be made of the public deliberation regarding the construction of a cellulose plant in Latvia that took place in mid-2000s and eventually led to the cancellation of this industrial project	<u>Source:</u> MASIS Report, Latvia, p. 22.	Latvia
Protest against 'biosecurity' law, Turkey	In Turkey, most citizen- or CSO-initiated activities affect the policies through the legal system. For example, when the government adopted the regulation regarding GMOs, several NGOs and private initiatives acted against the regulation through press releases on the mass media. Later on, one of the NGOs filed a lawsuit to stop the execution of the regulation. The Council of the State stopped its execution suggesting that a new law is required to solve this problem. Following this ruling, the government expedited the enactment of the "biosecurity" law.	<u>Source:</u> MASIS Report, Turkey, p. 21.	Turkey
Protests against pre-implementation diagnostics in some special cases, Austria, 2005	One example is the events in 2005 around the amendment to the law regulating biotechnology in Austria (Gentechnik Gesetzesnovelle). The draft amendment suggested changes to the law, resulting from progress in the field of biotechnology. When presented to parliament, there was relatively little discussion and hardly any controversy. In some groups of the public, however, the reform was heatedly discussed. The main reason for this was the suggestion to allow for pre-implementation diagnostics in some special cases. During the legislation's evaluation period, disabled people's organisations and other critical groups voiced harsh critique and the issue was taken up by the media. After some discussion, the passage was deleted from the amendment.	<u>Source:</u> MASIS Report, Austria, p. 18-19.	Austria
Protests against the establishment of hydro plants, Turkey	Activists against the establishment of hydro plants on Turkish waterways launched a campaign against it. Court cases are pending for 65 hydro plants out of 145, and judges stopped the operation of 34 such plants. The campaign for increasing awareness of the drawbacks of hydro plants and urging proper environmental compliance is gaining momentum. For example, the Dalyan Yuvarlak brook, which starts in the foothills of the Sandras Mountains and empties into Köyceğiz Lake, runs through seven villages. Villagers' campaign against the establishment of power plants resulted in government's change of mind and the villagers got what they wanted. However, these individual acts have not changed the policy, yet. Instead, these piece-meal actions had local impacts on the implementation of policies.	<u>Source:</u> MASIS Report, Turkey, p. 21.	Turkey
Stuttgart 21 case, protest and local resistance to infrastructural changes, Germany	Large-scale projects, in particular on new infrastructures, frequently lead to CSO and citizen engagement. The most recent example is the Stuttgart 21 case. The plan to build a new main railway station in Stuttgart underground was debated for years by the local and regional authorities. However, citizen's protest started no earlier than at the moment when the destruction of the old main station began and trees in a park were cut. The protest became so massive that a mediation procedure was started and successfully finished. The new state government (green-red coalition	<u>Source:</u> MASIS Report, Germany p.25-26.	Germany



	with the first German prime minister of the Green Party) will organise a plebiscite on the further development. This case, which caught many people by surprise, raised the postulate for more and earlier participation in case of large-scale projects.		
The Foz Coa controversy, Portugal	The Foz Coa controversy is another well-known example of the strength of an association between scientific demands from the archaeologists' community and social movements driven both by the media and scientists. The pressure exercised by this alliance was strong enough to cancel the construction of a dam which would have flooded the Portuguese Coa Valley, which is a major open air site for Palaeolithic art in Europe. It succeeded in replacing this project with – the creation a park for archaeological study but also open to the public.	<u>Source:</u> MASIS Report, Portugal, p. 16.	Portugal

Mechanism	Description	References	Country
Social movement			
GMO-free' initiatives (Latvia), 2010	With regard to biotechnologies, a range of activities have been recently launched also by the above-mentioned "GMO free" initiative that aims at facilitating policy-making in the field of genetically modified organisms based on the principles of sustainability and public interests. As noted before, this can be seen as a rather unprecedented case of citizen-initiated activities with an actual political impact in Latvia leading to formal restrictions regarding the cultivation of genetically modified crops in most of the territory of Latvia. The "GMO free" movement founded in 2010 positions itself as a social initiative that unites farmers, food producers, grocery stores, catering businesses, schools and kindergartens and other companies and institutions, which do not grow, sell or use GMOs. The aim of the movement in to ensure the rights of the citizens to make an informed choice with regard to the consumption of genetically modified products as well as to promote development and accessibility of "GMO free" products and services in Latvia.	<u>Source:</u> MASIS Report, Latvia, p .22.	Latvia
Let's do it' - movement and world clean up - Estonia, 2008	The environmental initiative Let's do it! was born in Estonia in 2008. Some activists realized that the roots of massive illegal dumping habit lie in the lack of responsibility on every level. Things needed to get turned around for the better. The idea was first to map all the illegal waste dumping sites with new technologies. Then a massive cleaning day was organised. Co-operation throughout the whole society - involving the state, NGO-s, private enterprises and vast number of active citizens, united the nation and on 3rd of May 2008 more than 50 000 people and hundreds of organizations together cleaned more than 10 000 tons of illegal garbage from the territory of Estonia. Then the "one day, one country" concept was born. Since then neighbouring countries Latvia and Lithuania decided to use the same model and now even Romania, Slovenia, Portugal, Ukraine, India and Brazil have used the same concept for their environmental actions. The massive actions, where thousands of citizens (including young people) are engaged in cleaning the waste, have had profound positive changes in environmental awareness and attitudes. Implementing new technologies and bringing in the new level of co-	<u>Source:</u> MASIS Report, Estonia p.15-16. <u>Additional information:</u> http://www.letsdoitworld.org/	Estonia



	operation between different sectors has increased the public engagement and its impact on environmental policies.		
Nuclear energy debate 1960-70, Germany	In Germany, citizens and civil society organisations have a long tradition in bringing issues related to science and technology to the political agenda. A prominent example are Ostermärsche (Aldermaston marches), starting in Germany in the early 1960s and organised by peace activists to mobilise society against nuclear armament. From the 1970s on and later fuelled by the nuclear accidents in Harrisburg and Tschernobyl, citizens and civil society organisations (environmental organisations) raised awareness for the dangers of nuclear energies. They were successful in stopping the construction of nuclear plants in some locations (e.g. in Wyhl) as well as the construction of the planned German facility for recycling nuclear waste (Wackersdorf) (though there were also legal problems which stopped the project). They also contributed considerably to lowering the acceptance of nuclear power in larger parts of the population. The environmental movement, reaching back to the 1980s, organised itself in several local and regional civil society organisations, with the Bund für Natur- schutz Deutschland (BUND, Friends of the Earth Germany) being the largest one. The environmental movement succeeded in influencing planning processes by many interventions, partially by public actions and demonstrations, partially by legal intervention, and also by political engagement. The fact that Germany is among the leading countries in researching and using renewable energies has by sure something to do with this early continuous and still ongoing engagement. However, a lot of other developments contributed strongly to the German position in this field, such as intensive research in renewable energies and politically installed incentive systems. There was particular public resistance by the affected population but also by many other people in the context of nuclear waste disposal. The name of the site Gorleben, which was planned to become the national final disposal site for high-level radioactive waste, became a synonym for a specific culture of resistance against political decisions even if they were democratically legitimised by majority decisions. Transports of nuclear waste to Gorleben usually are only possible with thousands of policepersons. Currently, however, a new situation emerges because of the phase-out of nuclear energy in Germany. It seems possible that a new and more participatory approach will be taken in order to decide about the location of a nuclear waste disposal site.	<u>Source:</u> MASIS Report, Germany, p. 25.	Germany
Nuclear energy debate 1970-80, Ireland	Citizen groups opposing nuclear power 30 years ago had an impact that endures; the proposal of that time to build a nuclear power station in the south- east of the country was withdrawn and nuclear power has stayed off the agenda since then. This is in part also influenced by CSO and political party initiatives regarding the impacts on the marine environment of the Irish Sea a nuclear waste processing facility in north-west England.	<u>Source:</u> MASIS Report, Ireland, p. 16.	Ireland



4.3 Public consultation

– *the aim is to inform decision-makers of public opinions on certain topics.* These opinions are sought from the sponsors of the PE initiative and no prescribed dialogue is implemented. Thus, in this case, the one-way communication is conveyed from citizens to sponsors.

Mechanism	Description	References	Country
Children's conference			
SiS CATALYST – Children as Change Agents for the Future of Science in Society'	The main ambition of the project, as such, is to “identify how children can be change agents in the Science and Society relationship” in order to perceive their role in solving the future problems of science and society. Throughout the project, these grand questions are viewed in various contexts (from global to regional) and studied in order to supply strategic vehicles and shared assessment tools. In terms of focus, SiS CATALYST primarily targets able children who are currently unlikely to progress into science education past secondary school, for various social or demographic reasons, which will be different within different contexts (whether economic, geographic, ethnic, gender-based, etc.). One of the programmes' innovative outputs is a ‘Children’s Conference’. The project was initiated in 2011 and will end December 2014. SiS Catalyst takes a broad approach to science as inter-connected branches of learning, because we believe that the solutions to the big research questions of the future will be found through interdisciplinary working, free from the artificial boundaries that we have created between academic disciplines. At the heart of this is our collective learning at institutional level. There are two main pillars of work within the project; 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. There are three crosscutting themes: Listening to Young People, Recognising the Role of Students and Building the Dialogue with Key Players (organisers, scientific researchers and managers). These will work across the lifetime of SiS Catalyst to ensure that these unique perspectives are listened to all aspects of delivery.	<p><u>Source:</u> Tehnpolis group (2012): Sis Case Studies, May 18, first version, pp. 146-148: See data collection specification, section 3.1 in this report.</p> <p><u>Additional information:</u> http://www.siscatalyst.eu/</p>	International, EU funded.

Mechanism	Description	References	Country
Choices method			
Choices for Bristol (the ideal Bristol)	From 1994 to 1996, Choices for Bristol, a community visioning project for Bristol, England, Britain’s tenth largest city, was carried out. Inspired by similar efforts in Chattanooga and New Haven, Choices for Bristol asked citizens to come up with ideas for making Bristol the best city it could be, and then helped them organize those ideas into a comprehensive vision and action plan for change. Choices for Bristol was backed by city leaders throughout the public, private and community sectors. Over 2000 ideas for a better Bristol were submitted by about 450 groups and individuals. At public meetings in 1996, over 300 people grouped the ideas into themes before developing shared vision statements and forming action groups. A 1999 follow-up report described progress towards the Choices	<p><u>Sources:</u> http://www.karloberger.com/Choices_for_Bristol.htm</p> <p>The New Economics Foundation (NEC) (1998): PARTICIPATION WORKS! 21 techniques of</p>	United Kingdom



	<p>for Bristol vision in many areas, including government accountability, community participation, social services, and local economies. Hailed as the largest public consultation exercise ever carried out in a British city, the initiative received a Building a Better Bristol award from the Bristol Chamber of Commerce in 1997. The initiative was discontinued in 1999 for lack of funding.</p> <p>There are four stages:</p> <ol style="list-style-type: none"> 1. Meetings throughout the community. People generate ideas that would make life better in the future. 2. Consolidation of goals. All ideas submitted are presented to meetings or vision workshops led by facilitators. They are then consolidated into possible goals by people interested in the particular subject. The goals may then be clustered under 'vision statements'. 3. A 'Vision Fair'. People vote on which goals matter most to them and on which goals they would like to work towards. The goals and visions are published. 4. Action groups are formed to carry out the chosen ideas <p>Choices for Bristol distributed 7,000 copies of their Discussion Guide. Ideas came partly from groups using the Guide and partly from Vision Bristol Roadshows at libraries, health centres, supermarkets and so on. People came up with 2032 ideas for improving the city. Two Vision Bristol Meetings for adults and for young people turned the ideas into achievable goals and six vision statements. The statements and ideas were published in February 1997 under the title 'Your Ideal Bristol? Let's Make it Happen' and displayed over five days. People were invited to join Action Groups. Choices for Bristol has initiated and supports action on libraries, a youth forum, waterways, and transport.</p>	<p>community participation for the 21st century. The New Economics Foundation, p.14-15.</p> <p>Smith, Graham (2005): <i>Beyond the ballot. 57 Democratic Innovations from Around the World.</i> The POWER Inquiry, p. 31.</p> <p><u>Additional information:</u> Regarding the choices method and the specific initiative:</p> <p>The New Economics Foundation (NEC) (1998): PARTICIPATION WORKS! 21 techniques of community participation for the 21st century. The New Economics Foundation, p.14-15.</p>	
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Mechanism	Description	References	Country
Co-creation spaces	<p>See the article: Eija Kaasinen et al. Three approaches to cocreating services with users. Available at: http://www.cloudsoftwareprogram.org/theses-and-articles/i/28685/1570/three-approaches-to-co-creating-services-with-users</p> <p>See also co-production approach, http://participationcompass.org/article/show/151</p>		



Living Labs	Living Labs are open innovation ecosystems that engage users in the co-creative process of new services, products and societal infrastructures in real-life settings. A Living Lab offers services which enable the users to take active part in research and innovation as part of their everyday lives. As a development and innovation environment, a Living Lab is more participatory than traditional social pilot studies and ethnographic research, which focus on observing rather than interacting. Living Labs can provide reliable information about the market behaviour of users, further contributing to reduced risks for new business and technology. One example of a Living Lab case was for instance focused on the development of postal services.	<p><u>Sources:</u> Eija Kaasinen et al. Three approaches to cocreating services with users, pp.6-7.</p> <p>Available at: http://www.cloudsoftwareprogram.org/theses-and-articles/i/28685/1570/three-approaches-to-co-creating-services-with-users</p>	Finland
Web-based co-innovation space Owela	Owela is an online innovation space that helps companies to co-design new and improve existing products and services based on consumer needs and ideas. Owela supports active user involvement in the innovation process from the first ideas to piloting and actual use.	<p><u>Source:</u> http://owela.vtt.fi/owela/uploads/2008/01/Owela_brochure_2011_eng.pdf</p> <p><u>Additional information:</u></p> <p>Näkki, P., and Antikainen, M. (2008): Online tools for co-design: User involvement through the innovation process. In Proceedings of the NordiCHI'08 workshop 'How can HCI improve social media development? Pp. 92-97</p>	Finland
Physical showroom Ihme	VTT's Ihme innovation showroom concept was launched to test and further develop the idea of an open public co-creation environment. Ihme aims to fulfil the existing gap between laboratory research and a living lab approach. Ihme is an open, low threshold environment where ordinary people can visit easily according to their own schedules. People can experience, see and try physical proofs of concepts and other tangible illustrations of new technology and services. Visitors can freely just look and try pilot services, participate in co-creation sessions or just leave their ideas and comments. Presented technology and service pilots are designed so that they are entertaining and fun, e.g. set up in the form of a game. Ihme emphasizes direct designer/user interaction and encourages designers to come and introduce their ideas and discuss of them with	<p><u>Source:</u> http://www.cloudsoftwareprogram.org/theses-and-articles/i/28685/1570/three-approaches-to-co-creating-services-with-users</p>	Finland



	potential users. Direct interaction enables agile, iterative development.		
ILCO (Illustrative and Participatory Community Planning)	ILCO project is managed by VTT Technical Centre of Finland and co-funded by Tekes – the Finnish Funding Agency for Innovation. ILCO aims at developing, demonstrating and evaluating new visual web-based service concepts using mixed reality technologies for participatory urban planning. In our vision, the development of future urban living environments will be a transparent and collaborative process with different stakeholders. The ILCO project is delivered together with the City of Tampere and the municipalities of Pirkkala and Lempäälä. Company partners are JJ-Net Group Ltd, Sweco PM Ltd and Visura Ltd.	<u>Source:</u> http://www.ilcocities.fi/en/	Finland

Mechanism	Description	References	Country
Community appraisal, community profiling			
Community appraisal - Cotswold district of Gloucestershire	COMMUNITY APPRAISAL - is a survey of the community, by the community, for the community and an action plan or list of recommendations for the future of the community. Case study: Tetbury, the second largest town in the Cotswold District of Gloucestershire, has a population of nearly 5,000. The appraisal, launched in 1993, has spawned a large number of initiatives; some have reached fruition, and others are continuing. The questionnaire was distributed to 2,041 households and 60% were completed and returned. Issues addressed included: planning; parking; transport; shops; employment; medical services; crime; sport and leisure; tourism; green space and representation on local councils and committees. An open weekend was held to publicise the outcomes. Service providers (police, local government, health authority, etc.) were invited to defend their past performance, as perceived by the local residents, and to outline future actions. The appraisal has led to a major redevelopment proposal, orchestrated by local people, for the old railway sidings and other land in the town. This is being pursued through, amongst other things, a weekend of Action Planning.	<u>Source:</u> The New Economics Foundation (NEC) (1998): PARTICIPATION WORKS! 21 techniques of community participation for the 21st century. The New Economics Foundation, pp. 18-19 <u>Additional information:</u> See source regarding more information on community appraisal and the specific case	United Kingdom

Mechanism	Description	References	Country
Community based environmental management			



<p>CiVi.net – The capacity of civil society organisations (CSOs) and their networks in community based environmental management, 2011-2014</p>	<p>CiVi.net is an ongoing project funded through the FP7 Environment programme in the area of community-based management of environmental challenges. Human welfare depends on a variety of natural resources and the services that these provide. However, human activities also influence and change the provision of these resources, causing environmental problems such as a loss of biodiversity and climate change. This creates a need to consider more carefully the interconnections between environmental and economic systems, and has led to a growing interest in social environmentalism and in the governance of shared resources. In Latin America, as in other places, global environmental change has led to environmental degradation and resulted in communities being faced with the challenge of reorganising the management of natural resources. Some communities faced with this challenge have done well in managing their resources and have found successful solutions, and the CiVi.net project believes that these communities can be leaders for others. More specifically, the project aims to analyse, transfer and disseminate to other communities a selection of successful and sustainable community-based approaches and solutions to ecosystem service management in Latin America. The main focus of their approach is on the institutional settings (i.e. the rules and related governance models) that help to prevent and resolve tensions arising from a necessary repartitioning and use of natural resources, as well as on the role of civil society organisations (CSOs) within these governance models. The CiVi.net project runs from October 2011 to September 2014, and the total project cost is €2.3m, with an EC contribution of over €1.8m. The instrument seeks to encourage a shift from a situation where CSOs are simply relied on to channel scientific results, to one where these organisations are working together with scientists from the outset of the research process and as an integral part of these activities, therefore creating a better symmetry between the needs of society and how science can address them. After initial research into theories and concepts, analysing how communities deal with environmental issues, the CiVi.net project is taking an ‘action research’ and case study approach. The project has chosen to case study four regions in Brazil and Costa Rica, where the CSO partners have identified example communities that have developed successful solutions to environmental issues and natural resource management. The selected cases are: Marujá (Sao Paulo), Bananal Island (Tocantins), Encostas da Serra Geral (Santa Catarina) and the Osa region (Cost Rica).</p>	<p><u>Source:</u> Tehnopolis group (2012): Sis Case Studies, May 18, first version, pp. 156-157: See data collection specification, section 3.1 in this report.</p> <p><u>Additional information:</u> See source.</p>	<p>International, EU funded.</p>
<p>COMBIOSERVE – Assessing the effectiveness of community-based strategies for the management of biocultural diversity in Latin America. (2012-15)</p>	<p>The COMBIOSERVE project is being funded through the BSG-CSO instrument and it is a 36- month study that is due to complete in 2015. The main objectives of the project are to identify the conditions and principles of successful community-based conservation in selected locations in Latin America, and to identify the most appropriate strategies and policies to promote mainstreaming and up-scaling of this work. Academic and community researchers will work together to identify the conditions and principles of successful community-based conservation in selected locations in these sites, working in partnership with local CSOs and indigenous communities. Taking co-enquiry as its methodological approach, the consortium will adapt rigorous research methods and approaches that have been developed by research institutions in collaboration with CSOs and communities in order to produce innovative community-based participatory research protocols. In each of the sites the community researchers will then help to develop and apply a diversity</p>	<p><u>Source:</u> Tehnopolis group (2012): Sis Case Studies, May 18, first version, pp. 160ff: See data collection specification, section 3.1 in this report.</p>	<p>International, EU funded.</p>



	of social and biological research methods.		
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Mechanism	Description	References	Country
Community indicators			
Community indicators - used in Merton, data on equal access in the city, UK	<p>People in Merton identified equal access as a key indicator. Volunteers from the Merton Association for Independent Access (MAFIA), whose mobility is restricted, visited shops, banks, places of worship and post offices in the Borough's four main town centres to assess how accessible these are for disabled people. Sue Tanton of Merton's Policy and Quality Division says 'MAFIA brought their own expertise to the collection of this data. And, as a result, they became involved in the wider Agenda 21 process'. This indicator also shows up accessibility for older people, those with children in buggies, and others for whom access is difficult. The data was collected for an access guide to the Borough. The next edition will include doctors' and dentists' surgeries and private leisure facilities. The long-term target is 100% accessibility. Of 912 premises surveyed, 453 (49.7%) were accessible. Everyone agreed that a target of 60% would be a realistic medium-term milestone. The indicators have potential for development to include more shopping areas and public open spaces, amongst other facilities.</p> <p>Community indicators act like a flag. They are tools for simplifying, measuring and drawing attention to important issues. Sets of Community Indicators are being developed across the UK, by communities of all shapes and sizes, to measure the local trends that really matter to them. Local people decide together what is important to them and agree how best to measure whether things are getting better or worse. The results increase awareness of problems and opportunities, and help build agreement about what should be done. By giving a voice to local people, they literally make communities count.</p> <p>There are six steps:</p> <ol style="list-style-type: none"> 1. Getting started: Raise awareness about the project, plan the next stages, seek appropriate funding and resources and enlist help. 2. Deciding issues: Help the community to think through and reach agreement on the issues that are of most concern and interest. Use questionnaires, interviews and workshops to get people involved. 3. Choosing indicators: Working from the list of common issues, try to identify one or more indicator ideas for each issue. A basic list of criteria will assist selection. The best indicators will strike a chord in the community. 4. Gathering information: Harness the resourcefulness of the community to identify sources of data from official sources and develop ideas for information that the community can gather itself. 5. Communicating progress: The information is turned into understandable indicators for the community. 6. Galvanising action: The indicators are for education and action: to grab people's attention, make them think, and spur them on. 	<p><u>Source:</u> The New Economics Foundation (NEC) (1998): PARTICIPATION WORKS! 21 techniques of community participation for the 21st century. The New Economics Foundation, pp. 20-21.</p> <p><u>Additional information:</u> See source for more information regarding community indicators and the specific initiative.</p>	United Kingdom



Mechanism	Description	References	Country
Consulta- tion document (web based)			
UK - web-based 'consultation document' (e.g. regarding Guidelines on Scientific Analysis in policy making)	Generally Government public consultations involve a document being placed on a website which includes specific questions for consideration. Since 1997 the Chief Scientific Advisor to the Government has issued guidelines on the use of science in policy-making. In October 2010 the fourth version of the Guidelines were issued. This version builds on policy-making experience gained inside government and input from a wide range of partner organisations and individuals who responded to the public consultation held between November 2009 and February 2010. The guidelines address how scientific and engineering advice should be sought and used to enhance policy-making in government. They encourage the use of public dialogue and refer departments to Sciencewise-ERC. However, they are guidelines and each department will have its own procedures. It is also thought to be important that scientific and engineering advice is integrated with evidence from the other analytical professions. Across government, the heads of the analytical professions (research officers, economists, statisticians and operational researchers) and the Government's Chief Scientific Advisor (in his/her capacity as Head of Science and Engineering Profession) form the Heads of Analysis (Hoax) group which encourages good practice on cross-disciplinary working to support the integration of evidence from different fields and on cross-government issues. All analytical professions in government have codes of practice or adhere to wider guidance, including the Civil Service Code ²² , the seven principles of public life (Selflessness, Integrity, Objectivity, Accountability, Openness, Honesty, Leadership) and the ESRC research ethics Framework.	<p><u>Source:</u> MASIS Report, UK, p. 22-23.</p> <p><u>Additional information:</u> Expert resource centre, see: http://www.sciencewise-erc.org.uk/</p> <p>The Heads of Analysis (Hoax) group, see: http://www.bis.gov.uk/go-science/about/how-we-work/heads-of-analysis-group</p>	United Kingdom



Mechanism	Description	References	Country
Delphi workshop			
PASSO – Participatory assessment of sustainable development indicators on good governance from the civil society perspective, 2009-2010	<p>The PASSO project (2009-2010) sought to address the lack of satisfactory indicators available for monitoring good governance in European activities by developing a set of more effective, coherent and useful indicators that better reflect the perspective of all social actors. An innovative participatory process was employed, whereby RTD performers, statisticians and experts in governance worked together with CSO representatives from across Europe in an iterative manner to assess the efficiency and relevance of existing indicators and to identify new or alternative ones to use. This process ensured that the final outcome was the result of consensus between all actors concerned. An initial Delphi Workshop was held over the course of two days, involving a restricted interdisciplinary group of 18 RTD performers and CSOs (the International Expert Group). This workshop served as a first participatory assessment of the framework and indicators that had been elaborated and identified in the first stage of the project. The format allowed the CSO members to react to RTD performers, statisticians and experts' views in an iterative manner, and resulted in an amended framework and proposals for new and amended indicators, providing an extended list of 58 indicators in total.</p> <p>The amended framework and indicators were then put out for consultation and assessment through a Europe-wide network of CSOs and at a series of national CSO workshops run in Austria, Belgium, Bulgaria, France, Romania, Spain and Luxembourg. This process sought to understand the relevance of indicators from a local perspective and any differences that existed across Europe. Again, the process resulted in amendments to the framework and indicators. A second Delphi Workshop was then held. The International Expert Group gathered for a second time to re-assess the updated list of indicators and inputs received on the framework. Further adjustments were made as a result of this and a final list of 30 indicators was arrived at. A wider audience of practitioners was then called on to give its opinion on the indicators and framework at a final participatory forum held in October 2010.</p>	<p><u>Source:</u> Tehnopolis group (2012): Sis Case Studies, May 18, first version, pp. 174ff: See data collection specification, section 3.1 in this report.</p> <p><u>Additional information:</u> See source.</p> <p>http://www.passo-project.org/</p>	International, EU funded.

Mechanism	Description	References	Country
Direct consultation			
Direct consultations - ministers hold open office hours for citizens, Iceland	All ministers, including the ones on S&T, hold open hours once a week at a given time and place. Open hours allow for direct consultation, a strong advantage, although only for a limited number of people, a disadvantage. Having said this, it is also a fact that citizens are usually not taken into account in the decision making processes. The Parliament of course plays that role but there are possibilities to gain broader views of the general public through open meetings like in Norway for example.	<u>Source:</u> MASIS Report, Iceland, p. 22.	Iceland



Mechanism	Description	References	Country
E-consultation			
E-Konsultation on e.g. internet policy, Germany	To better involve citizens in the discussion about themes and projects at the political and administrative level, the Bundesministerium des Inneren (German Federal Ministry of the Interior) established the e-Konsultation portal in 2008, which since then has been used for five public discussions and consultations related to using the Internet for e-governance, secure private communication, and German Internet policy.	<u>Source:</u> MASIS Report, Germany, p. 24. <u>Additional information:</u> http://www.zebralg.de/konsultation	Germany
E-consultation to plan the renovation of the city centre in Kalix, Sweden (2000)	In 2000, the city of Kalix in northern Sweden invited local residents to participate in an online policy exercise designed to plan the renovation of the city centre. The policy forum enabled citizens to discuss the issues with politicians and with one other; there was also a structured survey in which participants could vote for their planning preferences. Citizens were able to participate by post, fax and telephone, but 86% of participants chose to use the internet. 1,200 of the city's 15,000 inhabitants participated in the discussion and 72% of them reported that they found the experience democratically useful. Participants were registered and issued with a password, so as to ensure that only those entitled to vote could do so and that they only voted once. Internet access was made available for local people via schools and libraries, so that nobody was excluded because of the digital divide.	<u>Source:</u> Coleman, Stephen and John Götze (2001): Bowling Together: Online Public Engagement in Policy Deliberation. London: Hansard Society, p. 39. <u>Additional information:</u> http://www.votia.com	Sweden
The Digital Administration programme (Denmark, 2000)	In 2000 the County of North Jutland launched the Digital Administration programme, within which was the Democracy Project. The task of the Democracy Project was to create an electronic forum for e-democratic dialogue among citizens and politicians, with a particular aim towards November 20, 2001: County Council Election Day (which later turned out also to be General Election Day). In 1997, North Jutland experienced the lowest voter turnout in the Danish election. The object of the Democracy Project was to make visible the decisions made on a regional political level, and to involve the citizens in the process of democracy. Specifically, the County Council also wanted to reach first-time voters, who were known to show a low turnout. Citizens, politicians and first-time voters were invited to take part in the project. The result was a very lively and well-visited web site with a good dialogue among citizens and politicians. The guidelines for the design of the project were created in focus group meetings with 'adult' citizens, politicians and first-time voters. Here, the groups were asked to define their requirements for a web site representing democracy in North Jutland. The essential conclusions reached in these sessions were that the dialogue between citizens and politicians should be a central element of the web site. The citizens wanted 'to get to know the politicians' and to be involved in political planning at an early stage of the process. It was agreed that this was not intended as a place for municipal or county officers to provide answers to citizens' problems; rather it should accommodate an open	<u>Source:</u> Coleman, Stephen and John Götze (2001): Bowling Together: Online Public Engagement in Policy Deliberation. London: Hansard Society <u>Additional Information:</u> www.nordpol.dk	Denmark



	<p>debate between citizens and the politicians. The web site was designed in close cooperation between the project group of the County of North Jutland and KMD, a large Danish IT consultant, KMD also contributed to producing the user survey and in defining the design of the web site. The web site www.nordpol.dk was structured with a forum for debates as the central element.</p> <p>In addition, the site included:</p> <ul style="list-style-type: none"> • A presentation of candidates and lists (produced by the politicians personally) • A chat room (enabling young people to chat with youth politicians and front-runners) • A calendar of political arrangements and dates of relevance to the elections. • News sites, where the daily news was available from the regional broadcasting station. • A quiz with prizes to win • An info page with information on the elections and the public sector. • A search function. <p>The design was based on a wish to create a sympathetic, inviting and friendly image, which would not put off young people at the first click. During the project period of 10 September to 20 November, www.nordpol.dk had 23,000 visitors and 440 contributions to the debate. The total traffic was shared between the debate, the chat and visits to the politicians' profiles. The reason for www.nordpol.dk being so well visited and used to such a degree is partly to be found in the extensive involvement of users, in particular the candidates for the county council who received comprehensive and repeated information about the project, and partly in the profiling potentials of participating and providing information.</p>		
Web based consultation for the drafting of laws, Greece	The formal procedure, upon initiative of the Prime Minister in 2010, includes a mandatory public consultation system for all draft laws and suggested regulatory interventions. This is a novelty for democratic governance in the country. There have been no documents directly related to SiS, except for the Draft Law on the Organisation of HEIs in this site (http://www.opengov.gr/home/) but any public issue, current of future, is expected to be published for consultation.	<u>Source:</u> MASIS Report, Greece, p. 14.	Greece
Web based consultation for the drafting of laws, Poland 'public information bulletin'	There is an Internet-based form of consultations – the Public Information Bulletin publishing all drafts of legal acts (allowing the public to express their opinions).	<u>Source:</u> MASIS Report Poland, p. 14. <u>Additional information:</u> http://www.bip.gov.pl/	Poland



Mechanism	Description	References	Country
Crowdsourcing (citizen science)			
BioBlitz Bristol, 2009, UK	<p>The Bristol Natural History Consortium (BNHC) is an alliance between the city's two universities and nine local wildlife organisations and agencies. Building on the success of Bristol's Festival of Nature, BNHC launched the South West's first ever terrestrial BioBlitz event over two days in June 2009. A tool for biodiversity exploration, education, and investigation, the Bristol BioBlitz was a 30-hour race against the clock event where scientists, naturalists, students, members of the public, schools and community groups worked together to find, identify and record as much wildlife as possible in the Ashton Court Estate. The estate, on the edge of Bristol and North Somerset, covers 850 acres of woods and open grassland and contains a great variety of wildlife - the presence of rare woodland beetles earned the site SSSI status in 1998.</p> <p>* The BioBlitz name and concept is not registered, copyrighted, or trademarked; it is an idea that can be used, adapted, and modified by any group to freely use for their own purposes. Free to all, the aims of the Bristol BioBlitz were threefold:</p> <p>To find and identify as many different species as possible in a 30-hour period. To collect useful records, to be used by the Bristol Environmental Records Centre, the National Biodiversity Network and local and regional park authorities. To enthuse and engage the public with their local outside spaces, nature and wildlife recording.</p> <p>The target audience was school children from Years 6–10 during Schools Day on the Friday, and local families and individuals on the Saturday. The event was a great success: over 70 naturalists worked with 500 members of the public over the two days to find and log 637 unique species.</p>	<p><u>Source:</u> The National Co-ordinating Centre for Public Engagement [NCCPE], Case Study Bioblitz Bristol: http://www.publicengagement.ac.uk/how/case-studies/bioblitz-bristol.</p>	United Kingdom
Galaxy Zoo, UK	<p>Galaxy Zoo, a website that allows the public to contribute to scientific research, currently has 150,000 users who contribute classifications equivalent to 150 full-time staff¹⁷. Drawing on the tradition of amateur astronomers contributing observations to research in astrophysics, the Galaxy Zoo team posted digital images from the Sloan Sky Survey and, through a simple interface, invited the public to identify whether galaxies were spiral or elliptical. The project was quickly publicized by Radio 4, a public radio station in the UK, and in its first year collected more than 50 million classifications.¹⁸ The website has public forums in which contributors can pose questions related to the galaxies to the scientists. These citizen scientists have not only discovered new galaxies, but in 2008, a Dutch schoolteacher discovered a new type of cosmic option, dubbed “Hanny’s Voorwerp”. From an academic perspective, the project significantly contributes to the scope of classifications, resulting in new discoveries, publications, and presentations. The project provides a community for citizen scientists, including a venue to discuss questions, and further education in astrophysics</p>	<p><u>Source:</u> Bulger, Monica, Willam Dutton and Rebecca Eynon (2011): Best Practices on Outreach and public engagement. ULab: the European Laboratory for Modelling the Technical Research University of Tomorrow. Draft, report D.5.1, p. 22.</p> <p><u>Additional information:</u> http://www.galaxyzoo.org/</p>	United Kingdom



<p>iSPEX project, the Netherlands, ongoing project</p>	<p>Mass outdoors measurements of atmospheric aerosols by a citizen science network equipped with smartphone plus a dedicated spectropolarimetric add-on and app. iSPEX is an innovative way to measure aerosols. Click an add-on on your iPhone to change this everyday tool into a scientific instrument. This instrument measures properties of small particles in the sky: aerosols. The idea is based on that of the Spectropolarimeter for Planetary EXploration (SPEX), although adjusted to allow as many people as possible to use the instrument. We don't just involve the large public in this project because we find it important that people ought to know more about atmospheric aerosols; we primarily do so, because we expect that this method can yield more information about aerosols than currently available. In other words, we really want our participants to do science. Why wouldn't we want everybody involved in this project? After all, it is about a topic which concerns us all. Aerosols turn out to have an enormous impact on our lives, without us always knowing it. Small particles affect our health, aeroplanes cannot take off when there is (until now invisible) volcanic ash in the atmosphere, and aerosols form the large unknown in our knowledge of climate change. What may become clear, is beside the many things we know about them, there is much unknown about aerosols. We aim to use iSPEX for the biggest citizen science project ever in the Netherlands. We hope to do so by distributing about 10,000 iSPEX add-ons among enthusiast iSPEX users across the Netherlands. The use of the free app will allow every iSPEX user to do aerosol measurements. With iSPEX we want to increase knowledge about aerosols among: the general public, by their participation in actual aerosol research, the scientific community, by providing them with an additional source of information which hopefully creates new starting points for follow up research.</p>	<p><u>Source:</u> Engage2020, methods: See data collection specification, section 3.1 in this report.</p> <p>www.ispex.nl</p> <p><u>Additional information:</u> www.ispex.nl</p>	<p>Netherlands</p>
<p>Natures notebook, US 2012 (crowdsourcing)</p>	<p>Nature's Notebook, a program of the USA National Phenology Network (USA-NPN), engages professional and citizen scientists alike in recording observations of plant and animal phenology, the timing of seasonal biological events like leafing and flowering of plants and migration or hibernation of animals. Phenology affects events such as harvest cycles, the timing of human allergy season, and the outbreak of wildfires. Understanding phenology helps people decide when to irrigate land or manage insect pests, when to conduct prescribed burning in forests, or when to harvest agricultural crops. Spring is often measured by "budburst," or the first appearance of new leaves on plants. A "false spring" occurs when early warm weather coaxes prematurely plants out of dormancy, leaving young leaves vulnerable to frost. In 2012, Nature's Notebook participants documented a false spring that caused significant agricultural losses across the United States, including half a billion dollars of damages to Michigan fruit trees alone. Within five years, Nature's Notebook data should enable scientists to "forecast" spring weeks in advance and, within ten years, scientists might predict spring months in advance. This would enable government and private organizations to take protective measures against forecasted "false springs," as well as to inform decisions on when to plant crops and how to manage disease. Longer term phenology data could influence policy on agriculture, natural resource management, and carbon sequestration.</p>	<p><u>Source:</u> Bowser, Anne & Shanley, Lea (2013): New Visions in Citizen Science. Washington, DC: Woodrow Wilson International Center for Scholars. Pp. 18-19</p> <p><u>Additional information:</u> See source</p>	<p>United States</p>



<p>Mass experiments - children to help researchers map climate changes (different themes since 2009), Sweden</p>	<p>Every autumn since 2009, thousands of Swedish pupils of all ages have been helping researchers gather huge amounts of data. These so-called mass experiments are of mutual benefit; the researchers get more data and more widely geographical spread than they could otherwise easily collect, the pupils get the opportunity to participate in real research, and the teachers get material and methods based upon state-of-the-art research to integrate in the curriculum. VA (Public & Science) coordinates the mass experiments as part of the European science festival, Researchers' Night. Schools from across the whole of Sweden are involved and as many as 18,000 pupils were engaged in the 2013 experiment. The mass experiments efficiently link education to research, establishing valuable contacts with researchers and giving students insights into research methods and scientific thinking. VA helps the researcher to design an experiment whereby students gather data guided by their teacher. Research projects are also selected according to how well they fit into the curriculum. Instructions and teachers' manuals are jointly developed by the researcher and VA, and researchers also communicate directly with individual teachers and students using Twitter, Facebook and Instagram. Examples of mass experiments to date are: Biology/climatology: How is climate change affecting autumn leaves? Sociology: What risks do young people perceive in their daily lives? Food science: Is food stored at the right temperature in different parts of the refrigerator? Health/physics: Does the acoustic environment in schools affect pupils' ability to learn?</p>	<p><u>Source:</u> Engage2020, methods: See data collection specification, section 3.1 in this report.</p> <p><u>Additional information:</u> http://v-a.se/in-english/projects/activity-projects/researchers%E2%80%99-night/mass-experiments/</p>	<p>Sweden</p>
<p>Moon Zoo, UK</p>	<p>Zooniverse, an initiative based within the Department of Astrophysics includes several interactive websites that allow members of the public to contribute to ongoing astrophysics research. For example, Galaxy Zoo enables people to classify galaxies and similarly Moon Zoo, is an initiative to help researchers by classifying the surface of the moon.</p>	<p><u>Source:</u> Bulger, Monica, Willam Dutton and Rebecca Eynon (2011): Best Practices on Outreach and public engagement. ULab: the European Laboratory for Modelling the Technical Research University of Tomorrow. Draft, report D.5.1, p. 35</p> <p><u>Additional information:</u> http://www.moonzoo.org/</p>	<p>United Kingdom</p>



NoiseTube project 2008 -	<p>We facilitate sound measuring at any place and any time through a mobile app which exploits basic smartphone functionalities, namely microphone, wireless connectivity and localisation through GPS. Through these three components NoiseTube transforms already ubiquitous smartphones into highly portable, accessible sound measurement devices, enabling all citizens to measure ambient sound levels whenever and wherever they please. Next to the mobile app a second pillar of our participatory approach is the NoiseTube website which collects all user measurements and visualises them on Google Maps. Given enough measurements for a particular area, we can construct noise maps of comparable quality to those produced by governments today, which are of a very different kind. Indeed, pollution maps are typically created through computer simulations based on general statistics, such as the average number of cars in the city. They are backed up only by limited amounts of sound measurements because current measuring methods are expensive and thus not very scalable. The resulting maps give an average but not at all a complete view on the situation, entirely missing local variations due to street works, neighbour noise &tc. NoiseTube is user-friendly, free and open source and is used by citizens all over the world, for individual use as well as for measuring campaigns by citizen action groups. It is a tool with which citizens can estimate the quality of their daily environment and how it is affected by their behaviour, and as such provides support for awareness-building as well as for undertaking bottom-up, citizen-steered actions to solve local issues.</p>	<p><u>Source:</u> Engage2020, methods: See data collection specification, section 3.1 in this report.</p> <p><u>Additional information:</u> www.noisetube.net</p>	International
Public Battle Against Tonawanda Coke, US 2011	<p>Throughout our campaign against Tonawanda Coke Corporation we used citizen air monitoring. The homemade air monitoring device found elevated levels of benzene, a known human carcinogen. Residents then took those results to the government who did more in-depth monitoring (none was being done in the neighbourhood). The science, combined with three years of citizen action resulted in a raid of the plant, the second criminal conviction in under Title V of the Clean Air Act in US history and a reduction of benzene by 86%. Throughout the course of the campaign, residents used photography and an oral history project to continue to build an evidence base against the plant and to encourage policy makers to take action. Today, we work with a number of researchers to continue to set a research agenda that is guided by the community and can be used to continue to push for policies that protect public health and the environment.</p>	<p><u>Source:</u> Engage2020, methods: See data collection specification, section 3.1 in this report.</p>	United States
The Big Green Challenge (NESTA, 2008, UK)	<p>NESTA in the UK has a number of crowdsourcing efforts, and one example is the Big Green Challenge, which was NESTA's GBP1 million challenge prize designed to stimulate and support community-led responses to climate change. In early 2008, 355 not-for-profit groups came forward with a wide range of imaginative and practical ideas for reducing CO2 emissions in their communities. NESTA selected 100 of the most promising groups, who received support from the Big Green Challenge team and a GBP 20,000 grant to develop their ideas into detailed plans. From this group, they shortlisted ten finalists who put their ideas into practice to compete for the GBP1 million prize. Three winners were announced in 2009 (including a community interest company, a local council, a household energy services provider and a community</p>	<p><u>Source:</u> Marjanovic, Sonja, Caroline Fry and Joanna Chataway (2012): Crowdsourcing based business models: In search of evidence for innovation 2.0. Science and Public Policy 39, pp. 318–</p>	United Kingdom



	<p>association), each receiving a prize of GBP300, 000, plus a runner up which received GBP100, 000. The finalists reduced CO2 emissions in their communities by between 10–46% in the Big Green Challenge delivery year. NESTA have observed that such a challenge brought about innovative solutions from communities to tackle climate change, and have noted some features key to the success of such a ‘social challenge prize’: The challenge must be clearly defined, with a focus on community-led and innovative solutions; the challenge should be outcome focused, with the prize awarded to successful solutions measured against specific criteria; the challenge should be staged, with clearly focused timetables and financial/non-financial support at each stage; the challenge should not be prescriptive, with the competitors left to decide how the problem is solved and the competition should be as open as possible, with low entry barriers and eligibility criteria kept to a minimum.</p>	<p>332.</p> <p><u>Additional information:</u> Marjanovic, Sonja, Caroline Fry and Joanna Chataway (2012): Crowdsourcing based business models: In search of evidence for innovation 2.0. Science and Public Policy 39, pp. 318–332.</p> <p>http://www.nesta.org.uk/project/big-green-challenge</p>	
<p>The Citizen Sense project (beyond crowdsourcing, UK, 2013-2017</p>	<p>The Citizen Sense project is both research and practice-based, and undertakes a review of existing practices and technologies while also testing, modifying and further developing sensing kits for use by participants. We undertake a participatory design process, where with participants and community groups we collaboratively develop concerns to be monitored, as well as sites, technologies and practices for monitoring. We do this through initial consultation, walking seminars where kit is deployed and tested, interim site visits, as well as a follow-up workshop.</p> <p>The Citizen Sense project is led by Dr Jennifer Gabrys and is funded through a European Research Council (ERC) Starting Grant. The project, which runs from 2013-2017, investigates the relationship between technologies and practices of environmental sensing and citizen engagement. Wireless sensors, which are an increasing part of digital communication infrastructures, are commonly deployed for environmental monitoring within scientific study. Practices of monitoring and sensing environments have migrated to a number of everyday participatory applications, where users of smart phones and networked devices are able to engage with similar modes of environmental observation and data collection. Such “citizen sensing” projects intend to democratize the collection and use of environmental sensor data in order to facilitate expanded citizen engagement in environmental issues. But how effective are these practices of citizen sensing in not just providing “crowd-sourced” data sets, but also in giving rise to new modes of environmental awareness and practice?</p> <p>Citizen sensing is not just made up of observations of environmental change, but also involves technical and political practices that form a complex ecology of sensing. Citizen-sensing initiatives often depend upon forms of monitoring, reporting, managing and even self-managing in order to establish environmental engagement. This study seeks to advance the conceptual and practical understandings of citizen sensing through a more rigorous engagement with theories and practices of sensing, citizenship,</p>	<p><u>Source:</u> Engage2020, survey: See data collection specification, section 3.1 in this report.</p> <p>http://www.citizensense.net/</p> <p><u>Additional information:</u> http://www.citizensense.net/</p>	<p>United Kingdom</p>



	and environmental change.		
	In order to undertake this research, the project works through a set of inventive fieldwork and practice-based methods that first document existing citizen sensing projects and applications; and that then take the form of seminar-walking events and making workshops where sensing practices and technologies are tested through attention to distinct project-area related environmental issues. The fieldwork and practice-based methods work through participatory processes, and participants invited from the first survey phase of the project will be given sensing kits with which to develop sensor walks over a span of several months that document their environmental concerns.		

Mechanism	Description	References	Country
Focus groups			
DEEPEN project, 2006-2007	The Centre for Social Studies at the University of Coimbra has been particularly active in the DEEPEN project – a research partnership for integrated understanding of the ethical challenges posed by emerging nanotechnologies and their social, political and scientific implications for civil society. Several focus groups were conducted in 2008, with NGOs and other civic movements.	<u>Source:</u> MASIS Report, Portugal, p. 16 <u>Additional information:</u> http://www.geography.dur.ac.uk/projects/deepen/Home/tabid/1871/Default.aspx	International, EU funded.
VOICES FOR INNOVATION Project, 2013-2014	VOICES (Views, Opinions and Ideas of Citizens in Europe on Science) is a ground-breaking consultation, using the opinions of 1000 people from across 27 EU countries to shape the future of European research. According to the principles of Responsible Research and Innovation, European research must do more to adapt to the needs of citizens. To this end, VOICES devised a specialised yet flexible methodology, using 100 three-hour focus groups in order to engage citizens and gather their opinions and ideas about research and innovation in 2013. The consultations were run by science centres and museums, as the natural interface between science and society, and coordinated by Ecsite, the European Network of Science Centres and Museums. The VOICES consultation process gathered opinions and ideas about urban waste and innovation, from citizens across the EU. It used science centres and museums as powerful spaces for public engagement. The results were fed back to policymakers in order to influence the direction of EU research policy. VOICES took as its subject matter the topic of urban waste as a resource, and the concept of a "zero waste society". Fitting with the aims of RRI, key findings of the project can be grouped into two key categories. 1. VOICES validates the EU's current priorities of research and policies on urban waste: o Citizens want less packaging, and more efficient packaging materials. They want to see 100% biodegradable packaging, and plastics that can be fully recycled without loss of quality. They want it to be easier to recycle	<u>Sources:</u> http://www.voicesforinnovation.eu/ , see also specific country reports and the first independent evaluation. The final main European Voices report is forthcoming. <u>Additional information:</u> http://www.voicesforinnovation.eu/	International, EU funded.



	<p>and reuse products.</p> <ul style="list-style-type: none"> o They want manufacturers to be regulated more heavily, taking responsibility for the lifespan and recycling of their products, and ending planned obsolescence. o More recycling points are needed at convenient locations. o They want incineration plants to be used as much as possible to produce heat and energy. <p>2. VOICES also proposes new ways to strengthen current research:</p> <ul style="list-style-type: none"> o European citizens feel convenience in the household is crucial. This is a part of waste management often neglected by research. There is a clear need for devices to facilitate sorting and compacting in the home ("smart bins"), or technology which allows waste to be used as a resource in the household. o Citizens want to feel the benefit of waste separation. This can be done by making incentives, deposit systems and reward schemes more widespread. o Education and communication are crucial. Citizens are largely unaware of what happens to their waste, and would feel more engaged in the process if knowledge was more widespread. o Technology can be a motivation to recycle in itself. Citizens feel that systems using chips, electronic tags and apps can help to empower people in the recycling process. <p>Ecsite commissioned an independent evaluation in order to corroborate the quality of the project and the participatory processes, and to provide suggestions for improvements in the future.</p>		
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Mechanism	Description	References	Country
Foresight panel			
Foresight exercise, Vision 2023, Science and technology strategies, Turkey (+ delphi method)	<p>In an aspect of long-term visions and strategies for science, technology and innovation (STI)-driven, sustainable growth, "Vision 2023: Science and Technology Strategies" sets forth the aim of creating an ever-more innovative society in 2023. Together with three other projects that collected and evaluated data on the STI capacity of the country, Vision 2023 included a technology foresight project. Based on the Delphi method combined with thematic foresight panels as a systemic, meta-instrument, the results produced over 90 technology activity fields of which the main domains deemed most vital to secure the attainment of an STI-driven, welfare society are grouped under core socio-economic goals. "Strategic technology roadmaps" were elaborated after formation of the work-groups with the citizens as well as representatives from industry, university, NGOs. Furthermore, eight, cross-cutting strategic technology areas that were seen as common anchor points for achieving socio-economic goals were determined as: ICT, biotechnology and gene technologies, energy and environmental technologies, material technologies, mechatronics, nanotechnology, design technologies, and production process technologies.</p>	<p><u>Source:</u> MASIS Report, Turkey, p. 20.</p>	Turkey



<p>Forsk 2015 Denmark, 2008</p>	<p>The FORSK 2015 exercise made use of public input in setting priorities for strategic research areas for future years. FORSK 2015 aimed at improving the basis for prioritization of public funds for strategic research by providing catalogue of proposals containing especially promising themes for future strategic research. Mapping of these areas included an OECD scan and a web-based public hearing, with results subsequently processed by an expert- and a user panel. The horizon scan resulted in 125 suggestions for important development trends and societal challenges. The horizon scan functioned as the foundation and inspiration for the next step in the mapping process. This step consisted in a public internet hearing where everyone could identify important research needs and themes in Denmark. The hearing resulted in a further 366 proposals from the general public, companies, researchers, universities and organizations.</p>	<p><u>Source:</u> MASIS Report Denmark, 21-22.</p> <p><u>Additional information:</u> The FORSK 2015 exercise was evaluated in 2009; the report (in Danish only) is available at http://www.nordforsk.org/files/forsk2015</p>	<p>Denmark</p>
<p>Foresight rounds', how Iceland should look like in 2020, 2007</p>	<p>Specifically on S&T policy, there are mechanisms allowing for citizens involvement. The highest placed policy making body in Iceland is the Science and Technology Policy Council of Iceland (STPC). Another instrument that was used in 2007 is the so-called „foresight rounds“. The round in 2007 involved all kinds of parties, including citizens, in order to discuss about future S&T trajectories from the perspective of how Iceland should look like in 2020. This process was organised and supported by the Ministry of Education and Science. The outcome of the foresight exercise has been used for programming new S&T ambitions and actually formulating a new S&T policy. The research areas selected through this foresight exercise were: 1) natural resources, environment, and sustainable development, 2) health and wellbeing, 3) strengths of a small nation, and 4) industries, trade and funding of knowledge production and innovation. In Iceland citizens are mainly informed about S&T decisions and developments through the media – journalists play a critical role as triggers of these discussions, and not the scientists and/or policy makers themselves. At the same time, occasionally, like in the 2007 foresight exercise, citizens have been actively involved in decision making and their opinions were considered and this trend seems to be intensified (see below the initiative on „national meetings“). The Ministry of Education, Culture and Science, as a result of the above mentioned foresight exercise, established the „centres of excellence“ programme. This was done by announcing that a bottom up excellence programme would be initiated and functioned at the same time as a call for proposals. Some 50 ideas came through, and a panel of experts on behalf of the STPC decided to support three of them. This is also an example of more transparency and a wider discussion on what is important for Iceland in terms of research priority and potential future benefits.</p>	<p><u>Source:</u> MASIS Report Iceland, p. 22-23.</p>	<p>Iceland</p>



<p>NRF "Foresight Exercise", Luxembourg</p>	<p>The NRF initiated in 2006-2007 the NRF "Foresight Exercise" promoting some notion of „upstream“ engagement. This project was aimed at identifying nationwide research priorities. One of the main criteria was the socioeconomic impact development of particular research domains could have for Luxembourg society in the short or long term. The "Foresight exercise" was done in two phases. The first phase was aimed at constituting a „long list of research domains“ that could be considered as priority research domains. This was done by background data collection and active consultation of research actors, socio-economic actors and the general public by interviews, questionnaires and workshops. The next step was the further assessment of this „long list of research domains“ in order to identify priorities. For this, the same types of actors as in the first step were consulted. In the second phase, detailed research priorities were worked out with the aid of specific expert panel workshops. One could say that in the first phase of the exercise, some principle of upstream engagement could be observed, as 100 citizens were consulted and were asked to identify and assess up to ten research domains „of short- and/or medium-term socio-economic benefit to Luxembourg society“ according to given criteria of feasibility and attractiveness.</p>	<p><u>Source:</u> MASIS Report, Luxembourg, p. 13.</p>	<p>Luxembourg</p>
<p>"Futur" research dialogue (2001-2005), Germany</p>	<p>Technology foresight and observation play an important role for a growing number of countries which do not want to fall behind in the international technology race and lose their ability to compete internationally. In particular, priority setting for research policy is an important objective of foresight processes. Foresight activities are generally organised to a greater or lesser extent as a process involving scientists and experts from industry and the administration, but also representatives of other societal groups.</p> <p>The BMBF began to introduce foresight processes to be better able to plan strategic programmes. First activities such as "Technology at the Beginning of the 21st Century" (1991-1992) and the first German Delphi Study on the development of science and technology (1992-1993) were expert-oriented. However, with its "Futur" research dialogue (2001-2005), the BMBF conducted a foresight process with special emphasis on participative aspects and in cooperation with a large group of stakeholders from all areas of society. The BMBF's ITA (Innovation and Technology Analyses) concept seeks to identify fields of socially accepted technological progress, illustrate potential, identify political scope, and develop options for research and innovation. In doing this, ITA also includes participatory measures in order to involve citizens and stakeholders in determining priorities of research policy and contributing to shaping science and technology.</p> <p>Approach to design decisions in Futur: In the spring of 2001, the German Foresight process "Futur - The German Research Dialogue" was launched on behalf of the BMBF. The methodology and format of the expected outcomes of Futur were defined in advance by the BMBF (sponsor). The procedure relied on a wider process, using a variety of methods and instruments. It was decided that face-to-face meetings of working groups should be the central medium of discussions, and the Internet should be used for information purposes, supporting transparency and communication of the whole process. Setting the timeframe in Futur: The first phase of Futur started in the spring of 2001 and ran until the</p>	<p><u>Sources:</u> MASIS Report, Germany, p. 26-27.</p> <p>http://forlearn.jrc.ec.europa.eu/guide/7_cases/futur.htm</p> <p>Federal Ministry of Education and Research (BMBF): http://www.bmbf.de/en/12687.php?highlight=futur</p> <p><u>Additional information:</u> http://forlearn.jrc.ec.europa.eu/guide/7_cases/futur.htm</p> <p>Federal Ministry of Education and Research (BMBF): http://www.bmbf.de/en/12687.php?highlight=futur</p>	<p>Germany</p>



	<p>beginning of 2003. It was evaluated by an international expert panel in the autumn and winter of 2002. The results of this first phase of the Futur process were presented to the public in the summer of 2002. The second phase of Futur ran until March 2005 and in 2004 there was again an international expert panel to evaluate Futur. The third cycle of Futur began in the winter of 2005 and was due to end in late 2005. Designing the methodology (methodological framework) in Futur: The design of the methodology was discussed in the consortium as an answer to a BMBF call for tender. It was intended to make use of a mix of methods with a focus on participation, therefore different methods were applied. In reality, more workshops and conferences were – at the request of BMBF – performed than originally intended. Futur was relatively complicated. Different methods or better approaches (because no formal method was applied) were used and combined: different workshop formats, conferences, scenario writing, focus groups, online votes and online topic generation. For the topic generation, workshops (national, international, with futurists and other) and desk research were the method of choice. The results were four lead visions some of which, including interdisciplinary topics, have been included in BMBF projects. For example, the lead vision "Understanding Thought Processes" contributed to the founding of the National Bernstein Network for Computational Neuroscience.</p>		
<p>Citizens' Agenda on Science and Innovation 2010, Spain (several mechanisms)</p>	<p>Citizens' Agenda on Science and Innovation 2010: On the occasion of the Spanish Presidency of the European Union during the first half of 2010, and with the support of the Ministry of Science and Innovation of Spain, the Spanish Foundation for Science and Technology (FECYT) launched an initiative with which, according to its organizers "European citizens are to be able to send to the highest representatives of science and innovation in Europe what challenges should be facing in these two areas by 2030." This initiative came into being with the intention of becoming a new channel for popularising science and innovation, enabling citizens to actively participate, making them into stakeholders with a real impact on political decisions on science and innovation. To do this, the public were helped by leading figures on various subjects within science, technology and innovation, who helped them, thanks to their knowledge, in setting out questions and firming up various possible avenues for action. The Agenda process was: Firstly, an expert committee made up of 12 people chose 14 living European figures who have changed our lives through their research, discoveries and initiatives (7 from Spain and 7 from other European countries; coming from different origins: three physicists, two doctors, two engineers, a primatologist, a biochemical, a demographer, an economist, an architect, a political and a chef). These, in turn, chose which challenges science and innovation must have resolved by 2030. These 14 people proposed their 14 challenges to the public. FECYT arranged for The Agenda to be presented on social networks on the Internet, and set up the web page on which people could vote. In addition, teaching material was produced and uploaded to this website, to enable teachers to work on it with their students. The priority targets for The Agenda were young people and entrepreneurs in general. The challenges proposed were presented during an action aimed at society, allowing European citizens to choose and decide on which challenges will figure in The Agenda, with voting taking place between 24 April and 26 May 2010. An electronic scoreboard located in the hall of the Brussels European Council reflected in real time the results of citizen participation, and the European Council</p>	<p><u>Source:</u> MASIS Report, Spain, p. 22-23.</p>	<p>Spain</p>



	<p>of Science and Innovation Ministers, called the Competitiveness Council, received the final results of The Agenda during their meeting of 26 May in Brussels. (www.reto2030.eu/). This initiative received 107,309 votes (5,904 from young people from 247 school classes) with 706,912 visits to the webpage. Despite not having achieved the level of proposed participation (in its 2010-2012 strategic plan, its organizers intended to achieve 1% of the European population, which would have represented about 7 million votes, this result can be considered very positively because its novelty. The voting procedure could also have been more controlled (for instance: a single computer could vote several times and voters did not need to be identified). Nevertheless, this initiative, taken as an experiment rather than a genuine act of public participation in the process of science, has undoubtedly been relevant and one of the objectives of FECYT is to work on it with other stakeholders to make it into a new channel for public participation in the areas of science, technology and innovation.</p>		
<p>Foresight exercise, national strategy of RDI, Romania</p>	<p>Once the question is well perceived from the public at large we may talk about a bottom-up approach where the main actor is the wide public. This process is a time consuming one but the credibility of the results is higher and the first round outputs brings benefit not only to the scientific community but also to the population as a long-term outcome. Such an exercise has been running in Romania, namely a national foresight exercise that has been conducted in 2005- 2006 leading to the National Strategy of RDI whose the main instrument is the Second National Plan for RDI 2007-2013. More details and the main civil players involved into this milestone process have been pointed in section 3.1.1. In addition to this, worth to be mentioned is the call for proposal launched in June 2010; a national competition aiming to start through the winning projects a series of the four branch foresight exercises. These will focus on nanotechnologies, therapy cell, green energy and science services. A large consultation of civil society and specialists in the field will be required.</p>	<p><u>Source:</u> MASIS Report, Romania, p. 16.</p>	<p>Romania</p>



Mechanism	Description	References	Country
IMAGINE (Appreciative Inquiry, AI)			
Imagine Chicago, 1991-1992	<p>Imagine is based on 'Appreciative Inquiry' (AI). AI was developed by Suresh Srivastva and David Cooperrider in the mid-1970s, as a challenge to the problem-solving approach to the management of change. They felt that this approach was based on a view of human nature as a machine, with people like parts that could be fixed or replaced. They saw organisations as expressions of beauty and spirit - to be appreciated. The Imagine method was developed by a project called IMAGINE CHICAGO.</p> <p>During 1991 and 1992, Bliss Browne, a priest and banker, planned a pilot that would: Discover what gives life to Chicago; Provide significant leadership opportunities for youth. 1993-94 saw both city-wide and community-based pilots. City-wide, 50 young people were recruited and trained as interviewers. They interviewed about 140 citizens, identified as 'Chicago Glue'. The interviews were then summarised for three public events.</p> <p>Since 1995 the appreciative approach has been seeded, by forming partnerships, into over 100 community organisations, schools, communities of faith and cultural institutions. An example is the Urban Imagination Network. Six state schools and five Chicago museums are working to improve student reading comprehension.</p>	<p><u>Source:</u> The New Economics Foundation (NEC) (1998): PARTICIPATION WORKS! 21 techniques of community participation for the 21st century. The New Economics Foundation, p.28.</p>	United States

Mechanism	Description	References	Country
Installation			
Installation on Social Responsibility in Science - (to be presented at the ESOF-conference (European Science Open Forum) June 2014	<p>Installation on Social Responsibility in Science: We are an interdisciplinary group of people, who are building an installation about social responsibility of science. The installation is going to be both physical and digital. In diverse ways, it seeks to engage citizens, politicians, industry and scientists in the question of who should decide the direction of science.</p>	<p><u>Source:</u> Engage2020, survey: See data collection specification, section 3.1 in this report.</p> <p><u>Additional information:</u> http://english.breaking-entering.dk/</p>	Denmark



Mechanism	Description	References	Country
Lay representation in research ethics committees (REC)			
NHS conducted research - UK	Research Ethics Committees (RECs) review applications for all research conducted in the NHS and give an opinion about the proposed participant involvement and whether the research is ethical. Each REC must include a lay member, defined as someone “whose main personal or professional interest is not in a research area”. The National Research Ethics Service was established in 2007 to oversee and guide the individual RECs which work at a local level.	<p><u>Source:</u> MASIS Report, UK p. 23.</p> <p><u>Additional information:</u> http://www.nres.npsa.nhs.uk/</p>	United Kingdom

Mechanism	Description	References	Country
Participatory theatre	The players first perform a 10-15 minute play showing a protagonist trying to achieve a goal and failing. The play is then repeated. Members of the audience are invited to gauge whether the protagonist could at any point have behaved differently, with a better outcome. They are further invited to come onto the stage, replace the actor and try out their idea. It is usually evident very quickly whether or not that strategy for change works. The aim is to stimulate as many people as possible to try out ideas. The Brazilian theatre director, Augusto Boal, who developed these forms of ‘theatre of the oppressed’, calls the audience in Forum Theatre ‘spectactors’, reflecting the fact that they don’t just sit and watch.	<p><u>Source:</u> The New Economics Foundation (NEC) (1998): <i>PARTICIPATION WORKS! 21 techniques of community participation for the 21st century</i>. The New Economics Foundation, p. 40</p> <p>Smith, Graham (2005): <i>Beyond the ballot. 57 Democratic Innovations from Around the World</i>. The POWER Inquiry, p. 32</p>	
Cardboard Citizens	Cardboard Citizens is a homeless people’s theatre company which produces Forum Theatre pieces, playing mainly in homeless venues and schools. The plays address issues around homelessness, including everything from resettlement to abuse. The work is about understanding the complexity of the oppressions people find themselves confronted with, and identifying opportunities and mechanisms for change, both for individuals and for society. The company started life as a project of London Bubble Theatre in 1991. A number of user-friendly outreach workshops were organised in hostels and day centres around London; people who enjoyed them came together and devised a couple of shows which again toured before becoming Cardboard Citizens. Six years later,	<p><u>Source:</u> The New Economics Foundation (NEC) (1998): <i>PARTICIPATION WORKS! 21 techniques of community participation for the 21st century</i>. The New Economics</p>	United Kingdom



	<p>the company is independent, and members, who are or have been homeless, receive an Equity wage for their work.</p> <p>Cardboard Citizens is still running and has been making life-changing theatre with and for homeless people for 23 years.</p>	<p>Foundation, p. 41. http://cardboardcitizens.org.uk/</p> <p><u>Additional information:</u> http://cardboardcitizens.org.uk/</p>	
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Mechanism	Description	References	Country
Petition	Petition can be considered as a method for 'open' consultation – it provides a mechanism for citizens to raise issues directly to parliament, the executive or their local authority.	<u>Source:</u> Smith, Graham (2005): <i>Beyond the ballot. 57 Democratic Innovations from Around the World.</i> The POWER Inquiry, p. 34	
Petition regarding limitation of embryonic stem cell research, e.g. Germany	The German constitution (Deutsches Grundgesetz) provides, besides participation in elections at the federal and state (Länder) level, only a limited set of instruments of direct democracy to German citizens. One of them is the means of petitions to the Petition Committee (Petitionsausschuss) of the German Federal Parliament (Deutscher Bundestag), a right covered by Article 17 of the German constitution. Petitions can be submitted online or in printed form as an individual petition (submitted by a single person) or a public petition (to be signed by supporters) and may contain an appeal concerning federal laws or a complaint about a federal agency. Though successful petitions have no binding power to the parliament, 18,861 petitions have been submitted in 2009 with several petitions dealing with S&T priority setting or education policy, e.g. guaranty for a university place in a master course for bachelor students (42,720 supporters), or further limitation of embryonic stem cell research (1,714 supporters).	<u>Source:</u> MASIS Report, Germany, p. 23-24.	Germany
Petitions regarding biotechnology, nuclear energy etc. Switzerland	The political system of direct democracy allows the public to launch, at the national, cantonal and town level, a campaign to collect signatures for an initiative on any subject. Citizens have sometimes used it to influence the governance of science, for example on the issue of biotechnology, nuclear energy, or animal experimentation. Therefore citizen involvement is part of the political landscape of Switzerland, but it doesn't assure that the citizens' opinions are taken into considerations.	<u>Source:</u> MASIS Report, Switzerland, p. 17.	Switzerland



Mechanism	Description	References	Country
Public and stakeholder consultation			
Public consultation on the construction of the oil pipeline 'Burgas-alexandropolis'	The construction of the oil pipeline "Burgas-Alexandropolis": Discussion 'for, and 'against' the pipeline is still led after the initiation of the project in 2007 at the strong response of environmentalists. In 2009 the association "Clean Sea" organized a series of protests against the deployment of buoys facilities in the Burgas Bay to build the oil pipeline. The demonstration was organized alongside the public consultations on the project. According to the organization, the presence of the public from the Black Sea municipalities of rallies and public consultation was extremely important to hear the position of ordinary citizens in this project.	<u>Source:</u> MASIS Report, Bulgaria, p. 20.	Bulgaria
GM Nation? National public consultation on genetically-modified food, UK 2003, (different methods)	<p>Case study: GM Nation?</p> <p>Description GM Nation? was the consultation exercise on genetically-modified (GM) food that took place in the UK in the summer of 2003. As an independent evaluation of the consultation process states, the 'public debate was, for the UK, an unprecedented experiment in public participation. Here was an attempt to generate widespread interest and considered discussion about complex matters of science and policy amongst relatively large numbers of the lay public. Such a development would have been unthinkable in policy circles a decade ago.'</p> <p>Following public hostility to the introduction of genetically modified (GM) foods and crops in Britain, a government advisory body, the Agriculture and Environment Biotechnology Commission (AEBC), was influential in persuading the government of the need for a widespread public debate on the future of GM technology. The AEBC argued that any credible public debate needed to be carefully structured and facilitated independently of government. The AEBC had hoped to include innovative approaches to public engagement, such as consensus conferences but adequate funds were not made available by the Department for the Environment, Food and Rural Affairs (DEFRA). However, enough resources were provided for the independent steering committee to develop an innovative approach to consultation that included:</p> <ul style="list-style-type: none"> • Nine foundation discussion workshops to identify questions for the broader debate. These workshops were held around the geographical facilitators spread and each involved 18-20 participants and two facilitators. Eight of the workshops recruited members of the public representing different stages of life and two broad socio-economic groups. The ninth workshop involved participants 'actively involved' in GM. • An estimated 675 regional and local community open meetings, many of which were stimulated by a specially made film and other materials. Participants completed a questionnaire, the results of which were collated nationally. • A series of 10 closed focus groups involving a total of 77 citizens (chosen to represent different stages of life and socio-economic groups) to provide more structured analysis of issues and to act as a control to compare with the results of the local meetings. <p>Background material and the questionnaire were available by post or on</p>	<p><u>Source:</u> Smith, Graham (2005): <i>Beyond the ballot. 57 Democratic Innovations from Around the World.</i> The POWER Inquiry, p. 35-36.</p> <p><u>Additional information:</u> Burgess, Jacquelin and Jason Chilvers (2006): <i>Upping the ante: a conceptual framework for designing and evaluating participatory technology assessments.</i> <i>Science and Public Policy</i>, volume 33, number 10, December, p. 713–728.</p> <p>Rowe, Gene et al. (2005): <i>Difficulties in evaluating public engagement initiatives: reflections on an evaluation of the UK GM Nation?</i> Public debate about</p>	United Kingdom



	<p>the internet for citizens who were unable to attend local meetings. The website received over 2.9 million hits and 24,609 unique visitors, 60% of whom submitted feedback forms.</p> <p>In total 36,557 feedback forms were returned and analysed. The results of the debate conclusively showed the general unease about GM crops and food amongst the public, with little support for early commercialisation of GM crops in the UK. There were noticeable differences between the results from the open community meetings and the focus groups – the former were more strongly opposed; the latter more uncertain, although their views hardened as they learnt more about the issues. In March 2004 the government provided a rather guarded response to the GM Nation? debate, although it acknowledged that 'people are generally uneasy about GM crops and food, and that there is little support for early commercialisation of GM crops in this country'. It is unclear to what extent the public debate has affected government policy towards GM since the publication of their response.</p>	<p>transgenic crops. Public Understand. Sci. 14 (2005) 331–352.</p> <p>Rowe, Gene and Nick Pidgeon (2006): <i>A Comparison of Responses to Internet and Postal Surveys in a Public Engagement Context</i>. Science Communication, Vol. 27 No. 3, March 2006 352-375.</p> <p>Dryzek John S. et al. (2009): Promethean Elites Encounter Precautionary Publics The Case of GM Foods. Science, Technology, & Human Values, Vol. 34:3.</p> <p>Barbagallo, Fiona and Jill Nelson (2005): <i>Report: UK GM Dialogue</i>. Science Communication, 26: 318.</p>	
<p>The committee on Radioactive Waste Management (CoRWM), UK</p>	<p>The Committee on Radioactive Waste Management (CoRWM) was set-up in 2003 to review the options for managing the UK's higher activity solid radioactive waste, and to make recommendations on the option, or combination of options, that could provide a long-term solution, providing protection for people and the environment. In 2007 CoRWM was reconstituted with a largely new membership and new terms of reference. The role now is to provide independent scrutiny and advice to UK Governments on the long term management, including storage and disposal, of radioactive waste. Within this role the main task is to provide independent scrutiny on proposals, plans and programmes to deliver geological disposal, together with robust interim storage, as the long term management option for the UK's higher activity wastes. CoRWM members are all experts in relevant professional fields but it also runs public consultations. CoRWM has also responded to the Government's consultation on new nuclear build.</p>	<p><u>Source:</u> MASIS Report, UK, p. 25.</p> <p><u>Additional information:</u> http://www.corwm.org.uk/default.aspx</p>	<p>United Kingdom</p>



Public consultation on law on higher education, Poland, 2008	Law on Higher Education, Law on Academic Degrees and Academic Titles (since 2008) – the framework of the regulation e.g. consultation was conducted through numerous conferences and meetings, either with organized bodies or with groups of university researchers. In the framework of consultation, different parts of the changes were sent for consultation, e.g. on the model of academic careers, students' rights, women's participation, education standards, "flagship universities." Consultation with the academic communities, including students, consisted of three stages. They were launched through the debate organized by the Ministry of Science and Higher Education on 24-25 January 2008, on reforming the system of governance and funding of science and higher education. During these two days, the consultations were attended by about 280 academics, scientists, students and trade unionists. Opinions presented during the conference, and then submitted to the Ministry, were discussed by the Expert Panel on Framework of Reform of Science and Reform of Higher Education. This multi-stage public consultation (including meetings between the Ministry officials and the academic and student communities) increased the level of acceptance for proposed changes.	<u>Source:</u> MASIS Report, Poland, p. 15.	Poland
Public consultation on the strategy for energy development in Montenegro	In Montenegro, citizens are not involved in S&T decision making. Citizens are sometimes informed through media but they are not involved in any decision making process. There are some issues that the citizens were consulted on to a certain extent but this was rarely the case. One good example of citizens taking part in the decision-making process was the development of the strategy for energy development in Montenegro. Citizens and NGO organizations took an important part in these negotiations, which is very important considering the complexity of the energy sector and the exploitation of natural resources. New technologies were one of the key aspects that were promoted from the NGO sector in relation to environment preservation in.	<u>Source:</u> MASIS Report, Montenegro, p. 12.	Montenegro
Formulation of the National Strategy of RDI, Romania	Engagement is a term that can be attributed to every actor in the modern society. We all interact with the environment and consume resources, but some are only beneficiaries of what is being offered, without giving back something. According the latest sociological research, the public involvement in the civil society (measured as voluntary activity for non-official or Government related institutions) is rather poor, which is an understandable reaction to the state induced, forced collectivisation in the communist years. As a consequence, the contribution of the civil society to the creation of science related policies and decisions were also poor. However, some involvement in setting general directions and strategies for S&T are seen among those who work in this field. In the past 5 years, the members of the academic community were the most active, responding promptly to the public consultations call that lead to the formulation of the National Strategy of RDI. The following categories of actors were involved: <ul style="list-style-type: none"> • units and institutions from the RDI system, representative for their respective science and technology domains: research institutes, research centres, higher education institutions etc.; • major personalities in the scientific area, researchers and prestigious specialists with unanimously 	<u>Source:</u> MASIS Report, Romania, p. 14-15.	Romania



	<p>recognised competence in their S&T domains;</p> <ul style="list-style-type: none"> • Government authorities and representative economic agents; • representative civil society bodies <p>This effort involved six rounds of public consultations and the participation of over 800 representatives from the research institutes, private companies, NGOs, political decidents, as well as over 4.000 other persons consulted online.</p> <p>Expert panels were created, and the following procedure was employed: the project coordinators have selected, based on experience and expertise, a number of specialists from both the research field per-se and from the management, organisation, financing and capitalization of research. These persons were appointed panel coordinators and they were asked to recommend other experts (in a process called nomination-co nomination) who could contribute with an informed and pertinent opinion. All the experts who agreed to participate were involved in panel meetings workshops or DELPHI type questionnaire, and their answers and outputs, along with the database of experts, were gathered in a website built specifically for this project, http://www.strategie-cdi.ro/chestionar/. The evaluation of the nomination-co nomination procedure revealed a high degree of representatives for the whole spectrum of scientific research activities, and also for the RDI system at large. Such a system attracted for consultation, and finally reflected a pertinent point of view of the entire Romanian society (including Parliament, Government and Presidency) about the activity of scientific research in Romania.</p>		
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Mechanism	Description	References	Country
Public hearings	Public meetings (or hearings) are an extremely common form of consultation, since they are relatively quick and cheap to organise. There is no single format for public meetings, although they are typically open forums where citizens are invited to hear proposals from public authorities and are given the opportunity to respond. Meetings are usually organised by the public authority in question.	<u>Source:</u> Smith, Graham (2005): <i>Beyond the ballot. 57 Democratic Innovations from Around the World.</i> The POWER Inquiry, p. 28	
Hearings on urban planning, industrial plants, among others, Croatia	The most intensive involvement of citizens and civil society organizations (NGO, e.g.) in areas close to science and technology is through the public hearing procedures. The public hearing procedures are the mandatory for all actions with potentially high influence on citizen such as urban planning, installation of power plants, etc. Such public hearing is also mandatory in case of any new technology intervention in the environment and potentially dangerous technologies. This is the partly the legacy of self-management system from ex-Yugoslavia times when local government bodies had the power to influence or not approve the decisions from central government through public hearing process in the case of technology & environment protection. For Croatia as touristic destination preservation of the environment has been always very important issue. The legislative (Environment protection law) has introduced mandatory Environmental impact study and public hearing in the local community in case of any new industrial plant or other facility. Today civil society organizations (NGOs) are very active and strong in terms of mobilizing public support for their initiatives and actions.	<u>Source:</u> MASIS Report, Croatia, p. 16.	Croatia
Consultation of local inhabitants, nuclear waste disposal sites, Finland, 2008-2009	In assessment activities, broadly understood, there are certain established and more recent procedures that formalize consultation mechanisms. The Finnish Law of Environmental Impact Assessment (1994) purposes to strengthen public availability of regulatory information and public participation in environmental decision-making. In practice, the law has been implemented for example in environmental impact assessment of nuclear waste disposal sites, in which context consultation of local inhabitants have been organized. The requirement of broad-scale stakeholder consultation was also recently established in the "Rule of Regulatory Preparation" by the Ministry of Justice (2010), a rule that is applicable in a wider context of regulatory processes.	<u>Source:</u> MASIS Report Finland, p. 20. <u>Additional information:</u> http://www.tem.fi/files/18440/Fennovoima_YVA_suomi.pdf (in Finnish).	Finland



Mechanism	Description	References	Country
Public opinion surveys			
SpICES (Special Initiative on Citizen Engagement in Science), Atomium Culture	<p>HAVE YOUR SAY...About Science! "Citizens have a right - and are expected - to be involved in the crucial decisions of what their futures will look like and how science and technology can contribute to its betterment"</p> <p>As outlined in the framework for Responsible, Research and Innovation (RRI), the grand challenges facing society will have a better chance of being tackled if all relevant actors are fully engaged in the co-construction of innovative solutions, products and services. Thus RRI was being developed in order to foster the creation of a research and innovation policy driven by the needs of society and engaging all actors via inclusive participatory approaches. The Special Initiative on Citizen engagement in Science promoted by Atomium Culture aimed to assess how media can engage the public at large in a two-way dialogue about science-related issues in order to develop a more participatory way to develop science policy at European level. The pilot project was developed with Der Standard, El País, Frankfurter Allgemeine Zeitung, Il Sole 24Ore and The Irish Times and ran in 5 European countries (Austria, Germany, Ireland, Italy, and Spain) in April and May 2013.</p> <p>The results of the Initiative were submitted to the European Commission and supported as a contribution to the preparation of the topics of the first call for proposals of Horizon 2020 (notably the 'Engagement' part of the challenge 'Inclusive, Innovative and Secure Societies' in the Commission's proposal (former SiS))".</p> <p>Atomium Culture brings together some of the most authoritative universities, newspapers and businesses in Europe in the first intersectoral platform to promote knowledge sharing and "out of the box" thinking on issues regarding the development of a European knowledge society.</p> <p>Atomium Culture was launched publicly by the former President of France Valéry Giscard d'Estaing and by Michelangelo Baracchi Bonvicini, currently Honorary President and President of Atomium Culture, and by the leaders of the institutions engaged during the first conference on the 27 November 2009 at the European Parliament in Brussels. Atomium Culture was founded on the assumption that the active participation and cooperation between the core pillars of civil society is necessary for the development of a real knowledge society that depends for its growth on the production of new knowledge and its transmission through education (universities), its development and use through new industrial processes (businesses) and its dissemination through reliable information (media).</p> <p>In coordination with the third edition of the EISRI Summit, in September 2014, AC will develop on the pilot project launched in April 2013 to assess the opinion of the European public at large towards European research priorities. The 2014 edition of this initiative will focus on science-based policy making. The project will foresee to run an awareness campaign about science-based policy making with some of the leading mainstream media in Europe engaged in the platform of Atomium Culture: Frankfurter Allgemeine Zeitung (Germany), Der Standard (Austria), Il Sole 24 Ore (Italy), Rzeczpospolita (Poland), El País (Spain), The Irish Times (Ireland)) including a dedicated online section to allow the public at large to state their opinions and priorities for Horizon 2020. Timeline: A dedicated work group will begin to develop the content starting in April 2014 to outline key priorities and issues to bring to the attention of the public at large.</p>	<p><u>Source:</u> http://atomiumculture.eu/content/spices</p> <p><u>Additional information:</u> http://atomiumculture.eu/content/spices</p>	International



	<p>The initial list of issues and set-up of the awareness campaign and questions will be developed together with the media engaged in the platform of Atomium Culture, the European Commission, the European Parliament and the partners of the initiative. The project will be launched in September 2014 ahead of the EISRI Summit and will include a polling/voting system to see the priorities of the public at large and a call for questions that the public would like to ask to the European representatives and stakeholders present at EISRI Summit. The initial results will be presented during the EISRI Summit and a Report will be developed subsequently. Atomium Culture will at the same time launch a dedicated space to allow the public at large, through this social media tool, to follow the discussion of the EISRI Summit, come with questions and have a say on the conclusions.</p>		
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Mechanism	Description	References	Country
Science shops	<p>Science Shops are not “shops” in the traditional sense of the word. They are small entities that carry out scientific research in a wide range of disciplines – usually free of charge and – on behalf of citizens and local civil society. The fact that Science shops respond to civil society’s needs for expertise and knowledge is a key element that distinguish them from other knowledge transfer mechanisms.</p>	<p><u>Source:</u> http://www.livingknowledge.org/livingknowledge/science-shops</p>	
<p>PERARES – Public Engagement with Research and Research Engagement with Society, (new approach), 2010-2014</p>	<p>PERARES is four-year project and aims to strengthen public engagement in research by involving researchers and Civil Society Organisations (CSOs) in the formulation of research agendas and the research process. The consortium consists of 27 partners from all over Europe, mostly universities with science shops, universities that want to establish a science shop, stand-alone science shops and CSOs. The project is still on-going, it started in May 2010 and is due to finish in April 2014. The PERARES project 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. In order to strengthen local co-operation in setting research agendas, PERARES is setting up ten new science shops in Cambridge, Dublin, Lyon, Grenoble, Crete, Stavanger, Sardinia, Cyprus, Estonia, and Israel (plus a range of other objectives).</p>	<p><u>Source:</u> Tehnopolis group (2012): Sis Case Studies, May 18, first version, pp. 109ff: See data collection specification, section 3.1 in this report.</p> <p>http://www.livingknowledge.org/livingknowledge/perares</p> <p>http://cordis.europa.eu/result/report/rcn/52892_en.html</p> <p><u>Additional information:</u> http://www.livingknowledge.org/livingknowledge/perares and http://cordis.europa.eu/result/report/rcn/52892_en.html</p>	<p>International, EU funded.</p>



<p>Science shops, Germany</p>	<p>Wissenschaftsladen (Science shops): Science shops seeks to bridge the gap between universities and citizens by presenting scientific knowledge and research results in a way understandable by the general public. Activities include science cafes, job portals and job fairs, workshops and trainings on new occupational images (e.g. around new energies and sustainable technologies), educational trainings, teaching materials (e.g. for biological diversity or healthy diet), and excursions.</p>	<p><u>Source:</u> MASIS Report, Germany, p. 91.</p> <p><u>Additional information:</u> Examples: kubus - Kontakt und Beratungsstelle Um- weltchutz: http://www.zewk.tu-berlin.de/v-menue/kooperation_wissenschaftsgesellschafts/kubus</p> <p>Wissenschaftsladen Bonn: http://www.wilabonn.de,</p> <p>Wissenschaftsladen Dortmund: http://www.wissenschaftsladen-dortmund.de,</p> <p>Wissenschaftsladen Hannover: http://www.wissenschaftsladen-hannover.de,</p> <p>Wissenschaftsladen Tübingen: http://www.wilae-tuebingen.de</p>	<p>Germany</p>
<p>Wetenschapswinkels' in some Flemish and Francophone universities, Belgium</p>	<p>One way of stimulating upstream engagement is stimulating input for research questions by civil society organisations. Some Flemish and Francophone universities have 'Science shops' (wetenschapswinkels) meant to facilitate contacts and cooperation between civil society organisations and (students at) university. NGOs can formulate research questions they would like to see addressed and it is then attempted to encourage students to take up the topic for their master thesis.</p>	<p><u>Source:</u> MASIS Report, Belgium, p. 19.</p>	<p>Belgium</p>



Mechanism	Description	References	Country
Stakeholder consultation (consultative panel)			
BeWater project - Making society an active participant in water adaptation to global change, 2013-2017	<p>The BEWATER project (2013-2017) aims to promote dialogue and collaboration between science and society in sustainable water management in the Mediterranean. Project partners will organise participatory processes involving scientists and other stakeholders in four pilot river basins throughout the Mediterranean (Catalonia, Cyprus, Slovenia and Tunisia). Each will identify and share the challenges of climate change in their particular region and the various water management options available, designing joint plans for adaptation to climate change in their regions. BEWATER will help to find sustainable and inclusive solutions to key challenges facing European society, to incorporate Science in Society issues into research and innovation systems and to improve transnational cooperation. Objectives of the BEWATER project are to:</p> <ol style="list-style-type: none"> 1. launch an innovative process of societal transition towards a more sustainable, resilient and adaptive river basin management. 2. develop an innovative, stakeholder-driven method. 3. promote the transfer of BEWATER results into policy. 4. promote mutual and multi-directional learning among the project partners, entities and actors within and between the river basins and with the broader society. 5. raise awareness and promote a bottom-up approach within the scientific community for planning and implementation processes. 6. enhance social participation and build societal resilience. 7. explore and assess opportunities for Research & Innovation (R&I) collaboration between organisations, universities, SMEs and civil society actors to boost innovation in the water sector. 	<p><u>Source:</u> http://www.efi.int/portal/research/projects/?todo=3&projectid=213</p> <p><u>Additional information:</u> http://www.efi.int/portal/research/projects/?todo=3&projectid=213</p>	International, EU funded.
iFUTURE (in Spread project), 2011-2012 (several mechanisms)	<p>SPREAD Sustainable Lifestyles 2050 is a European social platform project running from January 2011 to December 2012. Different societal stakeholders – from business, research, policy and civil society – are invited to participate in the development of a vision for sustainable lifestyles in 2050. This process will result in a roadmap for strategic action for policy makers and will deliver innovative ideas for business, research and society, regarding the enabling of sustainable lifestyles in European society. The project addresses the challenge of maintaining or improving quality of life of an ageing European society while at the same time reducing current levels of energy, transport and resource use. Societal innovation and significant changes in behaviours and lifestyles are vital to achieve long-term economic prosperity for all within the bio-capacity of our planet. Knowledge on sustainable lifestyles is scattered and so are sustainable project initiatives. We aim to bring together current knowledge, experience and relevant stakeholders in a dialogue process, in order to articulate and clarify the main societal challenges that we face in our attempts to reach more sustainable lifestyles. It is also important to analyse the drivers for unsustainable consumption patterns and stop them in order to make the transition towards sustainable lifestyles. The overall approach of the SPREAD Sustainable Lifestyles 2050 is to consolidate the existing theoretical knowledge and practical experiences</p>	<p><u>Source:</u> http://www.sustainable-lifestyles.eu/project-content/project-approach.html</p> <p><u>Additional information:</u> http://www.sustainable-lifestyles.eu/project-content/project-approach.html</p>	International, EU funded.



	<p>and best practices on sustainable ways of living, identify barriers and drivers for more sustainable lifestyles, and to provide a roadmap towards scenarios of sustainable lifestyles in 2050 developed through back-casting methodology. The main feature of the project is the stakeholder dialogue and close participation organized through a social platform, a number of thematic and cross-cutting working groups, a people’s forum and an on-line community facilitating a broad societal engagement of various stakeholders throughout the project. Thus the nature of this project is participatory and engaging, and is based on the interaction between a wide variety of stakeholders.</p> <p>The following components are part of our work flow: Mobilisation and analysis of current knowledge, experiences, and promising practices for environmentally, socially and economically sustainable lifestyles - including issues related to health, welfare, equity and ageing; Visualisation of concepts, visions, ideas and actions for new models of sustainable ways of living; Development of scenarios for sustainable living in 2050; Backcasting from our future vision of sustainable living in order to develop a roadmap of action strategies for individuals, businesses, civil society, research and policy makers that aims to mainstream/ or ‘spread’ sustainable lifestyles across Europe now and into the future. Preparation of policy recommendations and a research agenda that addresses the main challenges society faces in the pursuit of more sustainable lifestyles.</p>		
<p>Flagship project - Forward looking driving chance, 2013-2015</p>	<p>FLAGSHIP is an FP7 project, funded by the European Commission (DG RESEARCH) under the “Socio-Economic Sciences and Humanities” theme, with the aim of developing a “Forward Looking Analysis of Grand Societal Challenges and Innovative Policies”. The FLAGSHIP project thus aims at driving change, supporting the policy shift from adapting to changes through short-term policy responses, towards anticipating, welcoming and managing changes properly. The FLAGSHIP project brings together a multidisciplinary team with recognised records of excellence in qualitative, as well as in quantitative forward-looking analysis. FLAGSHIP partners have substantially contributed, individually and collectively, to previous advancements in the field of forward looking analysis and are therefore fully committed to “put FLA knowledge to work”, applying it to the formulation of policies that effectively address main challenges faced by the EU, and the world as a whole. The project is also supported by a Scientific Advisory Board comprised of experts in policy analysis in the fields of economy, climate change, international governance and science and technology innovation.</p> <p>FLAGSHIP objectives: Take stock, assess and analyse the state-of-art of Forward Looking Analysis (FLA) methodologies; Develop innovative FLA quantitative and qualitative tools, methods and models; Apply and combine these enhanced tools and methods in a coherent framework to support European policies addressing grand societal challenges, namely the environmental, social and economic and governance challenges.</p> <p>FLAGSHIP expected impacts: Development of policy applications, through the production of a set of concrete policy recommendations for European institutions, and all stakeholders striving to exploit the potential of transition and change for the future of the European Union; Enhancement</p>	<p><u>Source:</u> http://flagship-project.eu/.</p> <p><u>Additional information:</u> http://flagship-project.eu/.</p>	<p>International, EU funded.</p>



	<p>of FLA methodological approaches, through the development of an enhanced set of FLA quantitative and qualitative tools, methods and models.</p> <p>Four thematic and methodological workshops will be organised during the project lifetime, with the aim of seeking feedback of relevant stakeholders. Each one-day workshop includes: the presentation of project progresses both in terms of conceptual and applied work programme; interventions and informed semi-structured discussions among 30-40 key experts who participate on an invitation basis. To facilitate semi-structured discussions, selected participants receive, before the workshop takes place, project reports edited in a non-technical language as background papers for policymakers and stakeholders. The workshops are tailored on the specific expertise of various policy makers and stakeholders consulted. After each workshop, background papers are finalised and published as FLAGSHIP Policy Briefs. Outputs of project workshops will also contribute to the FLAGSHIP Reference Document.</p> <p>1st Workshop, "Setting the framework: a multidisciplinary global perspective", took place in Ventotene, Italy, on 14-15 June 2013; 2nd Workshop, "Economic, social and environmental challenges and their feedback into integrated scenarios building", to be organised in May 2014 in Paris, France (exact date to be announced); 3rd Workshop, "Governance challenges, territorial dynamics and their feedback into integrated scenarios building", to be organised in September 2014 in Nice, France (exact date to be announced); 4th Workshop, "Major results and policy recommendations", to be organised in June 2015 (exact date and location to be announced).</p>		
Health Impact Assessment, inclusion of health considerations, 3-day HIA workshop, Israel	<p>Since the early 2000's an initiative to promote Health Impact Assessment within a broader context of integrated assessment of planning and policies has been promoted in Israel. An important component of this initiative is public participation and reducing health inequities. The idea is promoted by the "Israeli HIA Forum" (IHIAF), Healthy Cities Network and also by the ministry of health and ministry of environment. IHIAF members from the Bar Ilan University Environmental Law Clinic suggested revising Environmental Impact Assessment laws to include health considerations. IHIAF initiated in 2010 a three day HIA workshop for decision-makers and practitioners with international experts, and performed case studies on urban regeneration and on regional planning, focusing on adaptation of HIA to the local Israeli context.</p>	<p><u>Source:</u> MASIS Report, Israel, p. 22.</p>	Israel
R&D days organised by TÜBITAK, Turkey	<p>Upstream public engagement has been tried to be fulfilled through the support of projects submitted by Public Institution. During the preparation and development of these projects, the demands and needs of the public are considered. Another example is the R&D days organized by TÜBITAK. These activities take place at different regions. Participants consist of governors, university presidents, presidents of chambers of commerce and industry as well as senior executives of the provinces and representatives from the business enterprise sector who have conducted R&D projects. They discuss needs and problems of the region and possible developments in STI area, particular to that region. Future projects are formed in search of solution to regional problems.</p>	<p><u>Source:</u> MASIS Report, Turkey, p. 21-22.</p>	Turkey



Stakeholder consultation, 'exploratory workshops', discussion of future research needs, Academy of Finland	Priority setting, for example in the preparation of new research programmes, for the Academy of Finland and Tekes – the Finnish Funding Agency for Technology and Innovations, often takes place through committees and working groups. The Academy of Finland also occasionally organizes “exploratory workshops”, in which researchers and stakeholders in the field are invited to discuss future research needs. The scope of stakeholders contributing to priority setting changes case-by-case, and it can cover students in the preparation of policies for higher education or some occupational groups (e.g. teachers or professionals in the field of medicine) if the issue is relevant to them. Increasing usage of spokes-persons in making clarifications and pre-studies for regulatory preparation is a current tendency in Finland, which may have a narrowing impact on the breadth of stakeholder consultation. The strength of using spokes- persons is that they can involve an “independent” and “neutral” perspective on the issues under preparation. The downside is that key actors and stakeholders do not necessarily feel ownership with the reforms proposed by outside experts.	<u>Source:</u> MASIS Report, Finland, p. 19.	Finland
Stakeholder consultation, Foresight exercise, R&D centre, Poland	Social consultation was used as a mechanism for priority setting in science and technology policy only once by the National R&D Centre, a governmental agency for applied research reporting to the Ministry of Science and Higher Education. On 12 May 2010 the National R&D Centre invited the research and business community “to identify areas where there are real chances of S&T success and sufficient research potential.”	<u>Source:</u> MASIS Report, Poland, p. 14-15.	Poland
Stakeholder 'consultative panel', part of the assessment procedures of research proposals sent to FORMAS, Sweden	The assessment procedures of research proposals sent to Formas (Swedish Council for Environment, Agricultural Sciences and Spatial Planning) contains elements of upstream engagement. Stakeholders are part of the review groups and “stakeholder involvement” is one of the evaluation criteria. Scientific quality and value for/impact on society is said to be counted on equal manners.	<u>Source:</u> MASIS Report, Sweden, p. 18.	Sweden
'Participatory stakeholder workshops'- S&T strategy, Turkey	National Science and Technology Policies Implementation Plan for 2005-2010. TÜBİTAK, in collaboration with the relevant public agencies, academia, private sector and the NGOs developed a National Science and Technology Strategy spanning the timeframe 2005-2010. As the first plan aimed to springboard the country towards the long-term goals and expectations that are foreseen for the year 2023, the National Science and Technology Policies Implementation Plan (BTP-UP) was established for the five year strategy timeframe between the years 2005-2010. Participatory workshops attended by all parties involved in RDI (CSOs, public agencies, universities and private sector) were organized and a jointly agreed vision and mission of the country's S&T strategy was adopted.	<u>Source:</u> MASIS Report, Turkey, p. 20.	Turkey
The Nuclear Decommissioning Authority, public consultation with stakeholders	The Nuclear Decommissioning Authority was created in 2005 to decommission and clean-up civil nuclear facilities. It owns 19 former UKAEA and BNFL sites, built during the UK's early nuclear programme. It is currently running a public consultation on the Authority's medium-term strategy and consults annually on its business plan. There have been national and site specific stakeholder groups that meet regularly. The duty to engage and consult with stakeholders was written in to the Act that	<u>Source:</u> MASIS Report, UK, p. 26. <u>Additional information:</u> http://www.nda.gov	United Kingdom



on business plan, UK	created the NDA in 2004.	v.uk/stakeholders/	
National Advocates (Ambassadors), Bonus Programme	The BONUS program is a multinational, policy-driven program, which funds research related to the Baltic Sea system. Half of its funding comes from the EU's Research Framework Program (FP7), whereas the other half comes from the national funding institutions in the Baltic Sea countries. As the aims of the BONUS program have political relevance, the formulation and update of the strategic research agenda of BONUS have made use of relevant stakeholders, most importantly decision-makers, funders, and members of the scientific community. The involvement of stakeholders in the implementation of BONUS is also required in the co-decision by the European Parliament and the Council (BONUS law). In the so-called strategic phase of BONUS (2010–2011), funding was allocated to selected national advocates in the Baltic Sea countries whose task was to facilitate communication between the national stakeholders and BONUS, advance the creation of stakeholder platforms at national level, conduct a stakeholder analysis in each country, and disseminate information about BONUS in national languages. In the workshops, the relevant research areas for the BONUS strategic research agenda were discussed. The advocate work contributed to building a national stakeholder network from the point of view of the specific interests for BONUS, including knowledge on the relevant national stakeholders. The stakeholder network was later contacted in wide stakeholder consultations for the development of the strategic research agenda for BONUS.	<p><u>Sources:</u> http://www.bonusportal.org/files/1447/BONUS_advocate_report_2011.pdf</p> <p>http://www.bonusportal.org/files/1448/BONUS_advocate_report_2011_annexes.pdf</p> <p><u>Additional information:</u> http://www.bonusportal.org/files/1447/BONUS_advocate_report_2011.pdf</p> <p>http://www.bonusportal.org/files/1448/BONUS_advocate_report_2011_annexes.pdf</p>	International, EU funded
Societal Advisory Board (SOAB) of the Joint Programme Initiative More Years Better Lives	13 European countries support this joint programming initiative. One of the aims of the JPI-MYBL is to consider societal concerns and implications within the JPI related to research on demographic change. In addition to having a scientific advisory board, the JPI has a societal advisory board (SOAB). The SOAB identifies opportunities and gaps in the research landscape from the societal point of view. It has evaluated the strategic research agenda drafts in detail, suggested modifications and indicated possible missing topics; it has also advised the JPI MYBL on the implementation and effective dissemination. The members are either individuals or they represent organisations, such as trade unions and insurance companies.	<p><u>Source:</u> http://www.jp-demographic.eu/about/documents/full-version-of-sra</p> <p>http://www.ohsjd.org/Resource/SOABpresentation.pdf</p> <p><u>Additional information:</u> http://www.jp-demographic.eu/about/documents/full-version-of-sra</p> <p>http://www.ohsjd.org/Resource/SOABpresentation.pdf</p>	International, EU funded.



Stakeholder 'technology foresight exercise', Ireland	A technology foresight exercise undertaken in 1999 was managed by the state agency, Forfás, on behalf of the Irish Council for Science Technology and Innovation. It involved stakeholders in business, higher education, research and the policy sector. Forfás also managed a technology assessment in 2006-7 of nanotechnology which was also very limited in its societal reach. Neither of these exercises accommodated citizen/CSO involvement.	<u>Source:</u> MASIS Report Ireland, p. 15-16.	Ireland
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Mechanism	Description	References	Country
STI councils			
Business Advisory Council & the National Labour Committee, Albania	Some consultations has been ad-hoc in areas of environment, health, transport, while others have been institutionalized such as the Business Advisory Council set up by the Ministry of Economy, which discusses all draft legislation affecting business and, the National Labour Committee, which brings together representative of the government, employers and employees to discuss a wide range of social and economic issues.	<u>Source:</u> MASIS Report, Albania, p.15.	Albania
Central Medical Ethics committee, Latvia	As for citizen engagement in assessment related to S&T, mention should be made of the effort to introduce formalised mechanisms for the participation of laymen and NGO representatives in national medical ethics committees. For instance, the statute of the Central Medical Ethics committee stipulates inclusion of individuals representing the institution of church as well as of the unions of pensioners and disabled persons in its composition. However, aside from the formal empowerment, it is still an open question regarding the actual role and impact of laymen participation in the decision-making processes within these expert-led committees. As noted by researchers, there is a relative absence of ethical debate despite the large number of ethical committees. For the time being also the role of local patient organisations is assessed as rather weak in terms of establishing equal partnership with the respective specialists.	<u>Source:</u> MASIS Report, Latvia, p. 21.	Latvia
Committee - preparation of Estonian research and development and innovation strategy (2007-2013) - knowledge-based Estonia + evaluation conference	Estonian Research and Development and Innovation Strategy 2007-2013 "Knowledge-based Estonia" (R&D&I strategy) was prepared by a special committee. Representatives from different institutions participated in the committee – ministries, universities, research institutions, Estonian Rectors' Conference, enterprise sector, Estonian Academy of Sciences, Bank of Estonia. The draft of the strategy was sent for comments to all research and development institutions, to bigger professional unions and unions of enterprises that are involved in R&D&I, to innovation support structures and organisations that carry out innovation policy studies, altogether approximately 120 organisations. There was an extensive public debate on the strategy. The Estonian Research and Development and Innovation Strategy 2007-2013 "Knowledge-based Estonia" was approved by the Estonian parliament Riigikogu on February 7, 2007. In 2009 there was a mid-term evaluation conference about the implementation of the strategy where all main stakeholders participated. This wide engagement is a good way to win public support and to raise the public awareness in case of new policies. But it is very difficult to manage and organise wide public debate, as many opinions may be controversial and as one cannot accept all ideas and proposals, it may create certain disappointments.	<u>Source:</u> MASIS Report, Estonia, p. 15.	Estonia



Committee on 'Green Universities' (between universities and local community), Israel	At various Israeli universities several committees include public representatives. Examples include committees on having "Green universities", committees working on improving the ties between the university and the local community.	<u>Source:</u> MASIS Report Israel, p. 22.	Israel
Council for Scientific Research Activities, Montenegro	Relating to public engagement, there is an institution called "Council for Scientific Research Activities" which is appointed by the Government based on the Article 7 of the Law on Scientific - Research Activities for the purpose of improvement of scientific research activities in Montenegro. The decision concerning the appointment of the Council was published in the Official Gazette of the Republic of Montenegro 56/06, 25/07 and 38/08). Article 8 of this Law provided competences of the Council. It lays down that the Council should analyse conditions and achievements within scientific and research areas and give professional proposals to the Government. It is authorized for: Preparing and proposing of the Strategy on Scientific - Research Activities; proposing of priorities from the Strategy for the current year; offering opinion on criteria for election in academic titles; giving opinion on laws and other regulations within the area of scientific - research activities and of other areas, which provide general conditions for fostering scientific - research activity and utilization of results; giving opinion during procedures for developing a range of financial resources for funding priorities from the Strategy; monitoring of the Strategy realization; cooperation with the Council for Higher Education; carrying out other tasks which are prescribed by the Law and act concerning establishing of the Council. Pursuant to Article 14 of the Law and Article 3 of the Decision concerning the establishment of the Council, there are 11 members of the Council, appointed by the Government for a period of six years. The council consists of six members from a list of prominent experts within the area of higher education, science, technology and the arts who are appointed following their proposal by the universities and five members from the areas of industry, social activities and other relevant institutions. By appointing a representative from the Chamber of Commerce as a member of the Council, the private sector has been included in policy development within the area of higher education. The council is the highest-level advisory body for scientific research policy and strategic planning, as well as for the implementation of activities related to this issue. Even though that the council represents good practice in relation to the aforementioned research policy, however it could be said that there is still no strong formalized engagement of citizens (either members of NGOs or individual) in priority setting and assessment activities with regard to science and technology. This is one of the weaknesses of the research policy in Montenegro. Not all input that was given from the NGO sector was on a formal or consistent basis. Only periodically were their initiatives from the NGO sector to contribute to SiS issues.	<u>Source:</u> MASIS Report, Montenegro, p. 11-12.	Montenegro



Economical, Social and Environmental Council (CESE), France	The traditional form of inclusion of civil society in policy setting (including science policy) is through the Economical, Social and Environmental Council (CESE, Conseil Économique, Social et Environnemental) which includes trade unions, economic actors, mutual benefit societies and family associations among its members. It issues opinions and recommendations at the request of the government or on its own initiative. There have been recent publications on health and environmental topics.	<u>Source:</u> MASIS Report, France, p. 14-15. <u>Additional Information:</u> http://www.conseil-economique-et-social.fr/ces_dat2/som-en.htm	France
Committees on ethical approval of biomedical experiments, Israel (plus other national committees)	In most committees there is a tradition to have room for "public representative". In Helsinki committees dealing with the ethical approval of biomedical experiments there is usually a lawyer, philosopher or Rabbi serving in the committee, among other things also to bring the "public perspective". Other committees with similar mechanisms are the committees for building and planning led by the ministry of interior that have experts from various disciplines but also according to the topic discussed can have citizens representatives, especially those living nearby the area affected. The Israeli parliament (Knesset) hearings in the various subcommittees usually invite representatives of stakeholders of all sorts, depending on the topic involved. Some representatives are more established in specific issues (e.g. environment, health) thus their invitation is assured and sometime because of political or power issues, even among the various public groups themselves, there are groups who can be marginalised in the process of decision making. As security issues are so prominent in many of the discussions this can also have an influence on public participation especially from minority groups.	<u>Source:</u> MASIS Report Israel, p. 21-22.	Israel
High Council for Science and Technology, Portugal	The most important is the Conselho Superior da Ciência e da Tecnologia (CSCT) [High Council for Science and Technology], an independent consultative body with administrative autonomy. The CSCT was subject to a restructuring process designed to enhance its independence and enable it to provide financial and support services. The CSTC includes representatives of a wide spectrum of organizations, such as industrial consortia, universities and polytechnics, trade unions, students' associations, municipalities, political parties, learned societies and science academies.	<u>Source:</u> MASIS Report, Portugal, p. 14. <u>Additional Information:</u> see current legislation: http://alfa.fct.mctes.pt/apoios/unidades/regimejuridico.phtml.en	Portugal
Knowledge chambers, stakeholder consultation, Netherlands	Citizen involvement is taken broadly here, in the sense of representation of societal interests in priority setting. Until recently, a system of area councils (sectorraden) existed, in which representatives from science, government and society (among others civic society organizations) discussed research priorities and research agenda from the perspective of societal challenges. Councils existed since the late 1970s in the following areas: • Health • Environment and nature • Agriculture • Development Several other councils were proposed but less persistent and successful. The system has been abolished over the last few years and it was replaced by departmental knowledge chambers, in which similar types of participants are consulted by the ministries about research priorities and agendas. The ministries now play a stronger role than before, but the system is too recent to say much about its functioning.	<u>Source:</u> MASIS Report, Netherlands, p. 16.	Netherlands



Latvian Council of Science (LCS)	Mention should be made of the recent effort to broaden the composition of the Latvian Council of Science (LCS) in June 2010, which now includes representatives from the Employers' Confederation of Latvia, the Association of Latvian young scientists, the Association of State research institutes, six ministries and the Rectors' Council along with the formerly already present delegates from the Latvian Academy of Sciences, the Latvian Union of Scientists and LCS expert commissions. Yet, this extension mainly covers a wider representation of the scientific community, policy-makers and business representatives, but not other groups of society. Thus, the allocation and distribution of public research funding in Latvia is mainly decided upon by the government (and ministries) and to a large extent by the scientific community itself without any involvement of the ordinary citizens in the debate on the research priorities to be addressed by national science.	<u>Source:</u> MASIS Report, Latvia, p. 21.	Latvia
National committees for research ethics, Norway	Three National Committees for Research Ethics were set up in 1989. The committees for Medical Ethics (NEM), for Ethics in Science and Technology (NENT) and for Ethics in the Social Sciences and the Humanities (NESH) are administrated under the auspices of the Research Council, but operate as independent bodies with both advisory and informative functions. The committees work to enhance researchers' ethical awareness, encourage public debate on research-related ethical matters and have been charged with developing ethical guidelines for research.	<u>Source:</u> MASIS Report, Norway, p. 16. <u>Additional information:</u> www.etikkom.no	Norway
The science and technology council, Slovenia	Direct involvement of citizen in R&D institutions we can find in The Science and Technology Council. It is top advisory body of the Government of Republic of Slovenia with members from the research community, higher-educational institutions, the business community, the government and public. It recommends to the government the key priorities and objectives for the National Research and Development Programme, monitors the implementation of the research policy, suggests to the government eventual changes in the science and technology policy and issues its opinion on all other questions of relevance for R&D. Members shall be proposed by research organisations, universities and independent higher education institutions, the Slovenian Academy of Sciences and Arts, business and expert associations and other non-governmental organisations. Six Council members shall be appointed by the Government from among researchers so that all the sciences are represented, six members are appointed from those involved in technological development and representatives of companies, one member from the general public and one member as a representative of the main trade unions in the area of R&D.	<u>Source:</u> MASIS Report, Slovenia, p. 17.	Slovenia



<p>The Supreme Council for Science and Technology (SCST), Turkey</p>	<p>All of the below-mentioned projects, plans, strategies, and targets for STI-driven, sustainable growth have been resolved by decree of the highest-ranking STI policy and decision-making body in Turkey, namely the Supreme Council for Science and Technology (SCST). SCST is granted the role of identifying, monitoring, and coordinating policies in S&T areas in accordance with national goals for economic and social development and national security. Based on twenty permanent members chaired by the Prime Minister, over one hundred different actors from governmental bodies, higher education and private sectors are represented in SCST meetings. Hence, SCST meetings culminate in governmental and non-governmental stakeholders from across Turkey. Moreover, there are individual organizations that are continuously contributing to the S&T policy-making process, namely the Turkish Statistical Institute, State Planning Organization, Small and Medium Industry Development Organization, Turkish Patent Institute, The Council of Higher Education of The Republic of Turkey, The Turkish Academy of Sciences, Technology Development Foundation of Turkey and the Scientific and Technological Research Council of Turkey (TÜBİTAK). Together with other institutions that uphold various roles in STI policy implementation, there exists a diverse policy mix to foster STI-driven objectives in Turkey. There are discussions and initiatives that focus on and aim to promote upstream public engagement. One example is the increase in the number of participants at Supreme Council for Science and Technology (SCST/BTYK) meetings. The participation of stakeholders in SCST meetings contributed considerably to the awaited shift of one-way science policy towards science policy formed upon public engagement. A more recent example is the Supreme Council for Science and Technology's December 2009 (SCST/BTYK) meeting. SCST/BTYK decided to begin preparing a national science, technology and innovation action plan for the period 2011-2016. In line with this decision, in June 2010 SCST/BTYK decided to form working groups that consist of experts from public and private sector as well as from universities in order to prepare national R&D strategies in the fields of energy, water and food. The upstream public engagement has been tried to be fulfilled through the support of projects submitted by Public Institution. During the preparation and development of these projects, the demands and needs of the public are considered.</p>	<p><u>Source:</u> MASIS Report Turkey, p. 19-21.</p> <p><u>Additional information:</u> http://www.tubitak.gov.tr/</p>	<p>Turkey</p>
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Mechanism	Description	References	Country
Systematic Tool for Behavioural Assumption Validation and Exploration (STAVE)			
PACHELBEL project (Policy Addressing Climate Change and Learning about Consumer Behaviour and Everyday Life)	STAVE; is a tool to support policy making and implementation for sustainable consumption; is a strategy to link the sphere of policy-making with the sphere of everyday lay citizen behaviours; entails a set of procedures/methods to identify policy-makers' concerns, engage citizens in reflecting about the policy area, capture the related everyday behaviours and discourses, and feed them back to the policy makers.	<u>Source:</u> Engage2020, survey: See data collection specification, section 3.1 in this report. <u>Additional information:</u> www.pachelbel.eu	International, EU funded.

4.4 Public deliberation

– the aim is to facilitate group deliberation on policy issues of where the outcome may impact decision-making. Information is exchanged between sponsors and public representatives and a certain degree of dialogue is facilitated. The flow of information constitutes two-way communication.

Mechanism	Description	References	Country
21st Century Town Meeting (by AmericaSpeaks)			
Imagine Jersey 2035	Imagine Jersey 2035 was a project that consulted the citizens of Jersey on how the island government should tackle the challenges of the ageing population. The aim was to build the capacity of the States of Jersey to engage the public and develop policies reflecting citizens' informed views. This included raising awareness and understanding among the general public of the challenges and trade-offs facing the States of Jersey and for the Government in turn to understand the public's views and preferences on these issues. Process: Involve designed a process which was tailored to the specific situation in Jersey and which built on the skills of the government. The consultation combined: <ul style="list-style-type: none"> • Two deliberative conferences (one for citizens of mixed ages and one for 	<u>Source:</u> Involve (2008): Imagine Jersey 2035. Preparing for the future. Available at: http://www.gov.je/SiteCollectionDocuments/Government%20and%20administration/ID%20ImagineJerseyFinal%20Re	States of Jersey



	<p>young people) • An online survey • A written consultation.</p> <p>The results of these were analysed and produced in a final report. As part of the preparations, Involve ran a one day training session on public engagement and facilitation to build the skills of States of Jersey staff to organise and run future consultations.</p> <p>At the conferences, participants watched presentations on the ageing society and some possible policy choices and then discussed the issues in small groups, facilitated by trained State officials. After the discussions, the participants used electronic voting pads to vote on pre-agreed questions. In the cases where participants were unhappy about the wording of the questions these were clarified or changed accordingly on the spot. The conferences also used a bespoke approach called the “trade-off game” to support discussion around the compromises that will be needed. Participants were given cards with different policy options showing how much money each option would generate or save. Each group had to choose a combination of policies to address the projected annual deficit for 2035. This encouraged participants to consider the options as part of the wider whole and recognise the trade-offs involved. A changed political climate increased public confidence and ownership over future decisions around the ageing society, as well as more informed decisions and increased awareness amongst the general public of the challenges facing Jersey. States of Jersey gained a much clearer understanding of which options the public would support, accept or oppose. Institutional capacity building enabled the States of Jersey to take an active role in drafting the agenda, managing conferences, and facilitating discussions on the day.</p>	<p>port%2020100323.pdf</p> <p><u>Additional information:</u> See source</p>	
<p>Citizen participation in the making and passing of regional law (law 69), Tuscan Region, Italy, 2006-2007</p>	<p>There are important differences between the Italian regions in how far they have come in taking the opportunity and actively engage with citizens in decision making processes. The Tuscan Region has probably gone furthest and passed a regional law (Law 69) at the end of 2007 that effectively introduces public participation into key decision making processes in the region. This new framework has given rise to a series of initiatives, mostly relating to participating in urban design and development, environmental issues and waste disposal. The innovative character of the Law lies not only in its specific content, but also in its original formulation process in which, starting January 2006, a large number of local authorities, professionals, members of grassroots groups, associations and interest groups, as well as academics and ordinary citizens across Tuscany contributed significantly to defining the goals, contents and features of the Law itself. It was an original route, later defined as ‘an interesting case of meta-participation, i.e. of citizens deciding how citizens should participate’. In fact, some one thousand individuals are estimated to have, in various occasions, contributed to the legislative text as it was being drafted, thus allowing it to be influenced by the manifold participation experiences that were taking or had taken place throughout the region and elsewhere. The discussion was framed by considerations around theories of deliberative democracy and influenced by foreign experiences such as Brazilian participatory budgeting, the French débat public, British models of participatory planning and deliberative experiences with randomly selected citizens. The Region concluded this phase by putting theory into practice, i.e. using a deliberative method to discuss and decide the contents of the bill itself by</p>	<p><u>Source:</u> Lewanski, Rodolfo (2013) "Institutionalizing Deliberative Democracy: the ‘Tuscany laboratory’," Journal of Public Deliberation: Vol. 9: Iss. 1, Article 10. p. 4-5.</p> <p><u>Additional information:</u> Lyn Carson and Rodolfo Lewanski, Fostering Citizen Participation Top-down. Available at http://c.ygcdn.com/sites/www.iap2.org/resource/resmgr/imported/Journal_Isue3_CarsonLewanski.pdf</p>	<p>Italy</p>



	<p>means of a large-scale 21st Century Town Meeting that took place in Carrara in November 2006. The event was more than an perfunctory exercise of public engagement as the Region's President in front of the 408 participants explicitly committed to participants' recommendations being included in the Law. Since participants requested to continue to monitor subsequent development of the bill, a delegate from each of the 48 tables in the TM was elected by the participants to advocate their views, to maintain links with the Regional Administration and to feedback developments to the other participants. Noticeably, there was systematic reflection at each stage of the process; all the documents of the process pertaining to the bill were 'made available to participants ... for discussion and assessment' on the participation section of the Region's website, creating new 'opportunities for reflecting on the critical events and aspects of the deliberative process'. In the end the process linked participatory democracy with the mechanisms of representative democracy, as the Law was passed by the Regional Assembly on December 19 with broad support (it obtained the votes of the centre-left majority, whereas the majority of the centre-right opposition abstained; only one councillor of the right voted against).</p>		
<p>The plan for rebuilding New Orleans, 2006</p>	<p>How Large-Scale Citizen Engagement Laid the Foundation for Success: The task of rebuilding New Orleans (after Hurricane Katrina, red.) is obviously an enormous one. After a number of unsuccessful attempts, New Orleans approved a blueprint for rebuilding that finally united the city behind common priorities. The Unified New Orleans Plan, developed in just five months, brought thousands of citizens together with planners and officials in an unprecedented grassroots effort that engaged the full diversity of the city. At the heart of the Unified Plan process were two public forums unprecedented in their size and scope. The "Community Congresses" engaged 4,000 New Orleanians across the country in developing collective recovery priorities for their city. With key decision-makers listening, citizens discussed how to ensure safety from future flooding, empower residents to rebuild safe and stable neighbourhoods, provide incentives and housing so people could return, and establish sustainable, equitable public services.</p> <p>The Mechanics of Real, Representative Citizen Engagement: AmericaSpeaks has been engaging citizens in deliberations about the most important public decisions in their lives for more than a decade. To ensure the Community Congresses had representative participation, AmericaSpeaks partnered with a wide array of grassroots organizations, service providers and leaders in diaspora cities across the country. Registrants received pre-recorded calls from the Mayor; Public Service Announcements featured celebrities like Wynton Marsalis; and free meals, childcare, transportation, and translation into Spanish and Vietnamese enabled participation for many who might otherwise have been left out. AmericaSpeaks' 21st Century Town Meeting® methodology used networked laptops and individualized keypad polling to support facilitated, small-group discussions at diverse tables. These discussions fed into large-group sharing and decision-making. Interactive television connected participants in New Orleans with those in Baton Rouge, Houston, Dallas, and Atlanta. At the December Community Congress, participants in 16 other cities viewed the program through a webcast and submitted their views in real-time over the internet. Public television viewers in New Orleans were able to follow the programming from their</p>	<p><u>Source:</u> America Speaks: http://americaspeaks.org/projects/case-studies/unified-new-orleans-plan/</p> <p><u>Additional information:</u> See source</p>	<p>United States</p>



	homes. At day's end, the citizens' collective priorities were provided in writing to every participant.		
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Mechanism	Description	References	Country
ACE (act, create, experience), releases potential through Principle 21, Rio Summit			
The World Wide Fund for Nature's ACE initiative	<p>The World Wide Fund for Nature's ACE initiative, developed in London, South Wales and North Yorkshire, has revealed how the imagination and energy of young people can be released through lively, challenging, creative opportunities. Multimedia, dance, drama, music, video, art, poetry, biodiversity walks, fitness, alternative technology and jargon-busting have featured strongly in ACE activities organised by young people. Performances have taken place with audiences of 200 plus. Action plans have been produced. Councillors and officers are involving young people in the development of Local Agenda 21 policies. National and international links have been established via the Internet. Envirovision, an interactive website, has been designed and features young people sharing information, messages and ideas. Grants have been provided to facilitate action plans. Local authorities, schools, college, youth and community education services have all contributed significant amounts of time, space and funds to support the youth ACE programme.</p> <p>ACT, CREATE, EXPERIENCE (ACE): YOUTH & AGENDA 21: - releases potential through Principle 21, Rio Summit: 'The creativity, ideals and courage of the youth of the world should be mobilised to forge a global partnership in order to achieve sustainable development and ensure a better future for all.'</p> <p>Chapter 25 of the Rio Summit addresses 'Children and Youth in Sustainable Development': 'Youth comprise nearly 30% of the world's population. The involvement of today's youth in environment and development decision-making and in the implementation of programmes is critical to the long-term success of Agenda 21.' The way to achieve this success is by: 'Advancing the role of youth and actively involving them in the protection of the environment and the promotion of economic and social development.' The aim of ACE is to explore, show and support the contribution youth (13 to 25 year olds) can make to the Local Agenda 21 process. The model involves a holistic view of young people and their environment that allows for the diversity of youth experience. It is concerned with: entitlement, participation, equality, access, opportunity, personal development and partnership to make a better, sustainable</p>	<p><u>Source:</u> The New Economics Foundation (NEC) (1998): PARTICIPATION WORKS! 21 techniques of community participation for the 21st century. The New Economics Foundation, pp. 12-13.</p> <p><u>Additional information:</u> See source</p>	United Kingdom



	<p>world. ACE includes local, national and international perspectives.</p> <p>The premise of ACE is that the most effective way of involving young people is to start from their own enthusiasm rather than established practice. The key elements are: Time, Space and Action. Young people identify issues that are of concern to them in their environment; develop an understanding of sustainability; prepare action plans. ACE provides a platform for young people to speak out in their own voice, be seen and heard and have an opportunity to contribute to policy development. They are supported by youth workers, teachers, community artists, councillors and any other adults who are prepared to release youth's potential in a supportive and non-exploitative way. The adults' role is that of facilitator and catalyst. The intent is to provide a participatory experience which builds on positive relationships, provides challenges and broadens the outlook and horizons of all concerned.</p> <p>After the successful pilots, ACE is poised to extend to other parts of the country. Future plans include a roadshow to enable young people to share their experience of ACE and ideas for Agenda 21.</p>		
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Mechanism	Description	References	Country
Action planning			
The greater shankill planning weekend, Belfast 1995	<p>The Greater Shankill Planning Weekend was held in Belfast in 1995. This was a five day event to plan a vision for the future of an inner city area particularly affected by the conflict in Northern Ireland. It was organised by John Thompson & Partners in a consultancy capacity for the Greater Shankill Partnership representing a wide range of key local interests. The event attracted 600 people including representatives from 62 community groups, 45 public, statutory and private agencies and five political parties. It galvanised the Greater Shankill Partnership to prepare a funding bid for a £3.2 million regeneration project which resulted in Lottery (Millennium) and International Fund for Ireland sponsorship for a Flagship Youth Centre for Young People on the Shankill Road. The proposals, which so far have outline planning consent, are for an auditorium, cafes, a one-stop information shop, media and crafts facilities and a dedicated play group facility. The revenue funding for all of these facilities will be supported by lettable retail and office floor space. Action Planning techniques were also used to engage young people from the area in devising the brief for the Centre, which it is intended will be used by young people from both the loyalist and nationalist communities alike.</p>	<p><u>Source:</u> The New Economics Foundation (NEC) (1998): PARTICIPATION WORKS! 21 techniques of community participation for the 21st century. The New Economics Foundation, p. 10.</p> <p><u>Additional information:</u> See source</p>	Northern Ireland



Mechanism	Description	References	Country
Cafes of science (conversation cafe or democracy cafe)			
Alchemist cafe, Ireland	The Alchemist Café is a monthly (approximately) meeting on a science topic of current interest held in Dublin in an everyday public place such as a pub or café. It has been running since 2005 and it draws typically 20-30 participants to hear a short talk by an expert or experts in the field – presented without script or slides – and to question the presenter(s) or to discuss the implications of their talk. National and international speakers have taken part in these café events. Many of the invited speakers are well regarded experts in their field but in the café context their reputation does not protect them from critical scrutiny. The topics tend to be presented as a provocative question and to have a significant extra-scientific dimension, in ethics or politics, for example. This facilitates the participation of people who may not be comfortable with the scientific-technical content. The Alchemist Café is run by a group of volunteers, some of them professionally active in science communication or in scientific research, but all committed to facilitating public participation in science and technology. It uses online groups software to extend the participation beyond the face-to-face events. It has the support of Discover Science and Engineering and a recruitment company.	<u>Source:</u> MASIS Report, Ireland, p. 28-29. <u>Additional information:</u> www.alchemistcafe.dublin.com	Ireland
Cafes of science - debates on nano R&D, Portugal	Cafes of science are located in several science centres across the country, dedicated to the debate on advantages and risks involved in nano R&D, and also in the Time for Nano project, which now operates in Portuguese schools.	<u>Source:</u> MASIS Report, Portugal, p. 16.	Portugal
Junior science café (plus in general), Germany	Science Cafes organised by students. Students select and prepare topics, invite scientists to their schools and moderate discussions. Currently, two schools (in Berlin and Bergheim) are participating. Supported by the Wissenschaft im Dialog initiative. Three to four times per school term (since 2009).	<u>Source:</u> MASIS Report, Germany, p. 89 <u>Additional information:</u> http://www.wissenschaft-debattieren.de/junior-science-cafe.html	Germany
Science cafe (VSNU wetenschapscafe plus others), Netherlands	VSNU wetenschapscafe. Science Cafe of the association of universities on science policy issues. Balie, Nemo, Volkskrant en KNAW kenniscafe: A topic discussed by some experts and an audience. The science café takes place a few times a year and are attended by 50-100 people (Source: MASIS Report Netherlands, p. 36, more information www.vsnu.nl (in Dutch)).	<u>Source:</u> MASIS Report Netherlands, p. 36, <u>Additional information:</u> www.vsnu.nl (in Dutch)).	Netherlands



Science café, Dana centre (science museum), UK	Dana Centre: The Science Museum's cafe/bar for adults only to explore science and technology. Frequency: Ongoing events. The Dana Centre events aim to actively engage participants in dialogue on contemporary science through a range of different formats including discussion, performance and comedy. It is a place for adults to take part in interactive, informative and innovative events focusing on how technology, medicine and engineering influence our culture and society.	<u>Source:</u> MASIS Report, UK, p. 62. <u>Additional information:</u> http://www.danacentre.org.uk/	United Kingdom
Science café, Hungary	1. Tudás Presszó (Knowledge Espresso): Open debates between renowned scientists and the general public about the most actual theoretical, ethical, social and other issues of science at the Fúga Budapest Architectural Centre. (More information: www.hunscan.hu). 2. Science Café: Open debates between renowned scientists and the general public about the most actual theoretical, ethical, social and other issues of science at Merlin Theatre of Budapest. (Information: www.essrg.hu/english). 3. Sustainable Hungary: Series of conversation on the sustainability, environmental protection, political participation in democracy, consumer society, globalist and anti-globalist movements etc.	<u>Source:</u> MASIS Report, Hungary, p. 40. <u>Additional information:</u> www.vedegylet.hu	Hungary
Science café, Italy (Rome)	Forma Scienza, in Rome organise Science Café. Frequency: monthly.	<u>Source:</u> MASIS Report, Italy, p. 48) <u>Additional information:</u> http://www.formascienza.org/en_caffe.asp	Italy
Science cafe, Latvia	In 2004, the Café Scientifique activities were launched in Latvia with the first event under this concept organised by the Ministry of Education and Science as a result of international policy learning in cooperation with the University of Latvia on GMOs. Since then these events have become an integral element of science communication activities of the University, taking place on a regular (mostly monthly) basis on various subjects of interest to the general public (e.g. nanotechnologies, stem cells, smart materials, future energy sources, extraterrestrial intelligence, etc.). During the following years this type of science communication instrument has been taken over also by the Latvian Academy of Sciences, the Latvian Technology Centre and others. For instance, in spring 2010, the Riga Technical University's Council of Students (Science division) had a shy at Café Scientifique type activities organising several discussions in a „Science Cellar“ among students and researchers that have been continued also in 2011 twice per semester. Likewise, the Vidzeme University of Applied Sciences organised its own first Café Scientifique in the framework of the first “Science month” in September-October 2010. The debate with regard to this kind of initiatives in Latvia can, though, be related to developing more efficient means for attracting a wider lay	<u>Source:</u> MASIS Report, Latvia, p. 36-37. <u>Additional information:</u> http://www.lu.lv/petnieciba/komunikacija/kafejnica/	Latvia



	audience beyond the so far predominant scope of HEI students and those already having a prior interest in the issues discussed in order to meet the original goal of this instrument. With this idea in mind, for instance, the location of the cafes organised since 2010 by the Latvian Academy of Sciences (LAS) have been reallocated from the LAS building to the premises of the House of Europe downtown. Café Scientifique: Open forum for the discussion of important and interesting scientific issues, organised as informal discussions, easy accessible and aimed at general public. These events take place at the University of Latvia, the Latvian Academy of Sciences and elsewhere, involving interaction between the public and experts.		
Science cafe, Lithuania	Scientific cafe: Discussion club, where scientist and students discuss the raised problem issue, usually an internationally acknowledged researcher is invited. Frequency: yearly.	<u>Source:</u> MASIS Report, Lithuania, p. 32.	Lithuania
Science cafes, Finland (general and for young people)	1. Tiedekahvila: Science cafes all around Finland, where researchers tell about their work and results (by the Academy of Finland).	<u>Source:</u> MASIS Report, Finland, p. 42. <u>Additional information:</u> http://www.tietysti.fi/fi/T/Tiedetapahtumat/Tiedekahvilat/ Science cafe for young people (by the Academy of Finland): http://www.tietysti.fi/fi/T/Tiedetapahtumat/Tietobreikit/	Finland
Science cafes, Switzerland	1. Bancs publics: The goal of this association is to foster dialogue between science and society. Held approx. 10 times a year. 2. Flying science Basel: This small association proposes science-café.	<u>Source:</u> MASIS Report Switzerland, p. 46. <u>Additional information:</u> www.bancspublics.ch www.flyingscience.ch – information in Swiss	Switzerland
Science cafés, Warsaw, Poland	Two permanent scientific cafés (Warsaw and Silesian Scientific Café in Katowice, organised by Consortia of researchers:) and one organized in the framework of Baltic Science Festival.	<u>Source:</u> MASIS Report, Poland, p. 44. <u>Additional information:</u>	Poland



		http://www.kawiar.nianaukowa.pl/ - information in Polish.	
The Science café, Denmark	The Science café is an association, which organizes open dialogic science events in Copenhagen and Aarhus. All sciences are represented. The concept is well-known in several European countries. Frequency: Monthly.	<u>Source:</u> MASIS Report, Denmark, p. 46. <u>Additional information:</u> http://www.vcaf.dk/ - information in Danish)	Denmark

Mechanism	Description	References	Country
Citizen conference			
Citizen conference on genetic data, 2003, Austria	<p>In Austria, there is little tradition of upstream public engagement in priority setting and decision-making ahead of research. Although not formalised, institutionalised or linked to the political system, there are some sporadic attempts of upstream public involvement. For example, there was a citizen conference on genetic data. In June 2003 a citizens' conference on the topic of genetic data took place in Vienna, organised by a public relation agency on behalf of the Austrian Council for Research and Technology Development.</p> <p>Over two weekends, eleven lay people were informed about the topic and selected a number of experts whom they subsequently queried during a public event. The lay people produced a statement which they presented to the President of the Austrian Parliament</p>	<p><u>Source :</u> MASIS Report Austria, p. 19</p> <p>ITA - http://www.oeaw.ac.at/ita/en/projects/consensus-conference</p> <p>Felt, Fochler and Müller (2003) - Public consultation and foresight initiatives in Austria: Late start and hesitant implementation. Available at: http://www.univie.ac.at/virusss/OPUS/Report/CONFO%20Chapters/pc_au.pdf</p>	Austria
Debates run by Vivagora, e.g. on NanoViv, France, 2006	Vivagora, an NGO created in 2003, organises public debates on science questions and monitors news on public debate and sharing governance. It has run 6 cycles of thematic debates since 2003: The ownership of life in 2004, Health and Environment in 2005, The Nanoworld in 2006, NanoViv cycle in 2006, Brain and Mental Health in 2007, Synthetic biology in 2009.	<p><u>Source:</u> MASIS Report, France, p. 15-16.</p> <p><u>Additional information</u> Vivagora: http://www.projets</p>	France



		<p>- citoyens.fr/node/136</p> <p>The Nanomonde cycle is also described in the book "Consumers and Nanotechnologies. Deliberative processes and methodologies" by Strandbakken et al. (2012:72ff)</p>	
<p>Citizen conference on nuclear waste management, Belgium, 2009</p>	<p>Nuclear waste management is a topic for which the legislator has imposed that citizen participation would take place and for which a citizen jury has recently taken place to give an informed opinion on the issue. This citizen conference ('Comment décider de la gestion à long terme des déchets radioactifs de haute activité et de longue durée de vie ?', was organized in autumn 2009 by the King Baudouin Foundation at the demand of Ondraf (and financed by them) as imposed by the federal waste management policy plan.</p> <p>Citizens' Conference on "How to decide about the long-term management of highly radioactive and long-lasting waste?". Involving citizens in the quest for a solution to highly radioactive and long-lasting waste in Belgium: ONDRAF/ NIRAS, the government institution authorised to manage radioactive waste in Belgium, is currently drawing up a plan, dubbed the Waste Plan, for the long-term management of highly radioactive and long-lasting waste. There are various options for managing such radioactive waste, but several more years of preparations will be required before a definitive plan can actually be executed. However, ONDRAF/NIRAS wants to see a decision in principle taken very soon that sets out the 'general path to follow'. This will be an extremely important decision, so it would be best to involve as many people and organisations as possible in taking it. For this reason, ONDRAF/NIRAS asked the King Baudouin Foundation to organise a participative process. The method chosen by the Foundation for this consultation process was the public forum or 'citizens' conference'. The Foundation has already used this method on several past occasions to give ordinary citizens a voice in the debate about complex, controversial policy issues like genetic experiments and developments in the brain sciences. With the help of experts and guides, a diverse group of 32 Belgian citizens spent three weeks debating the long-term management of radioactive waste in Belgium, and then produced a final report setting out 19 specific policy recommendations. That report was presented to the public and handed over to ONDRAF/NIRAS and other policymakers</p>	<p><u>Source:</u> Masis report Belgium p. 17</p> <p>The King Baudouin Foundation - http://www.kbs-frb.be/otheractivity.aspx?id=251600&langType=2060).</p> <p><u>Additional information:</u> Niras: http://www.niras-afvalplan.be/nieuw/downloads/Waste%20plan%20-%20English.pdf</p>	<p>Belgium</p>



Mechanism	Description	References	Country
Citizen jury	Citizens' Juries, initiated in the United States by Ned Crosby and the Jefferson Center he founded in 1974, have been run sporadically there and more widely in other countries since. Citizens' Juries receive information, hear evidence, cross-examine witnesses, and then deliberate on the issue at hand. Typically, but not invariably, the Citizens' Jury has been commissioned by some public agency to whom its recommendations are addressed. Citizens' Juries are especially common in Blair's Britain. A Citizens' Jury is composed of a group often of around 18-24 randomly selected citizens, representative of the demographics in the area, that come together to deliberate on an issue. Over the period of 4-7 days the jury hears from expert witnesses that are knowledgeable on the topic and deliberate to provide a solution or recommendation to the public and official decision makers.	<u>Source:</u> Goodin, Robert E. & Dryzek, John S. (2006): <i>Deliberative Impacts: The Macro-Political Uptake of Mini-Publics. Politics Society, p. 223</i> Participedia: http://participedia.net/en/methods/citizens-jury)).	
Citizen jury on 'New GM Crops - New Debate', 2005, Denmark	The development of new GM crops give rise to new debate: What are the advantages and disadvantages of the new GM crops in relation to health and environmental issues? What are the economic prospects and consequences of growing the new GM crops? How will Danish citizens asses these crops and which pros and cons will they focus on? To examine the above issues, the Danish Board of Technology nominated a citizens jury consisting of 16 laymen who - during the spring 2005 – gave their assessment of the new GM crops. The citizen jury was presented with questions, which they together took a position to during the period of 28 April to 2 May 2005. During these 5 days, the jury met with invited experts to discuss advantages and disadvantages of the new crops. Informed by the dialogue with many different experts and stakeholders, the members of the jury made up their own minds and subsequently presented their assessments on 2 May in the Danish Parliament.	<u>Source:</u> The Danish Board of Technology http://www.tekno.dk/subpage.php3?article=1136&language=uk&category=11&toppic=kategori11 <u>Additional information:</u> New GM plants – new debate : The final document of the citizens' jury. Available at: http://www.tekno.dk/pdf/projekter/p05_gmp_citizens_documentoent.pdf	Denmark
Citizen jury with young people on designer babies, UK, 2004	BACKGROUND: Young people will increasingly have the option of using new technologies for reproductive decision making but their voices are rarely heard in debates about acceptable public policy in this area. Capturing the views of young people about potentially esoteric topics, such as genetics, is difficult and methodologically challenging. DESIGN: A Citizens' Jury is a deliberative process that presents a question to a group of ordinary people, allows them to examine evidence given by expert witnesses and personal testimonies and arrive at a verdict. This Citizens' Jury explored designer babies in relation to inherited conditions, savioir siblings and sex selection with young people. PARTICIPANTS: Fourteen young people aged 16-19 in Wales. RESULTS: Acceptance of designer baby technology was purpose-specific; it was perceived by participants to be acceptable for preventing inherited conditions and to create a child to save a sibling, but was not recommended for sex selection. Jurors stated that permission should not depend on parents' age, although some measure of suitability should be assessed. Preventing potential parents from going abroad was considered impractical. These young people felt the Human Fertilisation and Embryology Authority should have members	<u>Source:</u> University of South Wales: http://genomics.research.southwales.ac.uk/projects/citizensjury/ . Robert Evans and Alexandra Plows: <i>Listening Without Prejudice? Re-Discovering the Value of the Disinterested Citizen (2006:17-18)</i> Available at: http://www.cardiff .	United Kingdom



	<p>under 20 and that the term 'designer baby' was not useful. CONCLUSIONS: Perspectives on the acceptability of this technology were nuanced, and based on implicit value judgements about the extent of individual benefit derived. Young people have valuable and interesting contributions to make to the debate about genetics and reproductive decision making and a variety of innovative methods must be used to secure their involvement in decision-making processes.(source and more information: Iredale et al. 2006 (What choices should we be able to make about designer babies? A Citizens' Jury of young people in South Wales). Dr Rachel Iredale of the Genomics Policy Unit was awarded £24,000 from the Wellcome Trust to conduct a Citizen's Jury with young people aged 16-19 years across Wales on the topic of 'Genetics and Reproductive Decision Making'. This project was run in conjunction with Dr Marcus Longley at WIHSC and with collaborators from the Wales Gene Park and Techniquet and was held in Cardiff in September 2004.</p>	<p>ac.uk/socsi/evansrj/Discriminating-Citizens-SSS-final.pdf</p> <p><u>Additional information:</u> University of South Wales: http://genomics.research.southwales.ac.uk/projects/citizensjury/.</p>	
Nano jury, UK, 2005	<p>The NanoJury - a citizen jury process, based in Halifax and organised by the Policy, Ethics and Life Science Research Centre (PEALS) at the University of Newcastle upon Tyne, the Interdisciplinary Research Centre in Nanotechnology at the University of Cambridge, the environmental NGO Greenpeace, and the Guardian newspaper. The NanoJury was a deliberate attempt at 'upstream' engagement, as it was designed to solicit public opinion about nanotechnology while that research field was still at an early stage. The verdict of the NanoJury was presented as a series of recommendations, some of which received more support from the jurors than others. In general, the 'NanoJurors', who were selected to represent a range of social and demographic groups, found the jury process beneficial and called for more such events to be organised in the future. With regard to nanotechnology, the Jurors recommended that the applications supported and licensed should be those that met human and environmental needs and, perhaps most significantly for the development of nanotechnology, that new nano-materials be tested as 'new substances' and not licensed on the basis of what is known about the same materials in their 'macro' form. The report of the NanoJury was presented at a media launch in September 2005 and a copy was also sent to the Nanotechnology Issues Dialogue Group based in the Office for Science and Technology.</p>	<p><u>Source:</u> Robert Evans and Alexandra Plows: Listening Without Prejudice? Re-Discovering the Value of the Disinterested Citizen (2006), p. 18</p> <p><u>Additional information:</u> ROGERS-HAYDEN, Tee and NICK PIDGEON (2006): Reflecting Upon the UK's Citizens' Jury on nanotechnologies: <i>NanoJury UK</i>. NANOTECHNOLOGY LAW & BUSINESS</p>	United Kingdom



Mechanism	Description	References	Country
Citizen panel			
Citizens' Panel on Edmonton's Energy and Climate Challenges, 2012, Canada	In 2012, 56 demographically and attitudinally diverse Edmontonians (Canada) came together at the invitation of the City to make recommendations to Administration and Council, with the City's commitment that it will seriously consider their recommendations in developing an energy transition plan. The goal of the Citizens' Panel on Edmonton's Energy and Climate Challenges was to discover whether it's citizens wanted the city to become low carbon, whether the Discussion Paper provided a good map for getting there, and how much citizens supported particular actions proposed in it.	<p><u>Source:</u> Engage2020, survey: See data collection specification, section 3.1 in this report.</p> <p><u>Additional information:</u> Citizens' Panel on Edmonton's Energy and Climate Challenges (2009). Available at: http://www.edmonton.ca/environmental/documents/CitizensPanel-EnergyClimateChallenge.pdf</p>	Canada
Citizen panel on Citizen Visions on Science, Technology and Innovation (CIVISTI project, 2009,2010)	<p>The CIVISTI project is a research project, supported by DG Research and Innovation of the European Commission under the call Blue Sky Research on Emerging Issues Affecting European S&T, Socio-economic Sciences and Humanities programme of FP7.</p> <p>CIVISTI had the challenging task of producing a list of new and emerging issues for European S&T, produce a set of policy options of relevance to future European framework programmes, and base these products upon a novel process of citizen participation in seven member states, supported by the analytical capacity of experts and stakeholders In CIVISTI a novel methodology of citizen consultation and expert/stakeholder analysis was developed. This new and innovative methodology consists of three major steps. First, citizens round Europe were asked about their visions for the future. Second, experts and stakeholders analysed the visions and transformed them into research agendas and policy options for Europe and research. Third the results were given back to the citizens to validate and prioritise them. Citizens produced 69 visions for the future of Europe in the first step of the CIVISTI process. These visions were characterised by being holistic, multi thematic, interdisciplinary and that they spread across multiple domains of society. The CIVISTI methodology builds on the interplay of foresight and participatory technology assessment, where citizens describe their visions of the future following the normative approach, while stakeholders and experts have the very challenging task to "translate" these visions in S&T issues and policy options, thus in this way through concrete recommendations supporting the process of defining FP8 and EU research policy in general. This process was the second step of the CIVISTI methodology and a group of experts and stakeholder produced a list of 30 recommendations for future European S&T and research policy. Just like in the visions there is a lot of diversity in</p>	<p><u>Sources:</u> http://www.civisti.org/</p> <p><u>Additional information:</u> http://www.civisti.org/</p> <p>Rask, Mikko (2013): The tragedy of citizen deliberation – two cases of participatory technology assessment, <i>Technology Analysis & Strategic Management</i>, 25:1, 39-55.</p>	International, EU Funded.



	<p>the recommendations. Many of the recommendations relate to today's grand challenges: Ageing society; sustainable energy production and transport; environment and climate; and supply and quality of water and food. As the third step of the CIVISTI process the citizens were asked to prioritise the recommendations made by experts and stakeholders. That resulted in this top ten list with a recommendation about research in attractive public transportation as the top prioritised. CIVISTI was an experimental project. From the beginning a high risk was taken in the CIVISTI project, first of all because this kind of methodology had never been tried before. And second because this new, innovative and experimental process and method was developed during the project, so to say, CIVISTI has been a "learning-by-doing" process. Therefore the CIVISTI project included the risk of not succeeding. In the end though it is clear that CIVISTI did succeed. CIVISTI produced the results that were targeted by making a list of future S&T issues as well as recommendations for policy options related to future European research policy and base this on a novel and innovative methodology of involving citizens as well as experts and stakeholders.</p>		
<p>Health Parliament, issues and priorities in health care policy, Israel</p>	<p>Health Parliament: A nationwide initiative in which citizens were recruited to address rationing issues and priorities in health care policy. The project was accompanied by experts in communication, sociology, bioethics and health policy. Unfortunately despite the enthusiasm the initiative stopped functioning.¹³</p> <p>In 2003 Israel inaugurated the "Health Parliament" to involve citizens from diverse segments of the population in a deliberative process regarding allocation of public funds for healthcare services. Approximately 130 individuals, randomly selected from all over the country, received extensive orientation to pressing health policy issues from leading experts, and then met to discuss dilemmas associated with equality in health services and prioritization of technologies for funding. Summaries of the proceedings and recommendations of the Health Parliament were presented to the Minister of Health and senior healthcare decision-makers. The initiative was discontinued the following year due to funding problems.</p>	<p><u>Sources:</u> MASIS Report, Israel, p. 22.</p> <p>Miron-Shatz et al. (2012): Shared decision-making in Israel: status, barriers, and recommendations. Israel Journal of Health Policy Research 2012, 1:5, pp-3-4.</p> <p>See also: Lev B et al. (2004): The "Health Parliament": involving the public in health dilemmas. Proc One HTA Health Technology Assess Int Meet 1st 2004 Krakow Pol 2004, 1:270.b</p> <p>Guttman N, Shalev C, Kaplan G, Abulafia A, Bin-Nun G, Goffer R, Ben-Moshe R, Tal O, Shani M, Lev B: What should be given a priority –</p>	<p>Israel</p>



		costly medications for relatively few people or inexpensive ones for many? The Health Parliament public consultation initiative in Israel. Health Expect 2008, 11:177-188.	
World Wide Views project on Global warming (Global citizen panel)	<p>World Wide Views on Global warming involving 100 citizens in 38 countries across the globe is another recent example of citizens participation project conducted at the NCRC. The WWViews method was developed to help close the widening democratic gap between citizens and policymakers as more and more policymaking takes place on the global level. Worldwide, different cultural and political traditions and practices for the involvement of citizens in political decision-making exist. At the global level, no such tradition or practice has yet developed. As markets, technologies and environmental issues become increasingly global in scale, so does policymaking. In this new reality, the distance between citizens and policymakers increases, thereby diminishing the citizens' sense of ownership in decision-making. This creates a need for new initiatives to bridge the widening democratic gap.</p> <p>Citizens have to live with the consequences of climate policies. Their views should therefore be taken into consideration. Policies determined through international climate negotiations will mean that citizens will have to invest in new technology, develop new consumer patterns, modify their houses and even their livelihoods. They are more likely to accept and implement such policies if they have been consulted and listened to first. Until now, no systematic and in-depth global citizen consultancy on climate change has been organized. WWViews fills this void and establishes a model for the future inclusion of the world's citizens in global policymaking. The novel and practical project design makes it potentially possible for all nations on Earth to take part and to produce comparable results that can be clearly communicated to policymakers.</p> <p>World Wide Views on Global Warming involved roughly 4,000 citizens in 38 countries spanning six continents. The citizens gathered in their respective nations to deliberate about the core issues at stake in the December 2009 UN negotiations on climate change. They received balanced information about climate change, discussed with fellow citizens and expressed their own views. They did so in daylong meetings on September 26, 2009. Results from the first-ever global citizen consultation on climate change are clear: Citizens from all parts of the world mandate their politicians to take fast and strong action at COP15. The WWViews results are based on well-established principles for citizen participation, and offer a unique and detailed insight into ordinary people's views on climate change and how to make global policies to deal with it. The 4,000 participating citizens from 38 countries were chosen to reflect the demographic diversity in their respective countries and regions. They were provided with unbiased information about climate change and the COP15 negotiations, and they were given time to deliberate with fellow citizens.</p>	<p><u>Sources:</u> MASIS Report Finland, p. 21.</p> <p>http://www.wvwie ws.org/</p> <p><u>Additional information:</u> The final policy report available at: http://globalwarming.wvwie ws.org/files/AUDIO/WWViews%20Policy%20Report%20FINAL%20-%20Web%20version.pdf</p> <p>Delborne, Jason et al. (2013): Policy pathways, policy networks, and citizen deliberation: Disseminating the results of World Wide Views on Global Warming in the USA. <i>Science and Public Policy</i>, 40, pp. 378–392;</p> <p>Rask, Mikko (2013): The tragedy of citizen deliberation – two cases of participatory technology assessment, <i>Technology Analysis & Strategic Management</i>, 25:1, 39-55</p>	International



	<p>The results are remarkably consistent across national income groups and geographical regions. The participating citizens voted on alternative answers to 12 predefined questions and produced a large number of recommendations phrased in their own wordings. WWViews on global warming was the first consultation (and the first-ever global citizen consultation) held. A second WWViews consultation was held in 2012 with 3000 participating citizens in 25 countries. Two more are planned, one in 2015 and 2016, respectively</p>	<p>Guston, David H. (2014): Building the capacity for public engagement with science in the United States. Public Understanding of Science, Vol. 23(1) 53–59</p>	
<p>Citizen panel about climate change, '180°', 2008-2009, Luxembourg</p>	<p>There are no formalised procedures for involving citizens in priority settings or assessment activities regarding science and technology in Luxembourg. However, there has been recently a citizen panel about climate change aiming at involving selected citizens in the discussions about this vivid societal debate. This panel was called "180°" and was organised in 2008-2009 by three NGO"s: Action Solidarité Tiers-Monde, Caritas Luxembourg and Greenpeace¹¹. Twenty citizens, selected in order to reflect the diversity of Luxembourg's population, were asked to participate in conferences and seminars where they received the necessary information to deepen their knowledge about climate change. Furthermore, they took part in a mission study in Greenland and/or Bangladesh in order to fully understand the social and economic consequences of climate change. The group was guided by an independent moderator. The goal of this panel was to transmit the knowledge and experience acquired in this way through the website of "180°" (and through other media) and to suggest to policy makers precise and concrete proposals to fight against climate change. The panel was thus directed both to citizens as well as to political authorities. The panel "180°" aimed at stimulating the public debate on climate change. This initiative was launched by three NGO"s and was co-financed by the Minister of Cooperation and Humanitarian Action. It could be said that this citizen panel had some resonance in the political arena, as representatives of the panel have been invited to present their proposals in a meeting with 6 Ministers on the 19th May 2009. The conclusions of the panel were also communicated during the public hearing on the Chamber of Deputies in Luxembourg the 21th October 2009¹². Finally, the panel 180° and Luxembourg City launched a "climatic circuit" in the streets of Luxembourg City, which presented information and perspectives on the challenge of climate change.</p>	<p><u>Source:</u> MASIS Report, Luxembourg, p.12-13.</p>	<p>Luxembourg</p>



<p>Citizen panels on nanotechnologies (nano-imaginaries), NanoSoc project, 2007</p>	<p>Citizens' panel. In September 2007, we organized three citizens' panels (also called "panels" or "panel workshops") on nanotechnologies within the NanoSoc project (nanosoc.be). Each panel focused on one of three cases: smart environment (September 7-8), new materials (September 21-22), and bio-on-chip (September 28-29). Each panel consisted of approximately fifteen participants, who were selected on the basis of the principle of maximum variation, i.e., with the intention of bringing together citizens with the widest range of backgrounds as possible, thereby in all likelihood capturing the largest possible variety of viewpoints and values. Criteria for the selection included gender, age, socioeconomic status, work, and educational background. Panelists were asked to reflect on two "nano-imaginaries", understood as visionary scenarios situated around 2025, as constructed in interaction by participants to a previous round of the NanoSoc project. The two imaginaries offered different fictive views of the future for each of the three cases at hand. They were not developed to have predictive value, but served to function as communication and reflection tools for participants of different backgrounds to become engaged in a debate about potential nanotechnology developments. They were presented to panelists both in prose and in the form of two colourful "posters". Questions laid out to the panelists included the following: How do these future worlds differ from the ways in which you live and work today? How are they similar? What role does technology play in these future worlds? Which values are at play in these future worlds? Hence, the aim of the citizens' panels was to engage citizens in fictive worlds to make explicit the values depicted therein and to have participants reflect on the changing nature of values over time. In the course of the panel workshops, citizens were also asked to specify more precisely the values they deemed most significant or prominent in these future worlds; this resulted in a list of approximately ten core values for each case. At the end of the workshop, the values list was further reduced to contain a number of three core values, as each panelist was asked to select the three values he or she considered most prominent of all. The lists served as empirical data for the ensuing ethical analysis by means of an Ethical Matrix.</p>	<p><u>Source:</u> Engage2020, methods: See data collection specification, section 3.1 in this report.</p> <p><u>Additional information:</u> www.nanosoc.be</p>	<p>Netherlands</p>
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Mechanism	Description	References	Country
Citizens' Summit	One of the strengths of the citizens' summit is its ability to bring together many citizens (often several hundreds) in a single one-day session, thus increasing representationalism. The citizens' summit puts the focus firmly on the citizens themselves, granting them the opportunity of giving their input to politicians and of hearing their detailed response to the questions in the course of the meeting. Via debate and voting, citizens express their attitudes towards the summit issue and these attitudes are continually presented on a giant screen. The citizens' summit is different from more traditional citizens' meetings in that it focuses on the participating citizens – not on a speaker. Instead of one-way communication between experts and citizens, it is the citizens who discuss information prepared by experts and who give the summit an expedient and detailed feedback.	<p><u>Source:</u> The Danish Board of Technology - http://www.tekno.dk/subpage.php3?article=1232&toppic=kategori12&language=uk</p> <p><u>Additional information:</u> http://www.tekno.dk/subpage.php3?article=1232&toppic=kategori12&language=uk</p>	
Citizens' Dialogue on Future Technologies (The Bürgerdialog Zukunftstechnologien), Germany 2011 (citizens' summit plus other mechanisms)	<p>The goal of the project "Bürgerdialog Zukunftstechnologien" (Citizens' dialogue on future technologies) was to initiate a wide and continuous discourse with the public about prospective challenges regarding technology development. These dialogues made it possible for scientific and technological approaches to better incorporate the needs, concerns and expectations of citizens to a certain degree. For this, regional dialogue events concerning different technology fields were conducted during which participants were first informed about relevant research and key technologies in order to then articulate their opinions and ideas and to represent them in a public dialogue together with representatives from politics, the economy and science. Topics of the three dialog rounds were energy technologies for the future, high-tech medicine, as well as demographic change. Furthermore, the project evaluated the process of the dialogues and their results, explored the (different) expectations of all stakeholders involved concerning participation and – in addition - discussed how these results could be made useful for processes of technology assessment. Particular attention was paid to the question what legitimation the results of the process could achieve. Interestingly, the scope and the financial dimension of the dialogues allowed for a quantity of participants that is usually common for the size of representative surveys in Germany, exceeding the typical range of participative processes, which in turn enabled representativeness regarding quantitative considerations. The BMBF (Federal Ministry of Education and Research) put a consortium consisting of ITAS (Institute for Technology Assessment and Systems Analysis), IFOK (Institute of Communication and Organization) and ZIRIUS (Center for Interdisciplinary Risk and Innovation Studies) in charge of the implementation of the dialogue process. In close collaboration with the ministry a three-phase procedural model was developed that contained different discursive and participative elements.</p> <p>During the first stage of the individual dialogue rounds, focus groups were conducted offering contextual insights and basic frameworks for the actual dialogues. Subsequently, in the framework of six to eight regional citizen conferences (with approximately 100 participants each), the respective topics of the dialogue were mutually discussed by citizens with the assistance of experts. Also, the participants had the possibility to state first courses of action for how politics and society should deal with future</p>	<p><u>Sources:</u> Institute for Technology Assessment and Systems Analysis (ITAS) - https://www.itas.kit.edu/english/projects_deck11_buedizut.php</p> <p>MASIS Report, Germany, p. 27-28.</p> <p><u>Additional information:</u> Detailed information, all public documents and the results of the particular dialogues and conferences are available on the homepage of the Citizens' dialogues: www.buergerdialog-bmbf.de</p>	Germany



	<p>technologies. This stage was accompanied by an online consultation offering even more citizens than only the ones invited to the dialogues to participate in the process, independent of time or location.</p> <p>During the third stage the citizens - in a concluding national citizens' summit - developed a citizens' report based on the outcomes of the regional citizens' conferences and the online consultations. All stages of the dialogue were accompanied by a circle of experts which consisted of experts from science, economy, environmental protection and civil society. During the detailed implementation of this general model, the procedure was adjusted to the particular topic of the dialogue, e.g. in one case the optional, open format of the Bürgerwerkstätten (citizens' workshop) was added.</p> <p>The BMBF's ITA (Innovation and Technology Analyses) concept seeks to identify fields of socially accepted technological progress, illustrate potential, identify political scope, and develop options for research and innovation. In doing this, ITA also includes participatory measures in order to involve citizens and stakeholders in determining priorities of research policy and contributing to shaping science and technology. In the coalition treaty of the current governing parties it was agreed that Bürgerdialoge (citizen dialogues) shall be conducted on different themes of science and technology. According to the Fukushima disaster and its consequences for German energy policy, the first Bürgerdialog is dealing with energy technologies of the future. The BMBF is particularly interested in getting orientation on what citizens think future energy technologies and infrastructures should look like, where acceptance problems might occur, and what could be done to overcome them. The process will end up with a citizens report handed over to the ministry, including recommendations and citizens' conclusions. There will be a series of such Bürgerdialoge over the next years. The Bürgerdialog Zukunftstechnologien110 (Citizens' Dialogue on Future Technologies), starting in March 2011, is the latest initiative by the Bundesministerium für Bildung und Forschung (BMBF, Federal Ministry of Education and Research) to actively involve citizens in the political processes related to technologies with an anticipated impact on society. The citizens' dialog will follow a three-step process, were in a first step scientists will compile the state of the art on a selected topic (the first topic is related to future energy supply) and citizens will reflect on these reports on the basis of their personal expectations. In a second step, citizens will discuss their concerns with experts either during citizens' conferences or on the internet in the form of online consultations. In a third step, citizens will produce a citizens report which will be presented at a final conference held in Berlin and handed over as recommendations for further action to the German Minister of Education and Research and representatives from politics, science, industry, and society.</p>		
<p>G1000 project, 2011-2012 (online survey, citizen summit and citizen panel)</p>	<p>G1000 is an independent citizens' project aimed at revitalizing our democracy. It started as an idea, but over a short period of time has grown to be the biggest citizens' initiative for democratic innovation in Europe. The G1000 is an initiative of the Foundation for Future Generations, a public foundation in Belgium.</p> <p>Essentially, the G1000's agenda can be boiled down to one point: to enable citizens to speak together. But what should they talk about? Let</p>	<p>Sources: http://www.g1000.org/en/ and the final report available at: http://www.g1000.org/documents/G1000_EN_Website.p</p>	<p>Belgium</p>



	<p>them decide for themselves. Right from the start, the G1000 has been different from other deliberative exercises in that it enabled complete participation in setting the agenda. The citizens themselves decide what would be discussed – not the organisers. From July 2011 onwards, everyone had the opportunity to voice their opinion about the subjects to be discussed at a citizens’ summit, online, on the Web site of the G1000. Thousands of ideas resulted from this process. Those who proposed ideas were equally asked to attribute scores to others people’s proposals. This vote accentuated the subjects that received broad popular support. In October 2011, all proposals were clustered in order to create a Top 25: a list of best-appreciated themes. This list was randomised, and brought online again. At this stage, citizens were asked to select three themes in order of preference. At the end of the first phase, the citizens decided that the G1000 citizens’ summit would discuss the following themes: social security, wealth in times of financial crisis and immigration. During the second phase the G1000 citizens' summit was held; this event took place at Tour&Taxis in Brussels on 11 November 2011. The number of attendees was confirmed to be 704 persons. To conclude the entire participative process a citizens' panel of 32 people was organized, (the third phase). The 32 participants of this third phase of the G1000 were fully in charge of their own process; this means that they have been given the freedom to determine the topics on which they will focus during three weekends. Over the course of the summer they were asked to choose a main theme from among the topics and subtopics discussed during the G1000 citizens' summit. They had to motivate their choice. To help them with this task, the flipcharts with all the ideas that were formulated during the citizens' summit were first analyzed. In this way these ideas could be summarized and presented to the group. After the analysis and the summary was completed, the 32 participants selected the following main question for their discussions: how to deal with labour issues and unemployment in our society?</p> <p>Despite the choices we had to make and the justified criticism we might get for that, the G1000 project did succeed in one important thing: its ideas and its methods stirred public opinion and set in motion a debate about the quality and organization of democracy. It instigated a public discussion on what it means to be a citizen in modern society, and on how politics should be shaped in order to meet the demands from the citizens. And even more than that, it showed us the wisdom and the passion of the crowd. Many citizens arrived at Tour & Taxis on that 11th of November with scepticism, but at the end of the day, the motivation among the participants and the pride of being part of the event set the tone. To us, it is not necessarily the substantive results that are the crucial determinant of the success of the G1000. They are important, and they deserve to be considered by politicians when thinking out future policies, but the added value of the G1000 project was the fact that it proposed a new way of doing and living politics.</p>	<p>df) Full background paper of the G1000 project: Didier Caluwaerts and Min Reuchamps, The G1000. Facts, figures and some lessons from an experience of deliberative democracy in Belgium, pp.14-15: Available at: http://www.rethinkingbelgium.eu/rebel-initiative-files/events/seventh-public-event-g1000-european-citizens-initiative-malaise-democracy/G1000-Background-Paper.pdf</p> <p><u>Additional information:</u> See sources</p>	
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Mechanism	Description	References	Country
Consensus conference			
Consensus conference on plant biotechnology, UK (first national conference, 1994)	Some discussion has focused around whether it is possible to engage the public in meaningful discussions about the future of new technologies before there are example applications. A further debate has focused on the value of upstream engagement if there is no clear policy „customer“ for the intelligence generated. A classic example of the latter was the UK’s first national consensus conference in 1994. This consensus conference on plant biotechnology was funded by the Biotechnology and Biological Sciences Research Council and managed by the Science Museum. Many of the issues brought to the fore in this event came to prominence in the campaigns against GM food in the late 1990s. However, the lack of a policy customer in 1994 meant that few actions were taken to use the understanding of public expectations within science policy or trade policy. (Source: MASIS Report UK, p. 27). The lay panel gave the field of plant biotechnology its qualified support saying "there is scope for people to intervene in controlled ways which have the potential to provide significant benefits, and at the same time to satisfy the requirements of those people who feel that matters are progressing too quickly with an implied lack of care". The lay panel advocated, among other things, tightening up the regulations governing the release of genetically modified plants into the environment, establishing effective international controls over the commercial exploitation of plant varieties, and providing consumers with clear and comprehensible information about new biotechnological products.	<p><u>Sources:</u> BBSCR: http://www.bbsrc.ac.uk/society/dialogue/activities/plant-biotechnology-conference.aspx</p> <p>See final report: http://www.ncbe.reading.ac.uk/ncbe/gmfood/conference.html</p> <p><u>Additional information:</u> Joss, Simon and John Durant (1995): The UK National Consensus Conference on Plant Biotechnology. Public Understanding of Science, 195-204.</p>	United kingdom
Consensus Conference (Konsensuskonferenz) on genetic diagnostics, Germany 2001	<p>With the first Konsensuskonferenz (Consensus Conference) on genetic diagnostics, organised in 2001 by Deutsches Hygiene-Museum Dresden (German Hygiene Museum) and funded by the BMBF, a platform was initiated which allows citizens to participate in a very early stage of (science) policy making - before actual research or development is carried out. This kind of upstream engagement is currently organised at the national level by the Wissenschaft im Dialog (Science in Dialogue) initiative as Konsensuskonferenzen and Bürgerkonferenzen (Citizens Conferences).</p> <p>The Consensus Conference on Genetic Diagnosis that took place in Dresden in 2001, which was the first citizen conference in Germany, initiated by the Ministry of Education and Research and organised by the Hygiene Museum Dresden. The organisers invited 19 citizens, carefully selected from a pool of persons whose names and addresses the organisers had obtained through a random process. The composition of the group was meant to mirror the composition of the population at large, including employed and unemployed, older and younger people, men and women, students and pensioners. At the same time, participants must not be engaged in an interest group or an NGO or be a member of, for instance, a biotech company or a professional in the biosciences. Such closeness to the issue at stake was assumed to cause bias and partisanship; only unspoiled minds would qualify. The citizens group would choose a topic for their deliberations (they picked PGD, prenatal testing and preventive testing), select experts from a pool recruited by the</p>	<p><u>Source:</u> MASIS Report, Germany, p.26.</p> <p>Braun, Kathrin and Susanne Schultz (2009):“... a certain amount of engineering involved”: Constructing the public in participatory governance Arrangements. Public Understand. Sci. 1–17, pp. 7-8.</p> <p><u>Additional information:</u> http://www.wissenschaft-debattieren.de/konsensuskonferenz.html (in German).</p>	Germany



	<p>organisers, crossexamine them, discuss a series of statements solicited in advance from authorities in relevant fields and deliberate among themselves over several days and finally issue a verdict on the three subjects. The main purpose of the experiment was not to influence policy-making in the area of genetic testing. In fact, commentators agree that it had relatively little impact on formal policy. Rather, the idea was to perform an ideal type deliberation process among as yet genetically illiterate participants in order to answer the questions whether, and how, these blank minds could be transformed into knowledgeable and mature citizens, capable of making reasonable judgements on complicated issues of science policy. The consensus conference was thus meant as a reference model for organising discourse events and exercises in public involvement. Implicitly, the main addressees of this performance were not only journalists and policymakers, but also the growing community of discourse professionals – social scientists studying new experiments with public participation in science. Social scientists attending the final, public event of the conference, report that the audience was to some extent composed of discourse professionals. Hence, the primary purpose of this format is to demonstrate the capacity of ordinary citizens to refine their views and attitudes through the process</p>	<p>Hendriks, Carolyn (2011): The politics of public deliberation: Citizen engagement and interest advocacy. Palgrave Macmillan.</p> <p>Braun, Kathrin and Susanne Schultz (2009):“... a certain amount of engineering involved”: Constructing the public in participatory governance Arrangements. Public Understand. Sci. 1–17, pp. 7-8.</p>	
<p>The National Citizens’ Technology Forum (NCTF) on nanotechnology, 2008 US (modified consensus conference)</p>	<p>In March 2008, CNS-ASU held the National Citizens’ Technology Forum (NCTF) on nanotechnology and human enhancement. The NCTF mixed face-to-face and Internet-based interactions to conduct a national-scale, deliberative, participatory activity. The NCTF included 74 citizens in six sites across the United States. Rather than influence policy as such, its major goal was to demonstrate two capacities: one, to overcome the challenge – perceived by the nation’s founders more than two centuries ago – of enabling democratic participation across a continental scale; and two, to engage citizens on a topic of emerging, rather than current, science and technology, prior to their having significant factual knowledge or established opinions about it. Panelists, recruited in each locale using newspapers, leaflets, and Internet advertising, were paid \$500 after completing the NCTF. Demographics were strongly suggestive of local and national socio-economic and ethnic diversity if not fully representative of it statistically. Each panelist received a 61-page background document – authored and vetted by CNS-ASU and advisors Ida Andersen (Danish Board of Technology) and David Rejeski (Woodrow Wilson International Center) – on nano-enabled human enhancement technologies and current debates about their plausible societal aspects. A pre-test accompanied the participant-selection process, and participants completed a post-test before receiving their honoraria. Panelists deliberated over the course of a month, including an initial face-to-face weekend, a series of online interactions with other panelists and experts across the country, and a final face-to-face weekend to draft their reports. The forum covered nanotechnology, biotechnology, information technology, and cognitive science (NBIC), focusing on technologies of human enhancement.</p>	<p><u>Sources:</u> A. Anderson, Ashley and Jason Delborne and Daniel Lee Kleinman (2013): Information beyond the forum: Motivations, strategies, and impacts of citizen participants seeking information during a consensus conference. Public Understanding of Science 22(8), p. 5</p> <p><u>Additional information:</u> Delborne, Jason A. et al. (2012): Virtual deliberation? Prospects and challenges for integrating the Internet in consensus conferences. Public Understand. Sci. 20(3) (2011) 367–384</p>	<p>United States</p>



		Guston, David H. (2014): Building the capacity for public engagement with science in the United States. Public Understanding of Science, Vol. 23(1) 53–59.	
Consensus Conference (Konsensuskonferenz) on future energy supply, Germany, 2010	For the first conference in Essen (2010), a representative group of 25 citizens has been selected to discuss on Germany's future energy supply. Supported by the Wissenschaft im Dialog initiative.	<u>Source:</u> MASIS Report Germany, p. 26. <u>Additional information:</u> http://www.wissenschaft-debattieren.de/buergerkonferenz/essen-maerz-2010.html (in German)	Germany

Mechanism	Description	References	Country
Consensus seminar			
GenSET - Increasing capacity for implementing gender action plans in science (plus other mechanisms)	<p>GenSET was a 30-month project that run between September 2009 and February 2012. Founded by the FP7 Science in Society programme as a Support Action, the total budget for the project was €1,198,630 (with about 86% EC contribution). GenSET's aim was to raise awareness and build capacities for the incorporation of gender knowledge and gender mainstreaming expertise into science institutions. Using the knowledge base developed over the years on gender and science, it proposed to create a new understanding of the impact of the gender dimension on the quality of research. To do so, genSET implemented a rather innovative approach. It initiated and developed a forum for sustainable dialogue to discuss gender mainstreaming in science, that associated not only gender experts but also sought the active participation of European science leaders, science stakeholder institutions and science strategy decision-makers.</p> <p>First three consensus seminars were set up, during which 15 'science leaders' discussed issues surrounding the gender dimension in science. As a prerequisite to the discussions, the 'gender experts' provided lectures and briefing materials on gender issues to the participants. 'Science leaders' had then to decide if the body of research evidence accumulated was convincing and they had to reach a consensus view on institutional actions for mainstreaming gender in the European science system. This resulted in the publication of a consensus report addressed to other</p>	<p><u>Source:</u> Tehnopolis group (2012): Sis Case Studies, May 18, first version, pp. 31ff: See data collection specification, section 3.1 in this report.</p> <p><u>Additional information:</u> See source.</p> <p>http://www.gendernscience.org/</p>	International, EU funded.



	<p>science leaders across Europe. Four priority areas were targeted in the reports' recommendations: science knowledge making, deployment of human capital, institutional practices and processes, and regulation and compliance with gender-related processes and practices. Secondly a network of 185 'science stakeholders' was recruited, to be involved in a series of three capacity building workshops. The workshops' objective was to help institutions to develop institutional capacity for actions in three areas: (i) remove gender stereotypes and gendered attitudes in the assessment of women's work, (ii) remove gender bias from research process that diminish science excellence and (iii) remove hidden barriers to recruitment, retention and promotion of women scientists. The workshops were supported by the consensus report and attended by the 'gender experts'. Focus was on the identification of particular needs inside institutions to engage them more widely into gender-related activities. Mentoring activities were also proposed to stakeholder institutions that expressed further needs for support. Thirdly two valorisation symposia were held in Ireland and Poland in 2010 and a final dissemination conference – the Gender Summit – took place in Brussels in November 2011 and saw the circulation of a policy manifesto for integrated actions on the gender dimension in research and innovation.</p>		
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Mechanism	Description	References	Country
Constructive Technology Assessment (CTA)			
PATS – Privacy Awareness Through Security Branding, 2009-2012	<p>While it can be assumed that the security industry and organisations will increase their efforts to keep and to strengthen trust relations with citizens, the question remains: how can one raise more awareness of social conflicts and privacy concerns among those public and private agencies that undermine privacy necessarily on a daily basis in their mission to provide security? It is well known that neither laws nor other organisational practices can exclusively provide a reasonable level of protection for privacy today. There is some evidence that its protection may well be linked to higher levels of trust and that is a powerful motive for serious self-regulation. What is necessary is to build into the security agencies and actors a reflexive capacity that encourages more critical communication and awareness. Therefore the aim of the project was to increase privacy awareness across various sectors, from firms to government agencies focusing especially on the development and use of Closed Circuit Television (CCTV) and biometrics. More concretely, the goal of the project is to create security brand indicators that refer to the value of privacy and to demonstrate how certain standards of privacy can become a brand label for security organisations on a voluntary but binding basis. The project wanted to go beyond the regular approaches in privacy research that use solely the legal perspective by exploring the use of organisational and communicative perspectives to privacy and investigate also other mechanisms such as self-regulation and the principle of accountability.</p>	<p><u>Source:</u> Tehnopolis group (2012): Sis Case Studies, May 18, first version, pp. 62ff: See data collection specification, section 3.1 in this report.</p> <p><u>Additional information:</u> See source.</p> <p>http://www.pats-project.eu/</p>	International, EU funded.



	<p>PATS follows an approach known as Constructive Technology Assessment (CTA). The central aim of which is to broaden the design process of new technologies through dialogue between innovators and the public so that developments meet social needs and mismatches, wrong investments, and possible social conflicts can be minimised. A combination of methods is used such as open expert interviews, dialogue workshops, expert evaluations/focus groups and two major conferences. These were rather straightforward tools for reaching the goals aimed at.</p> <p>The work was organized in work packages (WPs), including WPs on Security Agencies and Actors, Privacy Awareness of Security Agencies and Actors, Symbolic Representations of Security Agencies, The Privacy Branding Model, Expert Evaluations, Policy Recommendations, Dissemination and project management.</p>		
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Mechanism	Description	References	Country
Decision theater (material deliberation)			
Decision Theater, ASU (US)	<p>Modeling as deliberation: Decision Theater, ASU:</p> <p>Many of the literatures which urge deliberation to go ‘beyond discourse’ note that sketches, visualisations and images can be useful in doing this (Forester, 1999; Sandercock, 2003). Our first case picks up on this notion of the visual character of deliberation by focusing on immersive computer modelling as a means of engaging stakeholders and publics. Our example is the ‘WaterSim’ model developed at Arizona State University’s Decision Center for a Desert City (DCDC) and used to support dialogue between stakeholders in water governance in Phoenix. This model – which incorporates data on business and residential water use, urban planning, and weather patterns, amongst other things – is presented in a visualisation structure called the Decision Theater, a “research facility and decision lab exploring and understanding decision making”. The theater is a single room seven-screen immersive environment which allows participants to look at complex data, models and sophisticated visualisations and, based on these, to test out the outcomes of decisions they make. Within WaterSim, for example, participants can make choices about groundwater use, planning and residential water use regulation, and inter-state relations (Arizona currently imports much of its water from other states); the WaterSim model then makes predictions about what these decisions will mean for water sustainability, state finances, and the lives of Phoenixians. The stakeholders who use the Decision Theater – generally policy makers without backgrounds in the technicalities of water systems, but occasionally lay publics – are thus immersed in technical data sets made accessible to them through graphics, visualisations and narratives of cause and effect. As a whole, WaterSim is “part of a long-term effort to engage Phoenix policy makers and residents in a structured discussion about the choices that lie ahead with respect to water policy” it is thus primarily a means of “facilitating discussions” and “highlight[ing] critical tradeoffs”. Decision Theater can</p>	<p><u>Source:</u> Davies et al. (2012) Citizen engagement and urban change: Three case studies of material deliberation. Cities 29(6), pp. 353-354</p>	United States



	<p>be understood as a decision support system, one of class of tools which seeks to aid decision-making in situations of complexity. Decision Theater and similar visualisation devices sit squarely in the tradition of Sandercock's 'heroic planning', utilising a "view of knowledge that privileges technical rationality and instrumental problem-solving ability". This is clear, for instance, in Shen and Kawakami's discussion of a visualisation tool developed to aid town planning in Japan (2010). Though the tool "successfully allowed participants to deliberate on a common image" this success was premised upon it helping people to "understand the concepts of the design alternatives". Such tools are, in other words, fundamentally illustrative, designed to aid comprehension of a particular set of choices which have been pre-determined by scientific or planning data and analysis. The emphasis remains solely on cognitive-oriented decision making. They therefore allow little scope for the transformation that is integral to more radical notions of deliberation or for a genuine openness to diverse forms of knowledge.</p>		
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Mechanism	Description	References	Country
Deliberative consulting			
Gene Week research project , UK 2002	<p>The "Gene Week" research project (2002) includes a new method of consultation and evaluating. Gene Week was funded through the Wellcome Trust program on novel means of consulting the public about genetics. The consultation was centered around a series of articles on genetics and health that were published in a local daily newspaper. The aims were to undertake a widely accessible consultation which would engage people as ordinary citizens, rather than targeting organizations and professionals; to provide information without the hype often associated with media reporting; and to allow participants to raise the issues they thought were important in the ways they wanted to, by enabling them to have some control over the agenda. Overall the consultation was premised on the view that the general public/s have valuable ideas to contribute to debates about genetic technologies and their application.</p>	<p><u>Source:</u> Levitt, Mairi, Kate Weiner, and John Goodacre (2005): Gene Week: a novel way of consulting the public. <i>Public Understand. Sci.</i> 14 (2005) 67–79.</p> <p><u>Additional information:</u> See source.</p>	United Kingdom
Detroit - Planning for a City of the Future, 2014	<p>On Friday February 21, Detroit's leaders filed in bankruptcy court the first official plan for moving the city to solvency. The plan envisions repaying the city's more than 100,000 creditors, tearing down tens of thousands of blighted buildings, shrinking the city's physical footprint, encouraging start-up ventures, and investing in improved core city services. The approach is ambitious and represents an important step in re-inventing Motor City. Much of the proposed roadmap will be contested in court and in political battles. However, at least one pathway forward has been set down with authority that will encourage the start of a sustained effort to bring Detroit back. Just a day before the plan was presented, the innovative urban-oriented non-profit organization Meeting of the Minds convened two meetings in Detroit to discuss the longer-term implications of planning for the beleaguered city's future. The brainstorming workshops included a number of corporate and civic leaders from around Detroit and Michigan in one session, and international planners and urban thinkers in the second session.</p>	<p><u>Source:</u> Wilson Center - http://www.wilsoncenter.org/article/detroit-planning-for-city-the-future</p> <p><u>Additional information:</u> See source</p>	United States



<p>Sea for Society (SFS), 2012-2015</p>	<p>Sea for Society (SFS) is a European Project funded by DG Research & Innovation under the Theme Science in Society. The project engages stakeholders, citizens and youth in an open and participatory dialogue to share knowledge, forge partnerships and empower actors on societal issues related to Ocean. In doing so, the project aims to develop and enrich the concept of "Blue Society", preparing at the same time mechanisms for cooperation. Public Engagement in Research (PER) as it relates to European maritime policy is at the core of the process. SFS will mobilize marine researchers, Civil Society Organisations - CSO's and individual citizens and youth in a mutual learning, open dialogue to debate key societal questions related with the Ocean, extract cross-cutting issues and propose challenge-driven solutions fostering a sustainable management of marine eco-system services by European citizens. The project has brought together a multidisciplinary partnership of 20 partners from 10 countries representing marine research institutes, funding agencies, science museums and aquaria, CSO's, higher education institutes and business networks. From 2012 to 2015, SFS will shape the new concept of "Blue Society" and improve the governance of research related to the oceans and seas. It's a first step for a cross-sectorial dialogue in Europe on the relation between the Ocean and the citizens' daily life activities. The project has a duration of 42 months and the kick-off meeting took place on June 6th to 8th in Boulogne-sur-Mer, France, hosted by the project coordinator NAUSICAA.</p> <p>The Sea For Society (SFS) project will bring together researchers, marine and terrestrial actors, civil society organisations (CSO's) and individual citizens and youth in a mutual learning, consultation process and joint action to consider key questions, extract cross-cutting issues and propose challenge-driven solutions in order to ensure a sustainable management of marine eco-system services by European citizens. SFS will provide feedback from consultation process both to RD governance and maritime governance, shaping a new concept of Blue Society and improving the governance of research related to the oceans and seas at regional, national and European level.</p>	<p><u>Source:</u> www.seaforociety.eu, included in Engage2020, methods: See data collection specification, section 3.1 in this report.</p> <p><u>Additional information:</u> www.seaforociety.eu</p>	<p>International, EU funded.</p>
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Mechanism	Description	References	Country
Deliberative poll	Deliberative Polling®, developed by Professor James S. Fishkin, is a technique which combines deliberation in small group discussions with scientific random sampling to provide public consultation for public policy and for electoral issues. A number of Deliberative Polls have been conducted in various countries around the world, including China, Japan, Britain, Italy, Bulgaria, Brazil and in the United States, some national and some local.	<u>Source:</u> http://cdd.stanford.edu/	
A Deliberative Poll on Education Policy in Northern Ireland	Before making the education policy adjustments which had become essential due to low pupil turnout, the Department of Education in Northern Ireland sought to pay attention to the views of the parents. The goal was to create the required new rules within an atmosphere of cooperation. To attain this cooperation, a deliberative poll was held in Omagh, Northern Ireland in January 2007. 565 randomly selected parents were polled and then invited to Omagh College for a day of deliberation. 127 participants were given briefing materials on education policy. Parents engaged in small group discussions which were controlled by moderators, while at the same time a panel of experts answered their questions. Following the deliberative process, the parents were polled again to see how their opinions had changed.	<u>Source:</u> Participedia: http://participedia.net/en/cases/omagh-education-policy-omagh-northern-ireland <u>Additional information:</u> See source	Northern Ireland
EUROPOLIS - a deliberative policy-making project, 2009	EuroPolis was organized in response to the "democratic deficit" critique leveled against European politics. Through deliberative polling, it explores how informed debate can improve European democracy. The participants were selected from among more than 4,000 European citizens from the 27 member states of the EU polled for their views on immigration, climate change and the EU between March and May 2009. The findings from the deliberative polling exercise were presented in the Residence Palace in Brussels on the 3rd of June 2009. The sponsors and partners of the "deliberative policy making project" include academic institutions across Europe, the European Commission and a group of European foundations. Professor James Fishkin of Stanford University, who originated the concept of Deliberative Polling in 1988, was also involved in the project. Many participants changed their views about the issues and their vote intentions after deliberation. They also became more informed and some changed their sense of identity as Europeans. Given the proximity to EU elections, there was an emphasis on party support. The biggest finding in relation to this was the dramatic increase in support for the Greens, whose vote share increased from 8% before deliberation to 18% after.	<u>Source:</u> http://participedia.net/en/cases/europolis-participation-and-citizenship-europe <u>Additional information:</u> See source See also a full description and evaluation in: Isernia, Pierangelo and James S Fishkin (2014): The EuroPolis Deliberative Poll. European Union Politics 0(0) 1–17.)	International, EU funded.



Mechanism	Description	References	Country
Electronic town meeting (eTM)			
PARTERRE project, 2010-2012	<p>The PARTERRE project is funded under the EC's prestigious CIP (Competitiveness and Innovation Programme). PARTERRE was aimed at validating the market perspective of a pan-European service based on two innovative electronic tools that have been successfully trialed on previous Preparatory Actions: the Electronic Town Meeting (eTM) for citizens' involvement in agenda setting and the DEMOS-Plan application for stakeholders' online consultation in spatial planning. This eParticipation project involved six partners in five European countries.</p> <p>The PARTERRE project demonstrated and validated the business potential of novel e-participatory methods and tools for spatial and strategic planning at the European level, by leveraging on two fully blown ICT solutions:</p> <ol style="list-style-type: none"> 1. The Electronic Town Meeting (first introduced into Europe by Avventura Urbana srl and technically supported by the project's coordinating organisation, Regione Toscana), a deliberative democracy methodology and toolset combining the direct integration of small-groups discussion with the advantages of electronic communication. 2. The DEMOS-Plan solution for the management of participatory spatial planning, derived from the DEMOS deliberative discourse making machine which was successfully deployed by another project partner (TuTech Innovation GmbH) in collaboration with the City State of Hamburg in the context of a Preparatory Action on e-Participation, entitled "LexiPation", and used by Regione Toscana as an evaluation forum regarding its newly approved Law on participation. <p>In both cases, the ICT solutions have reached a sufficient refinement to become the core assets of the pan-European service envisaged, and its validation was the main result of the PARTERRE project. 18 regional pilots were held during the project. The two ICT solutions proposed - DEMOS-Plan and eTM - were adopted and the contents of which reflected the specific goals and needs of the public sector entities (and local stakeholder/citizen communities) involved in participatory spatial planning and/or strategic environmental assessment exercises. The Town Meeting is a form of structured participation in local government practised in the U.S. region of New England since colonial times, and in some Western States since at least the late 19th century. There an entire community was invited by government officials to gather in a public place to formulate suggestions or provide feedback on specific policy issues. In its modern version - the Electronic Town Meeting – the use of ICT enables citizens to participate either directly, or indirectly or at least experimentally, in the upcoming debate. The basic characteristics of an Electronic Town Meeting are the following: after information on a given topic has been provided, participants can express themselves individually within small groups, also known as "tables". Instant minutes of the tables discussions are kept by experienced facilitators - usually thanks to electronic means – with the aim of letting</p>	<p><u>Source:</u> http://www.academia.edu/3062734/PARTERRE_Electronic_Participation_Tools_for_Spatial_Planning_and_Territorial_Development_</p> <p>http://www.parterre-project.eu/index.php</p> <p>http://www.epractice.eu/en/cases/parterre</p> <p><u>Additional information:</u> http://www.parterre-project.eu/index.php</p> <p>http://www.epractice.eu/en/cases/parterre</p> <p>See also Molinari, Francesco (2012): eParticipation that works. Evidence from the old Europe. <i>JeDEM</i> 4(2): 245-264, 2012 ISSN 2075-9517</p>	International, EU funded



	<p>everyone’s opinions and views emerge from the debate, without any attempt of formulating a unitary (or compromise) vision of that group. A central team (known as the “Theme Team”), composed by several domain experts, collects and reviews the instant minutes, trying to cluster the issues emerged– with a special eye on conflicting, if not deviant, perspectives – and then provides rankings of statements which are finally submitted to a collective vote by all participants in the tables. To this purpose, every person is endowed with a remote control device.</p> <p>With the Electronic Town Meeting, not only are the citizens directly involved in a public decision making process, but the issues discussed are also prioritized in a way that is immediately visible to policy designers. Recently, the Regional Government of Tuscany has imported the Electronic Town Meeting into its own policy practice, by organizing about ten initiatives of such a kind since 2006. Over time, this has led to the creation of an Open Source, web-based application for collective discussion and voting support, which is integrated with a streaming server to host the participants who may be localised remotely.</p> <p>This application, together with dedicated training and assistance in its installation and configuration, is offered free of charge to all public authorities wanting to experiment an Electronic Town Meeting on premise. All necessary equipment includes a set of normal PC’s for the discussion tables and the Theme Team, a video recording kit to support web streaming, a number of special remote controls that participants will use to express their votes, and a network hub connecting the site server with all individual tables. To participate in the Town Meetings from remote, users only need to access the Internet with their own PC or mobile device.</p>		
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Mechanism	Description	References	Country
European Citizens' Deliberation method			
Meeting of Minds, European Citizens' Deliberation on Brain Science, 2005-2006	<p>Cité des Sciences, the main French science centre (now part of Universciences) has also organised a number of public consultations, often in the framework of EU funded Science and society projects such as "Meeting of Minds" on brain research.</p> <p>MEETING OF MINDS: 126 citizens from nine European countries dialogue on the theme of the rapid development of the neurological sciences. It's never been done before: 126 citizens from nine European countries entered into a dialogue amongst each other about the future of our brain. Throughout 2005 and into 2006, this 'European citizens' panel' discussed what they think should be done with our new-found knowledge on the brain. In the course of the process, a great number of European researchers, ethicists, stakeholders and policy-makers have been invited to actively participate in this debate. The European citizens debate on brain science emanated in a report and recommendations. These were offered to important European research and science communities, as well as European and</p>	<p><u>Sources:</u> MASIS Report France, p.15.</p> <p>MASIS Report Hungary, p. 40.</p> <p>King Baudouin Foundation, Belgium: http://www.kbs-frb.be/otheractivity.aspx?id=193934&language=1033</p> <p><u>Additional information:</u></p>	International, EU funded.



	national policy-maker. The Meeting of Minds, ECD process aimed at setting the European agenda for brain research.	www.meetingminds europe.org.	
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Mechanism	Description	References	Country
Formal public dialogue			
BBSRC Bioenergy Public Dialogue 2013, (Biotechnology and Biological Sciences Research Council, UK) plus other ex.	<p>The Bioenergy Dialogue took place between September 2012 and December 2013 and was carried out by BBSRC (Biotechnology and Biological Sciences Research Council) with co-funding and support from Sciencewise. The data analysis was conducted by Ipsos MORI and the project was evaluated by Collingwood Environmental Planning (CEP). The aims were: To explore with members of the public, their views in regard to bioenergy, and consider those views in our strategy and policy development in bioenergy:</p> <ul style="list-style-type: none"> • To pilot a novel approach to public dialogue, to develop an ongoing, informed discussion between ourselves, our research community, the public and other stakeholders, around bioenergy research Objectives • To facilitate discussions between the BBSRC scientific community involved in bioenergy research and members of the public • To identify public views, concerns and aspirations about the science, social implications, and ethics of bioenergy research • To raise awareness within BBSRC of the needs and views of the public in relation to bioenergy • To inform our strategy and policy setting around bioenergy • To disseminate our findings to key stakeholders, for example, the government • To develop and test a novel, flexible model of dialogue for discussion of complex issues that enables engagement with a large group of people nationwide. 	<p><u>Source:</u> http://www.bbsrc.ac.uk/society/dialogue/activities/bioenergy-dialogue/bioenergy-dialogue-project.aspx</p> <p>(mechanism mentioned in Engage2020 survey: See data collection specification, section 3.1 in this report.).</p> <p>For similar dialogues see: Chilvers, J., Machaghten, P., (2011) <i>The Future of Science Governance, A review of public concerns, governance and institutional response</i>, BIS/Sciencewise-ERC 'Science, Trust and Public Engagement' project.</p>	United Kingdom



Mechanism	Description	References	Country
Gatekeeper analysis method			
Peloton, Demos Think Tank, Finland	<p>Green economy is widely recognized as one of an essential driver shaping businesses and innovation strategies in the coming years. However, only in very few consumer sector companies' sustainability and innovation are interlinked in responsibilities of professionals: sustainability issues are often still too remote or marginal to be a key innovation driver for people working with innovation management. Here we aim at depicting alternative strategic approaches for bridging this gap and engaging different groups of professionals in seeing sustainability as a driver for innovation.</p> <p>Peloton refers to the group that rides together to save energy on a bicycle race and it also means 'fearless' in Finnish. Peloton has been operational for five years with fifteen innovation workshops with hundreds of gatekeeper professionals from distinct, even competing, companies. During the workshops, the companies have co-created dozens of new sustainable innovation concepts. Many of them have become real. As a result, the Peloton strategy is being proposed as a tool to link smart use of resources and business. The strategy helps businesses to understand who are the key professionals within corporations with potential capabilities of combining sustainability, user-centrism and innovation as well as embedding them as part of job descriptions. Gatekeeper analyses provides a tool that helps to articulate opportunities beyond energy efficiency and the current ecological consumer markets serving only a fraction of the total market size in a new, more user-centric manner. This could help them in finding new alliances within company and link their sustainability targets to business targets. The method of recognising 'gatekeepers' in bringing desired behavioural changes forward is a method used by the think tank Demos in Helsinki, Finland. The method has been used, e.g., in interventions for changing the energy behaviour of citizens and in attempts to increase the daily physical exercise of children. The gatekeeper analysis method includes recognising the relevant actors in each case: for example who are 'the authorities standing on the gates of the energy decisions'. In addition to legislators and green businesses as gatekeepers in energy-related behaviour, gatekeepers may include also builders, work communities etc. These actors are able to influence the big decisions in the policy area, either enabling or denying access to low-energy behaviour.</p>	<p><u>Source:</u> http://www.demos.helsinki.fi/julkaisut/gatekeepers-of-sustainable-innovation/ http://www.demos.helsinki.fi/julkaisut/gatekeepers-changing-consumers-behaviour-in-energy-consumption/</p>	Finland



Mechanism	Description	References	Country
Mock trial			
Mock trial in Cardiff Crown Court regarding the National DNA Database (NDNAD) with young people aged 15 – 18 years (2008)	<p>We describe an engagement activity developed in South Wales to engage young offenders with ethical and social issues surrounding the NDNAD – a Mock Trial – and how we facilitated the presentation of their views to policy makers. We ran a mock trial in Cardiff Crown Court (2008), with young people aged 15 – 18 years taking roles as the prosecution, defence and the jury, with the charge: that the government would be guilty of causing an unreasonable threat to the civil liberties of the United Kingdom by the creation of a universal DNA database.</p> <p>The project had four main phases:</p> <ol style="list-style-type: none"> 1. Research with the target group comprising 10 focus group discussions. The results of this fed into the development of the charge that would be put to the Court 2. Pre-trial workshops. The project team and partners worked with the prosecution and defence teams as they prepared their cases over a period of weeks, and also ran induction events at the Court with the prosecution, defence and jury 3. The trial. The processes conducted in a criminal justice trial were emulated as closely as possible 4. Dissemination. The young people presented their verdict to the Human Genetics Commission at a plenary session as part of the HGC's consultation 'The forensic use of DNA and the National DNA Database'. <p>In this project, our approach to public engagement was to bring together experts and decision makers with sectors of the public not regularly contributing to the policy process for mutual benefit: all parties learn from each other and gain through their shared knowledge.</p>	<p><u>Source:</u> British Science Association: http://collectivememory.britishtscienceassociation.org/memory/national-dna-database-on-trial/</p> <p>Anderson, Claudine et al. (2011): The National DNA Database on trial: engaging young people in South Wales with genetics. Public Understand. Sci. 20(2), 146–162.</p> <p><u>Additional information:</u> See sources</p>	Wales, UK

Mechanism	Description	References	Country
National assembly			
National assembly in Iceland (initiative called "Þjóðfundur") on Iceland's future, 2009	<p>A good practice when it comes to involving the broader public in policy making and thinking about the future, is a recent initiative called "Þjóðfundur" or national meeting. Stimulated by the economic crisis that Iceland is facing, this initiative aims to provide a broad platform for discussing and thinking about Iceland's future. The „meeting“ involves 1500 randomly chosen Icelanders of all classes and with all kinds of backgrounds; actually, the groups is randomly chosen from the telephone book.</p> <p>The starting point in the meeting that took place in November last year, was the question „which values are important for Iceland?“ After identifying these values the discussion moved on by looking how different policy areas should/could be changed in order to uphold these values. The results are published and large coverage in the media is strived for.</p>	<p><u>Source:</u> MASIS Report, Iceland, p. 32-33</p> <p><u>Additional information:</u> http://participedia.net/en/cases/national-assembly-iceland-2009. http://www.thjodfundur2009.is</p>	Iceland



Mechanism	Description	References	Country
Open space (sml. Unconferences, fish bowl)			
The Local Government Management Board (LGMB). Forum for all UK local authorities - on sustainable development	<p>The Local Government Management Board (LGMB) runs an annual Forum for the environment co-ordinators of all the UK local authorities. A request for fewer 'lectures', more networking and more say in what happens, led to a dramatic change in the seventh year of the Forum - to the Open Space format. On the theme of the issues & opportunities for achieving Sustainable Development using LA21 processes in 21st century Britain, an agenda of 52 sessions was created, and 44 workshops run by the 250 participants. A form of Vision Fair (see the Choices entry for a brief description) was added to the final stages of the day, to identify priorities from the 96 workshop recommendations, and for people to sign-up for further conversations and action. The enthusiasm and commitment generated by the Open Space format resulted in a 120 page report full of action points to be taken forward after the event - the report was delivered to everyone the next day.</p> <p>OPEN SPACE is an intensely democratic framework which enables an unlimited number of participants to create their own programme of discussions around a central theme. It is particularly effective in generating high-energy participation, learning and commitment to action. Open Space is extremely flexible and needs minimal organisation. It can cater for almost any number of people, and usually lasts between one and three days. Open Space works particularly well when: • there is an urgent issue needing quick action; • large and diverse groups are involved; • there are complex and potentially conflicting issues. Open Space is unsuitable when: • the course of action has already been decided on; • someone wants to control the meeting or event; • there is inadequate follow-through after an event.</p>	<p><u>Source:</u> The New Economics Foundation (NEC) (1998): PARTICIPATION WORKS! 21 techniques of community participation for the 21st century. The New Economics Foundation, p 32-33.</p> <p><u>Additional information:</u> See source</p>	United Kingdom



<p>Inprofood project (EU), 2011-2014 - Towards sustainable food research (open space conference plus awareness scenario workshops)</p>	<p>Food and health is a highly complex societal challenge and public engagement in research requires ever more focus. Over the past decade, most EU Member States have identified food and health as key priorities. This is in response to increases in obesity and diet-related chronic diseases such as diabetes and cardiovascular diseases amongst their populations. Attempts to increase public awareness of appropriate ways to eat more healthily though do not seem to have led to significant changes in patterns of food purchase and consumption. It has become obvious that the development of effective measures for improvement is a demanding task and requires further systematic research and innovative approaches. INPROFOOD is determined to tackle this hugely ambitious task during 3 years of intensive activities. Their aim is to foster dialogue and mutual learning between industry, academia and civil society and already in the earliest stages of the research processes directed towards developing innovative approaches (technical and social) for dealing with the food and health challenge.</p> <p>In fall 2013 (on 15th November) around 70 experts and stakeholders from all across Europe and beyond gathered to a full day for a “European Open-Space-Conference Food and Health - Research 2020. How can we shape the future of research in food and health? “at the Royal Flemish Academy of Belgium for Science and the Arts in Brussels, Belgium. This conference was conducted as part of the EU-project Inprofood, funded under the 7th framework of science and society. The participants came from 18 different countries, mostly Europe, but also from as far as the US, Chile, Israel and Egypt, and brought in a wide spectrum of expertise and cultural backgrounds. Looking at their affiliation, they represented various groups, ranging from NGOs of the food and health sectors, industry associations, companies of food production, scientists and public authorities including ministries. The conference was based on the Open-Space-Technology, which was developed in the US in the 1980s based on the insight that mutual learning is best done with some structure, but with as much freedom as possible. This “book of proceedings” is the result of the participant's contributions and intense discussions during the Open-Space-Conference in Brussels, and a feedback process after the event. The project also included (European) Awareness Scenario Workshop(s): Stakeholder groups gathering small working groups of changing composition and sitting in a circle to discuss and share experiences, demands and concerns about a topic. 2 sessions: worst- and best case scenario building. European Scenario Workshop: Participants were supposed to discuss and develop the alternative scenarios for the specific activity/policy. First the negative scenarios were discussed in the homogenous stakeholders groups (“homogenous” in the sense that all members of the group represent the same stakeholder category). Later heterogeneous groups discussed the positive scenario. Both sessions were followed by the presentations of the results of the group work and common discussion. Workshop participants were recruited via the random selection procedure and open call method.</p>	<p><u>Source:</u> http://www.inprofood.eu/documentation/</p> <p>Engage2020, methods: See data collection specification, section 3.1 in this report.</p> <p><u>Additional information:</u> http://www.inprofood.eu/documentation/ http://cordis.europa.eu/easw/src/intro.htm http://www.inprofood.eu/documentation/ (reports on three workshops held in Slovakia)</p>	<p>International, EU funded.</p>
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Mechanism	Description	References	Country
Parliamentary technology assessment			
PACITA - Parliaments and Civil Society in Technology Assessment	The PACITA project (ends March 2015) builds on already existing experiences and networks established in the field of technology assessment, such as the European Parliamentary Technology Assessment network (EPTA39), where three of the current project partners are members. There are also a number of studies and projects available in the technology assessment field, and PACITA aims to synthesise and incorporate these findings, share best practices and further develop models with a broader international outlook, engaging countries with less developed technology assessment infrastructures. The project focuses on enhanced knowledge generation and increased capacity building to improve evidence-based policy-making in the project partner countries. In addition, through systematic dissemination of the project results, PACITA also aims to engage other stakeholders, such as European policy makers. PACITA uses innovative approaches as a result of the different types of partners included in the project, combined with multidisciplinary methods and the variety of stakeholders engaged in project-related activities.	<p><u>Source:</u> Tehnopolis group (2012): Sis Case Studies, May 18, first version, pp. 81-83: See data collection specification, section 3.1 in this report.</p> <p><u>Additional information:</u> See source.</p> <p>http://www.pacitaproject.eu/</p>	International, EU funded.

Mechanism	Description	References	Country
Planning for real			
Planning for real on an East London Estate	<p>'Planning for Real' was the centrepiece of two years of community involvement on an East London estate. The estate, with a population of approximately 1000, has a wide mix of age range, and unemployment of over 19%. Resident morale was low, and it had a reputation of high racial tension. A 3D model was made by children in the two schools on the estate and several 'Planning for Real' events took place. During these events the community registered many problems, ideas and suggestions over numerous issues concerning the regeneration of their estate. There were a number of almost immediate developments: a residents' action group was formed, the local bus company undertook to restore a bus route through the estate, and a youth workers' group was formed to co-ordinate all youth provision on the estate. Utilising small grants offered through the project, a number of voluntary resident-led mini projects were set up including an after-school club, parents and toddlers group and a sewing class. Residents are now involved in the consultation process for the next round of SRB bids.</p> <p>PLANNING FOR REAL - is an eye-catching, hands-on method which people use to sort out what needs to be done to improve their neighbourhood. Using the 'Planning for Real' process, a large 3D model of the neighbourhood is made and used by the people who live there to show their needs in a non-confrontational way. Local schools and local groups help to make the model. This model is taken around to different venues to raise awareness. Interest can also be created through resident-led surveys to identify local resources of skills and experience. The model is used at open meetings, which are held at places, and times, suited to the</p>	<p><u>Source:</u> The New Economics Foundation (NEC) (1998): PARTICIPATION WORKS! 21 techniques of community participation for the 21st century. The New Economics Foundation, p. 42.</p>	United Kingdom



	<p>community, e.g. 'women only' consultations in Muslim communities or events to attract young people. The suggestion cards and the publicity materials can be translated into locally used languages.</p> <p>At the 'Planning for Real' exercise lots of illustrated suggestion cards are available, covering community facilities, crime and safety, the local environment, health, housing, leisure, traffic and transport, work, training and the local economy. Blank cards are also available for people to make their own suggestions. The use of a model, on which participants place their suggestion cards, ensures that full participation can be achieved. A model is much more easily understood than a map; using suggestion cards means that ideas can be put forward without needing to be articulate or self-confident; the pictures on the suggestion cards assist those with poor literacy skills and those whose first language is not English; and the method appeals to people of all ages. This can be followed up by group meetings with the community to sort out and prioritise the suggestions so that a profile of community needs can be drawn up. When used fully, 'Planning for Real' is a complete process of community involvement containing many of the elements needed to facilitate effective capacity building in local communities. It can be applied to anything from usage of a small patch of land to strategic planning; from design of play facilities to examining health care options; from safety issues to developing a Local Agenda 21 strategy.</p>		
<p>Creating a Neighbourhood Action Plan for Park Wood, UK 2009</p>	<p>Planning for Real was appointed by Maidstone Borough Council to run a community engagement process for one of the Council's priority areas which led to the development of a neighbourhood action plan. Planning for Real was appointed in July 2009 by Maidstone Borough Council to provide a full support programme for the delivery of a pilot Planning for Real® community engagement process for one of the Council's priority areas, Park Wood, which led to the development of a neighbourhood action plan. In April 2009 the new Sustainable Community Strategy 'Maidstone 2020' identified that: 'Approximately 11 per cent of Maidstone's population live within areas which are amongst the most disadvantaged 20 per cent in the country.' It also identified that the issues faced by residents in these areas – including parts of: Park Wood, Shepway North, Shepway South and High Street Wards – would be exacerbated by the economic downturn. The Council and its partners set up a group to examine the best way to tackle the issues faced by these areas and chose to adopt an approach of neighbourhood planning in conjunction with local residents. In July 2009, the decision was made to use Planning for Real® (PFR) as it was seen to be the most effective way of involving and engaging with residents, and to pilot the approach in Park Wood.</p> <p>As PFR is a community-led process it was important to develop the skills of the local resident volunteers, and the local stakeholders with whom they would be working closely, so that all could take on an active role in delivering the process. The PFR team delivered two training sessions which enabled residents to learn how to make a 3D model, organise and run consultation events, record suggestions, identify priorities and develop an action plan with the involvement of voluntary and statutory agencies. A key role would be to engage those residents who wanted to take part but were anxious to because of their poor reading skills. The Neighbourhood Planning team, in conjunction with the resident</p>	<p><u>Source:</u> Planning for real: http://www.planningforreal.org.uk/projects/maidstone-borough-council-creating-a-neighbourhood-action-plan-for-park-wood/ and see more projects: http://www.planningforreal.org.uk/</p> <p><u>Additional information:</u> Regarding the process and outcomes of the initiative see source.</p>	<p>United Kingdom</p>



	<p>volunteers group, organised a programme of 20 PFR events which included taking the model to a wide range of different groups which met at different venues around Park Wood. The 20 consultation events generated 2,820 individual comments. The analysis of the suggestions recorded as a result of all 20 consultation events identified the need for three separate resident and stakeholder workshops which were held at the local community centre, focusing on specific locations and suggestion themes.</p> <p>Three years on, in April 2012, we contacted Jim Boot, former Community Planning Co-ordinator at Maidstone Borough Council for an update on progress with the Park Wood Neighbourhood Action Plan. At the time of the PFR process, unemployment was very high in the Parkwood area. One of the first developments which tied in with the end of PFR process was the setting up of a job shop in Park Wood and the launch of a new support service for families with inter-generational unemployment. A national charity came to the area to set these up and was able to piggy back on the final PFR events in order to raise awareness and launch these services. Three key themes were identified by residents through the PFR process, and for each of them there were 'quick wins' which helped continue the momentum of the engagement process. The PFR process enabled residents to have their say on what the priorities should be, and in the process it increased partnership working and strengthened the relationships between local residents and stakeholders.</p>		
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Mechanism	Description	References	Country
Public debates			
Governmental organised public debates on science, innovation etc., Serbia	The Government of the Republic of Serbia, i.e. the Ministry of Science and Technological Development organises public debates in the preparation of key documents of the state within these fields (science, development, innovation, etc.). Even then, the government representatives and researchers from the universities or research institutes which are located their areas have the dominant role. Businesspersons are also included when these debates are held in the Chamber of Commerce.	<u>Source:</u> MASIS Report, Serbia, p. 13.	Serbia



<p>National Commission for Public Debate (Commission Nationale du Débat Public, CNDP, EX on salary negotiations and bioethics, France</p>	<p>A National Commission for Public Debate (Commission Nationale du Débat Public, CNDP) was created in 1997 and its field of action enlarged in 2002 and 2010. The agency is responsible for setting up debates, at its own initiative or at the request of the government, around issues concerning national scale development and equipment. It covers a number of general topics, often environment-related (eg. creation of airports or fast train line) but also questions concerning science and technology (nanotechnology, nuclear waste).</p> <p>An exceptionally ambitious public debate, called "Grenelle of the environment" - in reference to historic salary negotiations that took place in a ministry in Rue de Grenelle after the massive strikes of 1968 - was set up in 2007. It included environmental groups, trade unions, employers, local authorities and the State and produced a long series of recommendations about environmental problems and their governance, a number of which have been transcribed into law. On a smaller scale, a public consultation on bioethics (Etats généraux de la bioéthique) was set up in the framework of the renewal of the bioethics law in 2009.</p>	<p><u>Source:</u> MASIS Report, France, p. 15.</p> <p><u>Additional information:</u> CNDP: www.debatpublic.fr/</p> <p>http://www.legrenelle-environnement.fr/-Version-anglaise-.html</p> <p>Grenelle Laws 1 and 2: http://www.legrenelle-environnement.fr/-Lois-.html</p> <p>Etats généraux de la bioéthique: http://www.etatsgenerauxdelabioethique.fr/</p>	<p>France</p>
<p>Parliament Commission for Education and Science, debate session on social impacts of S&T e.g. Portugal</p>	<p>An example of formal structures is the Comissão Parlamentar de Ciência e Tecnologia (Parliament Commission for Education and Science). This has been a particularly active body throughout the last 5 years. Public debate sessions have been organized not only around matters of scientific policy but also with a particular attention to the social impact of S&T.</p>	<p><u>Source:</u> MASIS Report, Portugal, p. 15.</p> <p><u>Additional information:</u> www.parlamento.pt/sites/com/XLeg/8CECposRAR/Paginas/default.asp</p>	<p>Portugal</p>
<p>Public debate on new budget for the academy of sciences, Czech Republic, 2009</p>	<p>Significant debates with the participation of the public took place in 2009 in relation to the proposal of a new budget for the Academy of Sciences, which was 20% lower in comparison with 2008 and was projected to be 50% lower in 2012. There were many debates presented in the media, in which the representatives of scientific and educational institutions, government and industry participated and discussed the ratio of institutional and project funding, basic and applied research, the levels of applicability of results in research and industry. New civic initiatives devoted to the support of science in society have come into being (Science Is Alive!).</p>	<p><u>Source:</u> MASIS Report Czech Republic, p. 20.</p>	<p>Czech Republic</p>



Mechanism	Description	References	Country
Publi(c) forums			
Research promotion Foundation, Cyprus	In general, there exists no formalised procedure in the form of a Law, which obliges the „Government“ stakeholder to conduct public consultation ahead of a political decision related to Science in Society issues. However, in practice, the „Government“ stakeholder, as well as other organizations related to it, employ processes which allow citizens to engage in Science in Society priority setting activities. A typical example of such a process is the Research Promotion Foundations“ public dialogue, on the design and development of its National Framework Programme on Research and Innovation. During the public dialogue phase, various stakeholders, mainly from the „Research and Academies“ sector, are invited to take part in the dialogue. More importantly for the subject discussed, the participation of citizens and civil organizations is encouraged through the implementation of public forums. While the participation of individual citizens is limited (in relation to the input generated from the „Research and Academies“ stakeholders), it provides a platform for an increased citizens participation in priority setting.	<u>Source:</u> MASIS Report, Cyprus, p. 21-22. <u>Additional information:</u> Research Promotion Foundations“ public dialogue, http://www.research.org.cy/EN	Cyprus
The International Haplotype Mapping (HapMap) Project	The International Haplotype Mapping (HapMap) Project is an international collaborative project to determine the common patterns of DNA sequence variation across the human genome by genotyping four populations in the world including persons of Japanese, Han Chinese, Northern and Western European and Yoruban ancestry. The project was initiated in October 2002 by the International HapMap Consortium, which consisted of organizations and institutions in five countries: USA, Japan, United Kingdom, Canada and China. It mapped the regions of the genome inherited over the generations (haplotype blocks represented by the set of single nucleotide polymorphisms (SNPs)). The HapMap project used the term “community engagement”, as has been popularly used in the USA over the past decade. The HapMap community engagement project for Japan was conducted from early 2003 to the middle of 2004. A variety of communities were targeted both inside and outside of Japan. A variety of methods were used, including opinion surveys on selected communities, information lectures and academic conference meetings in different locations, including outside of Japan, to gather input from Japanese living abroad, and meetings held in Japan. The International HapMap project demanded community engagement efforts at participating project sites. The community engagement team included the authors, who have backgrounds in medical genetics and bioethics. We held 12 events, comprising two public forums and 10 exploratory meetings, which involved around 200 participants altogether from a broad range of social sectors including lay people and people from related sectors or from citizens’ groups interested in the topic, as well as experts from various fields (e.g., genetics, law, sociology, politics, ELSI). The team assessed the meetings afterwards and examined any conflicts of interests, potential harms to the donors, and other ethical issues raised.	<u>Source:</u> Suda, Eiko, Darryl Macer and Ichiro Matsuda (2009): Challenges to public engagement in science and technology in Japan: experiences in the HapMap Project. Genomics, Society and Policy 2008 2009, Vol.5, No.1, pp. 16-18. <u>Additional information:</u> See source	International
Public Forum on genetic testing (spring, 2003), organized by the King	The 'Koning Boudewijn Foundation' organised a public forum on genetic testing. In the period of January - March 2003, 30 laypeople (15 from Flanders and 15 from Wallonia) from 6000 randomly chosen Belgian citizens worked together for 3 weekends to develop a citizens' advice on genetic testing. The participating citizens were assisted by professional coaches and translators and had the opportunity to discuss with experts.	<u>Sources:</u> Belgian Biosafety Server: http://www.biosafety.be/PubFora/Pubfora.html	Belgium



<p>Boudewijn Foundation, Belgium</p>	<p>During the third weekend (28-29 March 2003), a number of experts answered the panel's questions during a public meeting. On 31 March 2003 the panel presented their advice to the public and the media.</p>	<p>MASIS Report, Belgium, p. 18</p> <p><u>Additional information:</u> Goorden, Lieve. "Public Deliberation on Biotechnology: Recent Experiments with Citizens Panels in Belgium" Paper presented at the annual meeting of the American Political Science Association, Philadelphia Marriott Hotel, Philadelphia, PA, Aug 27, 2003 http://www.allacademic.com/meta/p63398_index.html</p>	
<p>Public Forum on genetically modified food (spring 2003), organized by viWTA (Flemish parliamentary TA Institute) , Belgium</p>	<p>On request of the Flemish Parliament, the Flemish Institute for Science and Technology Assessment (Vlaams Instituut voor Wetenschappelijk en Technologisch Aspectenonderzoek (viWTA)) organised a public forum on genetically modified food. From the 2000 randomly contacted citizens of the Flemish part of Belgium, 15 committed and interested citizens with different backgrounds were selected as the panel. During two introductory weekends the participating citizens were prepared for their task. They learned about the technology and its possibilities, examined the potential questions and determined who should be invited to answer them. Much attention was devoted to introductions, co-operation and the atmosphere in the group. The panel was coached by a professional facilitator and by the project management. The third weekend was held on 24-26 May 2003 in Brussels. During the meeting experts were invited to answer the questions of the citizens and to discuss. At the end of the public forum, the participants presented their advice and report to the President of the Flemish Parliament in the presence of the Flemish media. A stakeholders meeting will be held on 15 September 2003 in the Flemish Parliament.</p>	<p><u>Sources:</u> BELGIAN BIOSAFETY SERVER http://www.biosafety.be/PubFora/Pubfora.html</p> <p>MASIS Report, Belgium, p. 18</p> <p><u>Additional information:</u> Goorden, Lieve. "Public Deliberation on Biotechnology: Recent Experiments with Citizens Panels in Belgium" Paper presented at the annual meeting of the American Political Science Association, Philadelphia Marriott Hotel, Philadelphia, PA, Aug 27, 2003. Available at: http://www.allacademic.com/meta/p63398_index.html</p>	<p>Belgium</p>



		3398_index.html	
Public Forum on field testing of genetically modified organisms (spring 2003), organized by the Belgian Minister of Consumer Affairs and Environment. Belgium	On request of the Federal Minister for Consumer interests, Health and Environment and the Federal Service of Public Health, Food Chain Safety and Environment, the Foundation for Future Generations (La Fondation pour les Générations Futures), with the assistance of the Consultant M.O.I.S.E. mediations organised a public forum on the deliberate release of GMOs in the field respectively in Gembloux (Wallonia) and Beernem (Flanders). The main idea was to determine which criteria need to be taken into account for authorisation. From the almost 400 randomly chosen citizens contacted, 7 participated in the forum of Gembloux and 10 to the forum of Beernem. After 3 evening's meetings during which they exchanged their interrogations and ideas about GMO's, they determined gradually the subjects they wanted to study further and the experts/stakeholders they wanted to hear. During the weekends of 12 April 2003 (Gembloux) and 26 April 2003 (Beernem) experts were invited to answer the questions of the participating citizens and to discuss. The final advice and report of the citizens were presented to the Federal Minister and other involved stakeholder.	<p><u>Sources:</u> BELGIAN BIOSAFETY SERVER http://www.biosafety.be/PubFora/Pubfora.html</p> <p>MASIS Report, Belgium, p. 18</p> <p>See also: Goorden, Lieve. "Public Deliberation on Biotechnology: Recent Experiments with Citizens Panels in Belgium" Paper presented at the annual meeting of the American Political Science Association, Philadelphia Marriott Hotel, Philadelphia, PA, Aug 27, 2003 http://www.allacademic.com/meta/p63398_index.html</p>	Belgium

Mechanism	Description	References	Country
Publifocus			
Publifocus on nanotechnologies, Switzerland, 2007 and e-health 2007-2008	The Swiss Centre for Technology Assessment (TA-SWISS) was created in 1992 and affiliated to the Swiss Science and Technology Council (SSTC, www.swtr.ch) until the end of 2007. Since the 1st January 2008, the TA-SWISS is a centre of competence of the Swiss Academies, following a change in the Research Law giving the TA-SWISS more independence towards the SSTC, allowing a more concerted action with the SAAS and with the Science and Cité Foundation, and reinforcing the link with Parliament. The TA-SWISS has developed and put together new participative methods (better known as «publiforum» and «publifocus») through national and European projects (for example via publifocus on nanotechnologies or European Parliamentary Technology Assessment projects as EUROPTA). Participative processes intend to gather citizen's opinions and arguments on controversial themes related to technology. They require careful attention to the recruitment of participants, to the management of the process to avoid influencing the results and to the presentation of results. They are intended to contribute to increased public awareness and inform further debates, but also to help decision-makers. In fact, these participatory activities are very useful for members	<p><u>Source:</u> MASIS Report, Switzerland, p. 17-18.</p> <p><u>Additional information:</u> TA-SWISS: https://www.ta-swiss.ch/?uid=77&search=publifocus&x=0&y=0 (however no final report exist in English)</p>	Switzerland



	of Parliament who can therefore stay well informed, but probably less for citizens, as their policy impact is not evaluated. In the last five years, the TA-SWISS has carried out two public-focuses (on nanotechnologies in 2007 and on eHealth (2007/2008)); this is a little bit less than during the 2000-2005 periods. In fact, the TA-SWISS is working less on citizen involvement activities and more on studies.		
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Mechanism	Description	References	Country
Scenario workshop	In line with the future workshop, the aim of the scenario workshop is to create a basis for local action. In addition, the workshop is used to gather knowledge about barriers and participants' experiences and visions of the topic as well as their attitudes towards the defined scenarios and the basis for these. The scope of the topic must not be too narrow and should focus on the assessment of and choice between different types of technology. It is also important that the topic affords participants the possibility for action, i.e. that they can bring their influence to bear and that all the decisions have not already been taken. It must be a topic of social relevance and where there is a lack of consensus about the need for local action. The exchange of technical insight and user experience must lead to the creation of new knowledge.	<u>Source:</u> The Danish Board of technology: http://www.tekno.dk/subpage.php3?article=1235&topic=kategori12&language=uk	
"New Climate – New Life" 2004, Denmark	Most experts agree on, that the sea around us will rise as a consequence of climate changes. When that happens it will affect nature, agriculture, houses etc. along the coastline. The planning and initiatives that shall take account of the water rise is almost absent in regions and communities. The purpose of the project carried out by the Danish Board of Technology was to draw attention to the consequences of the climate changes, so that these consequences can be considered in long-term planning. As a part of the project the Danish Board of Technology arranged two scenario workshops in Næstved and Ho Bugt, where local actors gathered to discuss the future planning in the two local areas considering the water rising half a meter.	<u>Source:</u> The Danish Board of Technology http://www.tekno.dk/subpage.php3?article=1089&language=uk&category=11&topic=kategori11 <u>Additional information:</u> See source	Denmark



Mechanism	Description	References	Country
Science museums and centres (only beyond interactive procedures, dialogue based mechanisms)			
Boston Museum Let's Talk, Policy, Public Engagement, and Dialogue, 2013	<p>In Partnership with University of Massachusetts Amherst. MOS and the University of Massachusetts, Amherst are hoping to partner with you and your colleagues to consult the public around emerging scientific and technological issues, and to share the views of public citizens with community stakeholders and people who are shaping policies. We want to hear from you about what topics, formats, and processes will be most attractive and what goals, dreams and opportunities you might have for these activities. Keynote Speaker: Greg Watson, Massachusetts Commissioner of Agriculture Jane Fountain, University of Massachusetts Amherst and the World Economic Forum (June 2013). Increasingly, the Museum and science centers around the country are convening spaces for members of the public, scientists, and policymakers to discuss social and ethical issues associated with emerging science and technologies. Join us to explore how these programs will help us tackle other complex issues facing our state. In September 2012, the Museum of Science, in partnership with the University of Massachusetts Amherst, hosted a Massachusetts site of a global deliberation on biodiversity. This one-day meeting brought together 100 ordinary citizens who developed informed opinions through structured dialogue and made recommendations on biodiversity policy issues. Delegates at the United Nations Convention on Biological Diversity (Cop 11) received and considered the results of these discussions, along with results from other states and from 24 other countries. Through the Museum's forum program, The Museum the city of Cambridge also engaged scientists and policy-makers with the public to elicit input on policy issues and newly published research on issues relevant to Massachusetts residents</p>	<p><u>Source:</u> https://www.eventbrite.com/e/lets-talk-policy-public-engagement-and-dialogue-registration-6653648241</p>	United States



Mechanism	Description	References	Country
Science parliaments (Young European parliament)			
2WAYS project – Two ways science s for communicating European research about life sciences with science festivals and science centres, museums, science parliaments, and impact survey, 2009-2011	<p>WAYS was a two-year project that involved 6 consortium members and 23 subcontractors, who organised a series of science communication events on the life sciences, including a new format called ‘science parliaments’.</p> <p>The project is having important impacts on science communication, as the new innovative formats developed and used during the project continue to be used across Europe. The science parliaments in particular have attracted considerable interest, and the format has recently been adapted for use in schools. The project has also deepened the partnerships between project participants, and helped to establish new contacts within the life sciences research community and with science communication entities outside of Europe. 2WAYS was a support action funded under FP7’s SiS programme, running for 24 months from 2009 to 2011. The consortium consisted of 7 members and was coordinated by the European Science Events Association (EUSCEA58), an association of organisations that organise science communication events. The project consisted of three main elements.</p> <ul style="list-style-type: none"> • New interactive science presentations were developed jointly by two partners, in collaboration with scientists. They often involved games, such as card games or role- playing, and experiments. The presentations were used in the science festivals that each of the partners organised in its city. The presentations not only used newly developed formats, they were also about latest research results in the life sciences. The idea behind this was that often in science communication, results and discoveries are presented that were made long ago. • Science parliaments are a new format in science communication, modelled on the Young European Parliament. They attempt to overcome the traditional model where researchers talk about their work. Instead, the objective is to make students the main players – asking questions and discussing salient issues. All of the project partners organised science parliaments during their festivals, each attended by 60-100 students aged 16-19, who debated ethical issues around life science, such as using embryonic stem cells and genetic information. • An impact assessment survey accompanied the science communication events. The same questions were used for all events so that comparisons could be made. The survey was conducted in all the 17 countries involved and put online to gather more responses. <p>A final event, the EUSCEA 2WAYS Science Festival, took place in Brussels. This included all the science presentations and the "Young Europeans Science Parliament" in the European Parliament building. The new interactive science elements and the science parliaments are the most important outputs of the project. These formats continue to be used beyond the life of the project.</p>	<p><u>Source:</u> Tehnopolis group (2012): Sis Case Studies, May 18, first version, pp. 99-102: See data collection specification, section 3.1 in this report.</p>	International, EU funded.
Science Parliament 2010, Denmark	Initiated by Danish Science Communication (DNF), as part of an international project the Science Parliament seeks to engage young people in a debate about new technologies, ethics and societal responsibility, by	<p><u>Source:</u> MASIS Report Denmark, p. 39-40</p>	Denmark



	arranging visits to e.g. pharmaceutical and biotech companies, hearings and committee work on selected topics, and finally a debate and enactment of a resolution to be carried on to a joint European Science Parliament in November 2010.	<u>Additional information:</u> http://www.formidling.dk/sw41447.asp (in Danish).	
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Mechanism	Description	References	Country
SOCIAL AUDITING			
Irish Fair Trade Network (IFTN) - dialogue with stakeholders to promote fair trade products	<p>One example of social auditing is with the non-governmental organisation the Irish Fair Trade Network (IFTN). IFTN promotes the buying of fair trade products by consumers in Ireland so as to better the economic and social position of producer groups in Southern countries. They undertook a social audit process as a way of understanding their impact and the difficulties they face in trying to achieve their mission and objectives. This was done through a dialogue process with four of their stakeholders; funders, supporters, staff, and organisations, where the different groups defined the questions upon which the assessment was based. IFTN is a small organisation, and for them this was their first step towards a more meaningful dialogue with a wider group of stakeholders. In the future they hope to broaden out the dialogue with producer groups in the South and consumers in the North.</p> <p>SOCIAL AUDITING is a way of measuring, understanding, reporting and ultimately improving an organisation's social and ethical performance. Social Auditing is used by organisations which realise that they will only continue to prosper if they satisfy the aspirations of their stakeholders. These include employees and volunteers, governments, funders, suppliers, customers, investors, local communities, environment and public interest groups. They are increasingly recognising the need to measure, track and report on their social and ethical performance. The social audit process is not a 'one-off' exercise but a regular cyclical process. This identifies whether the organisation's performance has improved over time in relation to its own objectives, the objectives of its stakeholder and broader social norms.</p>	<p><u>Source:</u> The New Economics Foundation (NEC) (1998): PARTICIPATION WORKS! 21 techniques of community participation for the 21st century. The New Economics Foundation pp. 46-47.</p> <p><u>Additional information:</u> See source</p>	Ireland

Mechanism	Description	References	Country
Technology assessment			
The nano-dialogue(s) of the NanoKommission 2006 -, Germany	The BMBF funding programme on Innovations- und Technikanalysen (ITA, Innovation and Technology Analyses) also performs upstream engagement and considers technological developments during their early phases, with the aim of identifying their potential opportunities and the areas in which relevant research policy should operate. Innovation and technology analyses scrutinise arguments for the design of specific technological developments, aimed at identifying areas of socially desirable technological progress, highlighting the potential for influencing	<p><u>Source:</u> MASIS Report, Germany, p. 26-27.</p> <p>The Federal Ministry for the Environment, Nature</p>	Germany



	<p>such progress and outlining frameworks for relevant political action. ITA projects frequently provide for user and citizen involvement. Orientation shall be provided which should help to promote technology that is in keeping with human and social needs and environmentally compatible. In the field of nanotechnology, many activities were implemented in a very early stage of development. Following the “acceptance crisis” of nanotechnology - or, at least, the fear of a possible acceptance crisis - at the beginning of the century, the nanodialogue of the NanoKommission was established. Recently, the final report of the commission was published. Participatory events including consumers and young people were organised. These activities, mainly funded by the BMBF, were accompanied by studies on toxicological risks of nanoparticles and on strategies and procedures in risk research, risk assessment and management.</p> <p>As part of its Nano Action Plan, the German Federal Government established the NanoKommission in 2006 as a central national dialogue platform. Its mandate was to foster exchange among stakeholders in society on the opportunities and risks presented by nanotechnologies and in doing so help to ensure responsible and sustainable use of nanomaterials. The NanoKommission carried out its work in two dialogue phases (2006 to 2008 and 2009 to 2011), each concluding with a Final report and recommendations to the Federal Government. The NanoKommission comprised around 20 members representing a variety of stakeholder groups. In each of the dialogue phases working groups and/or issue groups were set up to support the work of the NanoKommission and debate particular issues in greater depth. A total of more than 100 experts were engaged on a voluntary basis in the debate on issues surrounding the responsible use of nanomaterials.</p>	<p>Conservation, Building and Nuclear Safety: http://www.bmub.bund.de/en/topics/health-chemical-safety-nanotechnology/nanotechnology/nanodialogue/</p> <p><u>Additional information:</u> http://www.bmub.bund.de/en/topics/health-chemical-safety-nanotechnology/nanotechnology/nanodialogue/</p>	
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Mechanism	Description	References	Country
Walking tours (material deliberation)			
The futurescape city tours project, in DC, 2013 (on nanotechnologies)	Material Deliberation: The Futurescape City Tours (FCT) are the next iteration of the Center for Nanotechnology in Society's large-scale deliberative exercises. In the fall of 2013, six different cities, including St.Paul, Portland, Phoenix, Springfield, Durham, and Washington, D.C., will host coordinated engagements in which citizens and stakeholders come together to deliberate about nanotechnology and its relationship to urban environments and sustainability. The Futurescape City Tours depends upon a set of methods that rely on citizen-driven agendas, the importance of place and materiality, the relevance of multiple timescapes, and the use of photography as a tool for deliberation. Citizens used photography to document their visions of changes in the sociotechnical landscape. They were asked to document places they saw the past persisting, the signs of the present, and the future emerging, paying particular attention to the role of technologies in these locations. In addition to the tour and photography, the pilot integrated science and technology stakeholders and experts on topics the citizens chose into a deliberative learning process. Through the use of these alternative approaches to public engagement, the FCT aims to build capacities among participants to appreciate their role in the trade-offs, path dependencies, and choices which shape technologies and their urban landscape.	<p><u>Source:</u> Engage2020, methods: See data collection specification, section 3.1 in this report.</p> <p><u>Additional information:</u> http://www.cspo.org/content/fct-dc</p>	United States

Mechanism	Description	References	Country
World cafe			
The Financial Planning Association in Australia - 2000 (among other ex.)	The World Café defines itself as “a conversational process based on a set of integrated design principles that reveal a deeper living network pattern through which we co-evolve our collective future” It is a methodology for hosting conversations about relevant questions and themes. The ideal is that there are multiple conversations that build off of each other to explore the issue deeply. Participants of World Cafes are encouraged to draw from their own lives, values, and personal experiences so the group can learn from and connect with each other based on these things. An overall goal is for participants to realize or create a shared purpose and goals. The Financial Planning Association in Australia has so far hosted fifteen World Cafes to guide the growth of their new organization which is a result of a merger in January 2000 between two organizations. The merger presented the opportunity to design a new organization, structurally and philosophically. The cafes, which have ranged in size anywhere from 250 to 4000 people, have been successful at supporting this cultural shift as well as generating goals and steps toward making the new organization a success.	<p><u>Source:</u> Participedia: http://participedia.net/en/methods/world-cafe</p> <p><u>Additional information:</u> See source</p>	Australia



4.5 Public participation

– *the aim is to assign partly or full decision-making-power to citizens on policy issues.* Information is exchanged between sponsors and public representatives and a certain degree of dialogue is facilitated. The flow of information constitutes two-way communication.

Mechanism	Description	References	Country
Citizens' Assembly	A citizens' assembly is a body formed from the citizens of a modern state to deliberate on an issue or issues of national importance. Typically, the membership of a citizens' assembly is randomly selected. The purpose is to employ a cross-section of the public to study the options available to the state on certain questions and to propose answers to these questions. In many cases, the state will require these proposals to be accepted by the general public through a referendum before becoming law. Then, as opposed to a mechanism such as 21st Century Town Meeting by AmericaSpeaks, a citizens' assembly will often have direct impact on decision-making processes.	<u>Source:</u> http://en.wikipedia.org/wiki/Citizens%27_assembly .	
Citizens' Assembly on Electoral Reform, Ontario	Citizens' Assembly (Ontario Citizens' Assembly on Electoral Reform). Using the voters' list in the province of Ontario, Canada, approximately 123,000 individuals were randomly selected and sent invitations to participate in a year-long assessment of the provinces' electoral system. 103 individuals were then randomly selected from among those who expressed an interest in joining the process. The assembly was broadly representative of the population of Ontario in terms of age, occupation, and cultural background. The selection process was designed to ensure equal representation for both men and women. The Citizens' Assembly process proceeded in three stages. The first was a learning phase in which members of the assembly studied electoral systems used around the world. The second was a consultation phase, in which members of the assembly met with other Ontarians to listen to their opinions, concerns and proposals for electoral reform. The third was a deliberation phase in which the assembly debated the options for reform and designed a working alternative to the existing system. This proposal was described in a final report distributed to members of the public. The Ontario Citizens' Assembly met over the course of the fall, winter, and spring of 2006/07. A referendum vote was held on the Citizens' Assembly's proposal in the fall of 2007. The proposal failed to meet the required thresholds established for changing the system. The Ontario Citizens' Assembly was modeled on a similar process conducted in British Columbia in 2004/05.	<u>Sources:</u> Engage2020, survey: See data collection specification, section 3.1 in this report. <u>Additional information:</u> http://www.citizensassembly.gov.on.ca/	Canada
We the Citizens in Ireland, 2011	The key problem facing Ireland in 2011 was that of a lack of trust among the citizens for their political system and its leadership. The 2008 economic crisis struck Ireland particularly deeply, leading to job losses and higher unemployment, banking and fiscal crises, lack of competitiveness, and a sense of moral decline. Citizens felt they were being punished for something that was not their fault. Official polls reflected this general mood. In 2008 trust in the government was at 46%; by 2009 this had dropped to 10%. The 2009 Eurobarometer poll revealed Ireland's level of public trust to be among the bottom five of the then 27 member states. Tellingly, this breakdown in trust was not just felt in connection to the	<u>Sources:</u> http://participedia.net/en/cases/we-citizens-ireland , <u>Additional information:</u> See the final report: We the citizens. Speak up for	Ireland



	<p>government, but also with reference to the Church and the Irish banking system. In 2009, members of the political science departments of several Irish universities came together to form a working group, the Political Science Association of Ireland (PSAI). Their purpose was to seek solutions to the problems arising from the above mentioned crises. In 2010, they lodged a successful grant proposal with a funding organisation, The Atlantic Philanthropies, for their project. We the Citizens was set up by the PSAI in partnership with the Irish Universities Association, a body representing the seven Irish universities.</p> <p>The entire We the Citizens project proceeded in a three-step process: First, open regional meetings were set up whereby any citizens could participate in order to set the agenda for the main event, the Citizens Assembly. Second, a survey was carried out of the regional meetings' participants, and various control groups, in order to ascertain the influence the event had on them and also gain feedback. Third, a representative group was selected from the survey participants to engage in the Citizens Assembly. The stipulation was that these individuals must not have been part of the regional meetings. There were in particular two outcomes that the organisers hoped to observe. First, there should be an increase in 'efficacy and interest' – or put another way, there should be an increase in the level of trust citizens have in the political system and their interest in becoming involved. Second, there should be some noticeable change in their views on specific issues debated. The survey of the experimental and control groups revealed that the Citizens Assembly did, in fact, lead to such changes.</p>	<p>Ireland. Participatory democracy in action - a pilot (2011). Available at: http://www.atlanticphilanthropies.org/sites/default/files/uploads/We-the-Citizens-2011-FINAL.pdf</p>	
<p>Constitutional Council in Iceland, 2011</p>	<p>An Icelandic Constitutional Assembly (Stjórnlagáþing) for the purpose of reviewing the Constitution of the Republic was summoned by an act of Althingi, the Icelandic parliament, on 16 June 2010 as a consequence of the Kitchenware Revolution. It undertook what has probably been the most citizen-led constitutional creation process in the world so far, involving large-scale consultations, including electronic fora. The assembly's proposed constitution passed Parliament and was put to a referendum, where it won the approval of 67% of the electorate. However, the government's term finished before the reform bill could be passed, and the next government has not (as of April 2013) tabled it. The Constitutional Council was a body of 25 appointed Icelandic citizens, which was charged with creating a constitutional draft between 6 April and 29 July 2011. Initially the constitution was meant to be revised by a nationally elected assembly, but following a controversial Supreme Court decision to void the assembly elections, the Icelandic parliament (Althingi) appointed the elects to form a council. The parliament had called for a constitutional revision in response to the national economic meltdown, which had caused the country's stock exchange, currency and banks to crash in October 2008. Taking its cue from nation-wide protests and non-confrontational efforts by civil organisations, the governing parties decided that the citizenship should be involved in creating a new constitution. The council was ordered to do this by drawing on the results of a consultative citizens' forum, as well as by advertising "extensively for proposals from the public, interest groups or other parties." The council attempted to meet this condition by making innovative use of the internet, subscribing to popular social media like Youtube, Twitter, Facebook and Flickr and arguably making Iceland the first country to use</p>	<p><u>Source:</u> http://en.wikipedia.org/wiki/Icelandic_constitutional_reform,_2010%E2%80%9313 http://participedia.net/en/cases/icelandic-constitutional-council-2011 <u>Additional information:</u> See sources</p>	<p>Iceland</p>



	crowdsourcing as a means for constitutional revision. This may have produced some notable ideas, such as the public ownership of Iceland's natural resources, an article on information rights, and an attempt to enshrine the Parliament's role in the supervision of financial management.		
The British Columbia Citizen's Assembly (BCCA), Canada, 2003-2004	In 2003–2004, the Government of British Columbia established a Citizens' Assembly on Electoral Reform. Made up of 160 randomly selected citizens drawn from the provincial voters' list, the BC Citizens' Assembly was given a mandate to study different electoral models, to decide whether British Columbia needed a new system, and if so, to put a proposal for change to a public referendum. They met over the course of a year to learn about electoral systems, to conduct widespread public hearings, and finally, to deliberate on what system would be best for British Columbia. In the end, 160 strangers from all walks of life, with formal education levels ranging from six years to an Oxford doctorate, managed to come to a remarkable degree of consensus on what electoral system would be best for BC—a Single Transferable Vote system similar to the one used in Ireland. On May 17, 2005, British Columbia narrowly missed becoming the first political jurisdiction in the world to change its electoral system by citizen-deliberative means. On that day, the BC electorate was called to vote on the referendum question: "Should British Columbia change to the BC-STV electoral system as recommended by the Citizens' Assembly on Electoral Reform? Yes/No." With advance polls indicating that only one-third of the population had heard of the Citizens' Assembly or the referendum on electoral reform, one can imagine the surprise of many voters arriving at the ballot booth expecting to vote in a provincial election and being asked to approve or reject the voting system itself! Despite the lack of public knowledge of BC-STV or the Citizens' Assembly on Electoral Reform, 57.3 percent of the referendum ballots were marked "Yes," just missing the 60 percent support threshold that would have led to the automatic implementation of the new system.	<p><u>Sources:</u> Lang, Amy (2007): But Is It for Real? The British Columbia Citizens' Assembly as a Model of State-Sponsored Citizen Empowerment. <i>POLITICS & SOCIETY</i>, Vol. 35 No. 1, March 2007, p. 36</p> <p><u>Additional information:</u> See source</p> <p>http://participedia.net/en/cases/british-columbia-citizens-assembly-electoral-reform</p>	Canada

Mechanism	Description	References	Country
Community policing			
Chicago Community Policing	Since 1995, the Chicago Police Department has been holding monthly community beat meetings in 285 neighbourhood beats across the city. In these beat meetings police officers and local citizens discuss how to improve public safety in the neighbourhood. The meetings generate priorities and strategies for action and review progress. Successful strategies will often involve coordinated action by local citizens and the police. Not surprisingly, the quality of meetings and strategies is uneven across the city – although all officers receive relevant training, much depends on their skills of facilitation. On average 17 citizens attend each beat meeting which equates to a city-wide attendance of around 5,000 citizens per month. According to surveys, 14 percent of citizens attended at least one meeting in 1997; 79% are aware of the programme. Community Policing is particularly interesting because there is a strong incentive for disadvantaged citizens to attend. Evidence shows that this innovation reverses the typical participation bias – citizens from within	<p><u>Source:</u> Smith, Graham (2005): <i>Beyond the ballot. 57 Democratic Innovations from Around the World.</i> The POWER Inquiry, p. 57.</p> <p><u>Additional information:</u> Evaluation report from 2004: "Community</p>	United States



	<p>poor and less well-educated neighbourhoods (which suffer from higher levels of crime) turn out at higher rates. One of the strengths of community policing is that the potential for citizen empowerment is high – they are able to participate directly in shaping priorities. As Archon Fung recognises, the ‘short feedback loop between planning, implementation, and assessment increases both the practical capabilities and the problem-solving success of residents and police officers in each beat.’</p>	<p>Policing in Chicago, year ten. Available at:http://www.skogan.org/files/Community_Policing_in_Chicago_Year_Ten.pdf and the Chicago police homepage https://portal.chicagopolice.org/portal/page/portal/ClearPath/Get%20Involved/How%20CAPS%20works</p>	
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Mechanism	Description	References	Country
Initiative	Often confused with referendums, the initiative allows citizens to propose a legislative measure (statutory initiative) or a constitutional amendment (constitutional initiative) if they are able to submit a petition with the required number of citizen signatures. The initiative has mostly been used in Switzerland and some states in the US.	Smith, Graham (2005): <i>Beyond the ballot. 57 Democratic Innovations from Around the World.</i> The POWER Inquiry, p. 81.	
Popular initiative to propose a law prohibiting the growing of transgenics, Spain	Spanish citizens are not consulted and their opinions are not taken into account in making decisions on science and technology. Notwithstanding, there are mechanisms to channel public participation, such as people queries which, with sufficient support, can be sent to the National Parliament and regional parliaments. In the case of scientific aspects, this channel for public intervention has been used on a few occasions. In the case of Catalonia, a popular initiative to propose a law prohibiting the growing of transgenics was submitted to the Autonomous Parliament (but was rejected after requesting a report to an advisory council on science and technology).	<u>Source:</u> MASIS Report, Spain, p. 21-22.	Spain
People queries' a citizen-based initiative to allow stem cell research for the treatment of human diseases put into action by patients' associations, Spain	Spanish citizens are not consulted and their opinions are not taken into account in making decisions on science and technology. Notwithstanding, there are mechanisms to channel public participation, such as people queries which, with sufficient support, can be sent to the National Parliament and regional parliaments. In the case of scientific aspects, this channel for public intervention has been used on a few occasions. Examples of this are the citizens' initiative to allow stem cell research for the treatment of human diseases, put into action by patients' associations in 2002, and which was finally approved by the government in 2004.	<u>Source:</u> MASIS Report, Spain, p. 21-22.	Spain



Mechanism	Description	References	Country
Referendum			
Legislative referendum on the abolition on law on reproductive technology (plus other examples), Italy 2005	A legislative referendum to abrogate an existing law can be called, as was the case with the referendum on Law n.40 from 2004, held in June 2005. That referendum was held following a public petition calling for the abolition of the law on reproductive technologies, cryo- conservation of human embryos and their eventual use in medical research. The referendum failed to reach the necessary quorum for the outcome to be valid so the law is still in place. Other national referenda that have profoundly impacted Italian society in terms of ethics, research and technology, would be the referendum on the Law nr. 898 from 1970 on divorce, held in 1974, the referendum in 1981 on Law nr. 194 from 1978 on abortion and the referendum on nuclear energy in 1987.	<u>Source:</u> MASIS Report, Italy, p. 22-23.	Italy
Referendum regarding greater autonomy to regions, Italy (2001)	On a national level the most important provisions for public consultation and instruments of direct democracy are national referenda. The first institutional referendum was held on the 2nd of June 1946 in which the Italians voted in favour of a Republic over a Monarchy, by a wide margin. Italian law allows for national referendum to be called when 500,000 citizens have signed a petition in two instances. Firstly as a constitutional referendum for the approval or disapproval of amendments of constitutional law. That was used for the first time in the history of the Italian republic in 2001 when the Italians voted in favour of a major structural change by giving greater autonomy to the regions in matters of health, education and the environment.	<u>Source:</u> MASIS Report, Italy, p. 22.	Italy
Referendums, Germany	Since 2005, referendums can be initiated by citizens (Bürgerentscheid and Bürgerbegehren are two different forms of referendums initiated by citizens) or local parliaments (Ratsbegehren) in all German states. These referendums are meant to either directly involve citizens into local decisions or to put issues relevant to citizens on the political agenda. As a means of addressing current and local issues (e.g. technology assessment, city and traffic planning), referendums facilitate local parliaments and citizens alike to influence priority setting. Currently, referendums are taking place in 13,153 cities and municipalities. From 1956 to 2010, 5,395 Bürgerbegehren were initiated in 3,051 cities and municipalities and 2,538 Bürgerentscheide were conducted in 1,731 cities and municipalities. A Referendum refers a proposed or existing law to voters for their approval or rejection. The process can be advisory or mandatory – in some countries a popular vote is required before certain laws or constitutional changes can be made. In a few countries – e.g. Switzerland and some US states – referendums are a regular part of government. However, in most places they are occasional, ad-hoc occurrences.	<u>Source:</u> MASIS Report Germany, p. 24. Smith, Graham (2005): <i>Beyond the ballot. 57 Democratic Innovations from Around the World.</i> The POWER Inquiry, p. 80.	Germany



<p>Referendum on repaying the Dutch and UK governments the debts resulting from the banking crisis, Iceland, 2010</p>	<p>One of these mechanisms is the so-called „referendum“ right where the voice of the public is asked about important issues that may affect them. A recent example has been the use of a referendum for the decision on repaying the Dutch and UK governments the debts resulting from the banking crisis. A well know advantage of this mechanism is its flexibility and its inclusive character. On the other side it has disadvantages as well, like its costliness and the relative „voluntary“ nature of the outcome and follow-up by the government (the outcome is not binding). The possibility of a referendum of any kind is seldom used. The citizens do not call for such an opportunity even though the constitution allows for it. An exception is the recent bill on the repayment of British and Dutch authorities as a result of the ICESAVE collapse. Referenda are rather costly and not always effective. Typical for Iceland is that it offers possibilities to citizens to meet and talk to decision-makers.</p>	<p><u>Source:</u> MASIS Report Iceland p.20, 22</p> <p><u>Additional information:</u> http://en.wikipedia.org/wiki/Icelandic_I oan_guarantees_referendum,_2010#Results</p>	<p>Iceland</p>
<p>Referendum on (green) biotechnologies Austria, 1997</p>	<p>In a referendum in 1997, 21% of the Austrian electorate expressed a critical stance on (green) biotechnologies. By way of a referendum the public can necessitate the parliament to consider a draft legislation; to be presented to parliament, 100.000 signatures are needed. The National Council then needs to discuss the suggested topic but the recommendation is not binding. In the case of green biotechnology, however, the referendum (which was the second most successful in Austria ever) was highly influential.</p>	<p><u>Source:</u> MASIS Report Austria, p. 17-18.</p>	<p>Austria</p>



Mechanism	Description	References	Country
Participatory Appraisal			
Participatory appraisal (PA), Easterhouse, Glasgow, 2001	<p>Participatory Appraisal (PA) aims to empower poor people to generate an understanding of the nature and causes of their deprivation, identify their needs and agree priorities for intervention. PA typically takes place at the local level and it is this local approach that has been particularly attractive to regeneration partnerships in the UK – for example, the work carried out in Easterhouse, Glasgow.</p> <p>The first experience of PA in Greater Easterhouse was "Talkback on Health". It has been used as a reference in the development of the local Health and Wellbeing Strategy. This positive experience needed to be built upon and in 2001 the Greater Easterhouse Community Health Project identified that there was a very large gap in the provision of health services for young people of Greater Easterhouse. There were some alarming statistics:</p> <ul style="list-style-type: none"> • In 1998, almost one in five women became parents before the age of 20. This was an increase on the previous two years. • The number of terminations was also increasing and the average age for a termination decreasing. • The number of single parents was steadily increasing, with young women having babies at an increasingly young age. <p>There are clear links between unplanned pregnancies and social deprivation. Previous PA work had highlighted sexual health as an important issue for the local area. The Health Project worked with the Local Health Care Co-op (LHCC) to compile a funding application to the Scottish Executive's Community Safety Budget for resources to develop a locally based young person's health service. This bid was successful. A project co-ordinator was appointed and a multi-disciplinary team of LHCC Staff, local youth workers, health project staff and community representatives was established to undertake PA training. As a result of the training, a vast amount of information emerged on the expressed health needs of the young people of Greater Easterhouse. The young people involved were keen to assist in ensuring the development of a local service which met their needs. They were excited at the prospect of having their own health services, shaped by them and delivering what they felt they needed. The young people were asked to present the findings of the PA process to the SIP Board. "They were very nervous" said Gaille McCann, the project manager. "But they were fantastic. The SIP Board all still remember the passion with which they spoke. No-one could challenge what they said because it was based on their own experience. It gave them a lot of confidence to be able to do this." She continued: "I was amazed at the level of information that PA generates. This piece of work proved to me the validity of using PA as a method of recording community views. It has become accepted practice in Easterhouse which is the measure of its success."</p>	<p><u>Source:</u> Smith, Graham (2005): <i>Beyond the ballot. 57 Democratic Innovations from Around the World.</i> The POWER Inquiry, p. 66.</p> <p>Caldwell, Christine (2003): Have you been PA'd? Using participatory appraisal to shape local services. East End Health Action, Greater Easterhouse Community Health Project, Greater Glasgow NHS Board, Oxfam GB, p.12.</p> <p><u>Additional information:</u> See sources</p>	United Kingdom



Mechanism	Description	References	Country
Participatory budgeting			
Participatory budgeting in Great Yarmouth Borough Council 2009-2010	<p>Great Yarmouth Borough Council has undertaken a number of pilot Participatory Budgeting (PB) exercises under the banner of “Your Borough, Your Say” during 2009 and 2010 using a combination of Community Cohesion funding and money allocated from Norfolk County Strategic Partnership’s own PB initiative “Your Norfolk, Your Decision”. The pilots have built on the learning from their neighbourhood management programme where forms of PB have been trialled since 2006 and have sought to explore different ways in which local people can decide on how resources are being allocated in their respective communities. The aim of the pilots has been; to show how different communities with different needs respond to and engage with the same process; to encourage different communities to feel part of their area and work together; to encourage local people to engage in local decisions; to encourage residents to actively participate in their community; improve resident satisfaction in their area. The pilot locations have been; Southtown, Cobholm and Halfway House Neighbourhood Board, Magdalen, Shrublands and Elmhurst Court Neighbourhood Board, South and Central Yarmouth Neighbourhood Board (Community), Martham Parish Council, Belton Parish Council, Great Yarmouth Older People’s Network.</p> <p>Each area was selected based on levels of deprivation within our urban wards, linking with the roll-out of neighbourhood management. It was also important to explore the rural dynamic of running such a scheme and therefore two Parish Councils were selected both based on the levels of deprivation but both presented different contexts and experiences in which to operate the pilots. Martham which had recently received Quality Status and Belton which hoped to achieve that status next year. With a significant proportion of the borough population over the age of 50 the Great Yarmouth Older People’s Network was selected as a community of interest, rather than a community of place to trial this approach. The network had undertaken considerable work to ensure it was equipped to deliver on the Sustainable Communities Strategy and this presented a good opportunity to test-bed this case. A toolkit was adapted using both local and regional models and provided as a resource to the host groups running each of the six schemes. Support was provided from the Borough Council in developing each scheme and additional community development support was offered to host groups from the local community and voluntary sector. There was early recognition that each community setting is different and one size does not fit all so the approach was particularly flexible to recognise these differences. This has resulted in each exercise being run slightly differently and with a great variety in approaches but this has enabled a wider evaluation of methods and approaches. For example, a decision-making event for the Older People’s Network might be more difficult given there is not a natural meeting point for all older people in the borough and depending on such an event may exclude a number of people from taking part. It is hoped that, in addition to the extremely wide coverage by newsletter over 2000 people have directly engaged at face to face consultation events and during the decision making events.</p>	<p><u>Source:</u> http://participedia.net/en/cases/your-borough-your-say-great-yarmouth,</p> <p><u>Additional information:</u> http://www.participatorybudgeting.org.uk/case-studies/case-studies/your-borough-your-say-in-great-yarmouth</p>	United Kingdom



<p>Participatory budgeting in Porto Alegre, Brazil</p>	<p>Participatory Budgeting (PB) first emerged in the city of Porto Alegre, Brazil in 1989. As it established itself as an effective mechanism for engaging citizens, it spread to about 180 other Brazilian municipalities, one Brazilian state and to a number of other cities across Latin America. Taking the Porto Alegre model as our primary guide, there are three distinct levels of citizen engagement in the annual PB cycle: popular assemblies at regional and neighbourhood level; regional budget forums; and the municipal budget council. Selection mechanism: PB involves a combination of approaches to engaging citizens. The popular regional and neighbourhood assemblies are open and involve impressive numbers of citizens. In 1995, for example, 7,000 people participated in the first set of large regional assemblies while 14,000 participated in the intermediary neighbourhood meetings. In the late 1990s, as many as 8.4% of the adult population in Porto Alegre stated that they had participated in budget assemblies at some point in the last 5 years. There is a strong incentive to participate in these assemblies since investment priorities and delegates and councillors are chosen by direct voting and the number of delegates in each region is decided in relation to the turnout at regional assemblies. If more citizens are mobilised, investment is more likely to follow. The more detailed, complex deliberations with public authorities occur in the two elected assemblies. Councillors are limited to two-year terms and subject to immediate recall. Many of the delegates and councillors are well-known community leaders – however, regular electoral competition ensures that they must continue to mobilise people and work hard during the year to win representative positions. Their leadership status is not guaranteed.</p> <p>PB has been particularly effective at engaging the more marginalised segments of the population – in particular women and people on lower incomes. In 2002, the lowest 20th percentile of the population accounted for 30% of the participants in the popular regional assemblies. This figure drops off to around 20% for forum delegates and 15% for councillors. The regional and neighbourhood assemblies are crucial for engaging those citizens who are less able to find time for participation. There remain problems with engaging the very poor, often transient element of the population. The success of PB rests in part on the incentives it generates. Investment priorities and effective community representation are more likely where citizens are mobilised and engage in the process. There is a significant and visible relationship between participation and outcome. This is not to say that PB only works because it appeals to individuals' self-interest. The level of support in a neighbourhood/region is only one criterion on which decisions are made – needs-based criteria are also used in the decision-making process in the Regional Forums and the Budget Council. PB is based on an interesting mix of self-interest and social justice. As an innovation PB appears to have successfully delivered a number of significant outcomes, including: transparency in decision-making and trust in the process; high levels of participation including the engagement of politically-marginalised groups, emergence of new associations; transfer of resources to poorer areas of the city. There is growing interest in PB in the UK. In partnership with Oxfam's UK Poverty Programme, the community-based organization Community Pride in Salford has worked with activists from Porto Alegre to learn about the PB process and how it might be transferred to the UK.</p>	<p><u>Source:</u> Smith, Graham (2005): <i>Beyond the ballot. 57 Democratic Innovations from Around the World.</i> The POWER Inquiry, pp. 63-66.</p> <p><u>Additional information:</u> See source</p>	<p>Brazil</p>
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Mechanism	Description	References	Country
Plebiscite	A plebiscite is a vote by which the people of an entire country or district express an opinion for or against a proposal especially on a choice of government or ruler. Today, a "referendum" can also often be referred to as a "plebiscite", but in some countries they refer to different types of votes, differing in their legal consequences. In the United States, the terms are synonymous, but "plebiscite" is considered archaic.	<u>Source:</u> http://www.merriam-webster.com/dictionary/plebiscite http://en.wikipedia.org/wiki/Referendum	
1978 plebiscite, Austria	Despite the lack of formalised procedures, the Austrian public has used formal standard procedures of direct democracy to influence political decisions. In a 1978 plebiscite, for example, citizens voted against the peaceful use of nuclear energy in Austria and against the opening of an already constructed power plant in Zwentendorf. The outcome of a plebiscite is politically binding and so the power plant was never put into operation	<u>Source:</u> MASIS Report, Austria, p. 17.	Austria

Mechanism	Description	References	Country
Youth Councils			
Youth Council, Espoo, Finland	<p>The Espoo Youth Council was established in 1997. It differs from the Lambeth Youth Council in that members are elected – at present the Council has 30 elected members aged between 13 and 20. Youth Councillors serve a two-year term. Although the Youth Council is independent, it has significant access to different parts of the city's administration – youth representatives sit on the City Council committees and its resolutions are taken to the City Board. Beyond standing for election and voting for candidates, the youth of Espoo are able to discuss and develop proposals on an 'Ideas Factory' on the internet. These ideas can form the basis of resolutions that are taken to the city administration. The Finnish government has begun establishing youth councils throughout the country – by 2002, there were around 80 in existence.</p> <p>The Youth Council was established independently of the city administration in 1997. 30 representatives are elected (with an equal gender balance) – candidates must be between 13 and 19 years old and serve two-year terms. Proposals can be generated and discussed by young people in the city on the online 'Ideas Factory.' Feasible suggestions are presented to the three-weekly general assemblies of the youth council. The Youth Council has significant access to the decision-making process in the city – members sit on the various city committees responsible for running local services and are able to take their proposals to the City Board. Approximately 25% of the proposals generated by the Ideas Factory have been enacted by the city administration.</p>	<p><u>Source:</u> Smith, Graham (2005): <i>Beyond the ballot. 57 Democratic Innovations from Around the World.</i> The POWER Inquiry, p.59-60, 69.</p> <p><u>Additional information:</u> See source</p> <p>IPPR, <i>Lonely Citizens: Report of the Working Party on Active Citizenship</i> p. 35 – Available at: http://www.centreforcities.org/assets/files/pdfs/lonely_citizens_full.pdf.</p>	Finland



<p>Youth Council, Lambeth, UK</p>	<p>The lack of engagement with the political process on the part of young people in the UK is often noted amongst policy makers. Thus any innovation that increases the involvement of young people is likely to be of interest. This case study focuses on two youth councils in Lambeth and in Espoo, Finland (jf. inventory). The contrast between the two initiatives raises interesting issues for the design of youth councils. Lambeth Borough Council established the Youth Council in February 2002 in an attempt to make services and policy more responsive to young people and foster future community leaders. The Youth Council meets once a week in Brixton Town Hall and is open to anyone between the ages of 11 and 24. Around 100 young people have signed up and around 30 attend regularly. The majority are from BME groups. The Council Council is chaired by a youth development worker from the Borough. The Council has worked on a number of issues such as stop and search, teenage pregnancy and HIV-aids. Members have gone into local schools and helped train new police recruits. In comparison the Lambeth Youth Council was specifically set up to engage what is viewed as a 'hard to reach' group. There is no comparable civic tradition amongst young people. The 'open door' policy means that one barrier (election) is removed if young people show an interest in engaging. The relationship between Lambeth Youth Council and public bodies is still developing, although where the Council has taken a particular interest – e.g. stop and search and teenage pregnancy – their impact has been fairly impressive. The Council often takes part on consultations on youth issues and is developing its links with the local strategic partnership and the Borough Council.</p>	<p><u>Source:</u> Smith, Graham (2005): <i>Beyond the ballot. 57 Democratic Innovations from Around the World.</i> The POWER Inquiry, p. 69.</p>	<p>United Kingdom</p>
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6 Appendix A – Systematic literature review

6.1 Compilation of literature review: Search strategy and grouping of texts

The literature review presented below is compiled due to the objective of reviewing the literature within the subject area of public engagement at large while also more specifically reviewing examples of PE mechanisms and initiatives which has supplemented the building of the inventory. The latter constitutes the primary aim of the review. The collection of texts has been compiled based on a defined search strategy in order to systematically review relevant literature. The academic journals ‘Public Understanding of Science’, ‘Science Communication’, ‘Science, Technology, and Human Values’, ‘Science and Public Policy’ has been examined for recent articles concerning ‘public engagement’ since these journals represent important outlets for academic analysis of PE activities. This procedure included recent articles published from 2008 onwards. The collection of relevant literature has also been supplemented by a less systematic ‘snowballing’ strategy where relevant articles, books and commissioned reports have been gathered throughout the research process and through internet searches, expert knowledge etc. These pieces exceed the 2008-2014 timeframe by also including classic texts, for instance. The literature is written in English, this being a common criterion for inclusion due to its status as *lingua franca* within the field.

The collection of literature is categorized according to six thematic sections:

- Group 1: General literature about public engagement
- Group 2: Literature concerning evaluation and impact of public engagement
- Group 3: Public engagement vis-à-vis deliberative innovations
- Group 4: Public engagement and higher education institutions
- Group 5: Public engagement concerning community based research
- Group 6: Public engagement with regard to specific disciplines

Furthermore, references are grouped according to their status as ‘scholarly article’, ‘commissioned report’ or ‘book’ and described on the basis of accompanying abstracts. References marked in orange represent contributions which specifically include PE mechanisms and/or initiatives. The literature review does not constitute an exhaustive list of literature within the field of public engagement but with its 125 references it hopefully captures the most relevant studies within this subject area as well as represents the body of literature addressing specific PE mechanisms and initiatives.



6.1.1 Group 1: General literature about public engagement

Academic articles:

Arnstein, Sherry R. A Ladder of Citizen Participation. *AIP*, Vol. 35, No. 4, July 1969, pp. 216-224. The heated controversy over “citizen participation, “citizen control,” and “maximum feasible involvement of the poor”, has been waged largely in terms of acerbated rhetoric and misleading euphemisms. To encourage a more enlightened dialogue, a typology of citizen participation is offered using examples from three federal social programs: urban renewal, antipoverty, and Model Cities. The typology, which is designed to be provocative, is arranged in a ladder pattern with each rung corresponding to the extent of citizens’ power in determining the plan and/or program.

Besley, John C. (2010): Imagining public engagement. *Public Understanding of Science* 21(5) 590–605. Two separate studies look at how student samples conceptualize public engagement. The first study involves the quantitative analysis of an open-ended survey question and finds that participants have a range of ideas about what public decision-makers might do to consult the public but that most of these mechanisms involve very little opportunity for actual consultation. The second introduces a “draw a meeting test” and finds substantial homogeneity in how participants envisage this specific mechanism of public engagement. As with study 1, however, participants see little opportunity for citizens to have substantive opportunity for meaningful engagement with decision-makers. Overall, the research highlights the potential utility of broader research focused on how citizens envisage public meetings that includes testing the impact of public engagement perceptions on willingness to engage.

Bucchi, Massimiano (2013): Style in science communication. *Public Understanding of Science* 22(8) 904–915. There is little doubt that during the past few decades science communication efforts aimed at non-expert audiences have increased in quantity and intensity on a global scale. Public engagement and outreach activities have now become a routine – when not a prominent – feature for several research institutions in Europe. However, it would be difficult for both scholars and those involved in science communication to agree on the impact of these activities, on the long-term implications of the ‘science communication movement’ and on the indicators we should develop and employ in order to assess impact. The paper argues that quality is a relevant issue and challenge for contemporary science communication. Style is relevant to addressing that challenge, insofar as it relates to discussions about how to strengthen the quality of science communication, suggesting a different perspective other than the traditional normative/prescriptive framework. The notion of style also fruitfully connects the debate on science communication with a rich tradition of studies in the history and sociology of science.

Bickerstaff, Karen et al. (2011): Locating Scientific Citizenship: The Institutional Contexts and Cultures of Public Engagement. *Science, Technology, & Human Values* 35(4) 474-500. In this article, we explore the institutional negotiation of public engagement in matters of science and technology. We take the example of the Science in Society dialogue program initiated by the UK’s Royal Society, but set this case within the wider experience of the public engagement activities of a range of charities, corporations, governmental departments, and scientific institutions. The novelty of the analysis lies in the linking of an account of the dialogue event and its outcomes to the values, practices, and imperatives— the institutional rationality—of the commissioning organization. We argue that the often tacit institutional construction of scientific citizenship is a critical, and relatively undeveloped, element of analysis—one that offers considerable insight into the practice and democratic implications of engaging publics in science and science policy. We also present evidence indicating that over time the expanding “capacities” associated with dialogue can act in subtle ways to enroll other elements of institutional architectures into more reflexive modes of thinking and acting. In the concluding section of the article, we consider the ways in which research and practice could (and we believe should) engage more squarely with facets of institutional context and culture.



Demeritt, D., Dyer, S., Millington, J.D.A., (2009) *PEST or Panacea? Science, Democracy, and the Promise of Public Participation*, EPD Working Paper Series, King's College London. This paper explores what is entailed by the emerging UK consensus on the need for increased public engagement in science and technology, or PEST as we call it. Common to otherwise incompatible instrumental and de-ontological arguments for PEST is an associated claim that increased public engagement will also somehow make for 'better' science and science-based policy. We distinguish two different ways in which PEST might make such a substantive contribution, which we term 'normative steering' and 'epistemic checking'. Achieving those different aims involves engaging with different publics in different ways to different ends. Accordingly, we review a number of recent experiments in PEST to assess the practical challenges in delivering on its various substantive promises. The paper concludes with some wider reflections on whether public engagement *in science* is actually the best way of resolving the democratic dilemmas to which PEST is addressed.

Durant, Darrin (2010): *Public Participation in the Making of Science Policy. Perspectives on Science 2010*, vol. 18, no. 2. This paper argues that, because Science and Technology Studies (STS) lost contact with political philosophy, its defense of public participation in policymaking involving technical claims is normatively unsatisfactory. Current penchants for political under-laboring and normative individualism are critiqued, and the connections between STS and theorists of deliberative democracy are explored. A conservative normativity is proposed, and STS positions on public participation are discussed in relation to current questions about individual and group rights in a liberal democracy. The result is avenues to normatively defend public participation, by analogy with identity politics and Habermas, while also theorizing its limits.

Est, Rinie van (2008): *The Broad Challenge of Public Engagement in Science Commentary on: "Constitutional Moments in Governing Science and Technology"*. *Sci Eng Ethics*, 17:639–648. Timely public engagement in science presents a broad challenge. It includes more than research into the ethical, legal and social dimensions of science and state-initiated citizen's participation. Introducing a public perspective on science while safeguarding its public value involves a diverse set of actors: natural scientists and engineers, technology assessment institutes, policy makers, social scientists, citizens, interest organisations, artists, and last, but not least, politicians.

Felt, Ulrike and Maximilian Fochler (2008): *The bottom-up meanings of the concept of public participation in science and technology. Science and Public Policy*, 35(7): 489–499. If the rhetoric pervading much of recent academic and policy discourse is to be taken at face value, engaging the public in the governance of science has become a kind of gold standard. However, very little is known about citizens' perspectives on public engagement in the governance of science, let alone about the social processes and the meaning participation acquires within actual engagement exercises. This article analyses the bottom-up meanings of the concept of public participation in a public engagement exercise in Austria, and traces the variety of connotations and implications that this term was given by the participating citizens and scientists.

Felt, Ulrike and Maximilian Fochler (2010): *Machineries for Making Publics: Inscribing and De-scribing Publics in Public Engagement. Minerva*. 48:219–238. This paper investigates the dynamic and performative construction of publics in public engagement exercises. In this investigation, we, on the one hand, analyse how public engagement settings as political machineries frame particular kinds of roles and identities for the participating publics in relation to 'the public at large'. On the other hand, we study how the participating citizens appropriate, resist and transform these roles and identities, and how they construct themselves and the participating group in relation to wider publics. The empirical basis of our argument is a discussion of four different kinds of participation events in Austria. Building on these observations we develop conclusions about the public up-take of public participation in technoscience and the role of public engagement in current technopolitical cultures.



Gehrke, Pat J. (2014): Ecological validity and the study of publics: The case for organic public engagement methods. *Public Understanding of Science*, Vol. 23(1) 77– 91. This essay argues for a method of public engagement grounded in the criteria of ecological validity. Motivated by what Hammersly called the responsibility that comes with intellectual authority: “to seek, as far as possible, to ensure the validity of their conclusions and to participate in rational debate about those conclusions” (1993: 29), organic public engagement follows the empirical turn in citizenship theory and in rhetorical studies of actually existing publics. Rather than shaping citizens into either the compliant subjects of the cynical view or the deliberately disciplined subjects of the idealist view, organic public engagement instead takes Asen’s advice that “we should ask: how do people enact citizenship?” (2004: 191). In short, organic engagement methods engage publics in the places where they already exist and through those discourses and social practices by which they enact their status as publics. Such engagements can generate practical middle-range theories that facilitate future actions and decisions that are attentive to the local ecologies of diverse publics.

Irwin, Alan (2014): From deficit to democracy (re-visited). *Public Understanding of Science*, Vol. 23(1) 71–76. Taking as its frame the last twenty years of policy-making and academic discussion regarding public engagement with science (PES), this short article offers a personal evaluation of the balance between failure and achievement, and reflects upon some of the other contributions to the special issue. Put in the most general terms, have we been moving forwards or in circles? The persistence of public engagement efforts and existence of constructive science–social science collaborations are noted. However, the ambiguous character of the institutional embrace of social science and the instrumental role accorded to PES research remain as significant issues. Following a retrospective discussion of the ‘deficit’ model of science–public relations, some conclusions are drawn concerning the future needs of both reflective practice and practical reflection.

Irwin, Alan, Torben Elgaard Jensen and Kevin E Jones (2013): The good, the bad and the perfect: Criticizing engagement practice. *Social Studies of Science*. 43(1) 118–135. Criticism seems to be a recurring and significant characteristic of public engagement exercises – as reflected both in general political discussion and in the academic literature on public engagement with science. This article suggests that rather than being a distraction from the main business of ‘technical democracy’, criticism lies at the heart of public engagement and in that way should be seen not simply as an unwelcome and unanticipated by-product but rather as a key *constituent*. Taking inspiration from previous science and technology studies’ treatments of ‘bottom line’ moves and also from Boltanski and Thévenot’s sociology of critical capacity, this article adopts an approach to radical critique that explores its ‘dynamic-yet-patterned’ character. Building upon a ‘translation’ model, but also a framework taken from the martial arts, a reconstruction is offered of one empirical study of lay membership on scientific advisory committees. Conclusions are drawn concerning not only the analysis of critical dialogue around engagement but also the implications for democratic practice.

Jia, Hepeng and Li Liu (2014): Unbalanced progress: The hard road from science popularisation to public engagement with science in China. *Public Understanding of Science*, 23: 32. This article critically traces the development of science communication in China in the past 30 years. While confirming the tremendous progress Chinese science communicators have achieved in popularising science, it argues that the deficit model-based popularisation effort cannot meet the diversifying demands on science in Chinese society. Citing both recent science and technology controversies and active public participation in science pilot initiatives in China, this article concludes that science communication efforts in the country must be focused on constructive dialogues and public engagement with science.

Mejlgaard, Niels (2009): The trajectory of scientific citizenship in Denmark: changing balances between public competence and public participation. *Science and Public Policy*, 36(6), pages 483–496. The understanding of



relations between science and the public is divided between two competing paradigms: one that focuses on citizen competence and one-way dissemination of knowledge, and another that emphasizes public participation and dialogue. This article proposes an integrative framework that regards competence and participation as important dimensions of 'scientific citizenship', and focuses on the changing balance between these dimensions. Recounting developments in Denmark, it is argued that the trajectory of scientific citizenship in Denmark runs counter to the broader European trend. In the 2000s, Danish policies and social practices concerned with the interplay between science and the public have been highly focused on one-way dissemination, and the traditional 'Danish model' of institutionalized, deliberative public participation in science and technology decision-making, which developed in the course of the 1980s and received international renown, has lost much of its influence.

Mohr, Alison (2011): Publics in the Making: Mediating Different Methods of Engagement and the Publics These Construct Commentary on: "Technologies of Democracy: Experiments and Demonstrations". *Sci Eng Ethics*, 17:667–672. The potential for public engagement to democratise science has come under increasing scrutiny amid concerns that conflicting motivations have led to confusion about what engagement means to those who mediate science and publics. This raises important yet relatively unexplored questions regarding how publics are constituted by different forms of engagement used by intermediary scholars and other actors. It is possible to identify at least two possible 'rationalities of mediation' that mobilise different versions of the public and the roles they are assumed to play, as 'citizens' or 'users', in discussions around technology. However, combinations of rationalities are found in practice and these have significant implications for the 'new' scientific democracy.

Nowotny, Helga (2014): Engaging with the political imaginaries of science: Near misses and future targets. *Public Understanding of Science*, 23:16. The current economic and financial crisis is also a political crisis that requires a rethinking of public engagement with science. In the past, the dominant focus of science, technology and society (STS) has led to a blind spot: political understanding and engagement of policy-makers and politicians with science, which is an integral part of any public engagement. Arguably, it is bound to and emerges from what Ezrahi calls collective political imaginaries. These are necessary fictions, which are causative and performative. In crude form, they manifest themselves in short-term impact measurements of every unit of scientific activity with citizens as the fictitious ultimate beneficiaries. In the future, STS can gain from coming up with a workable definition of the public interest with a focus on the public value of science. It can investigate collective imaginaries as they emerge from interactions with new media. As necessary fictions they may hold answers we never imagined them to hold.

Parry, Sarah et al. (2012): Heterogeneous Agendas around Public Engagement in Stem Cell Research: The Case for Maintaining Plasticity. *Science & Technology Studies*, Vol. 25, No. 2, 61-80. Although public engagement is now part of the business of doing science, there is considerable divergence about what the term means and what public engagement *ought* to be doing. This paper reflects on these heterogeneous meanings and agendas through an analysis of focus group data from research on public engagement in stem cell research. Three broad visions of public engagement are identified: as education and information provision; as dialogue; and as participation in policy making. In analysing the implications of these visions three dimensions are highlighted: weakly and strongly structured visions of public engagement; the co-production of roles and relationships; and the framing of what is at stake. Each of these has the potential to include or exclude some groups in public engagement. We conclude that social scientists should seek to maintain the plasticity of public engagement as a necessary condition for greater participation and reflexivity in science policy, practice and governance.

Pieczka, Magda and Oliver Escobar (2013): Dialogue and science: Innovation in policy-making and the discourse of public engagement in the UK. *Science and Public Policy* 40, pp. 113-126. This paper examines the way in which



innovation in science policy in the UK over the last 25 years has been built around a discourse of changing preferences for modes of communication with citizens. The discussion, framed in debates and developments that deal with deliberative democracy and public engagement, draws on discourse analysis of key policy documents, statements made by members of the science policy network, and on interviews with public engagement practitioners. The relationship between science and society emerges as a 25-year old project of crisis management organised into three distinct models: public understanding of science, public engagement, and public dialogue. The analysis questions the existing narrative of progress and evolution constructed around key switch points, highlights the overwhelming influence of public understanding of science approaches, and attends to the question of the viability of public dialogue as the mainstream activity in science communication and policy-making.

Stilgoe, Jack et al. (2014): Why should we promote public engagement with science? *Public Understanding of Science* 2014 23:4. This introductory essay looks back on the two decades since the journal *Public Understanding of Science* was launched. Drawing on the invited commentaries in this special issue, we can see narratives of continuity and change around the practice and politics of public engagement with science. Public engagement would seem to be a necessary but insufficient part of opening up science and its governance. Those of us who have been involved in advocating, conducting and evaluating public engagement practice could be accused of overpromising. If we, as social scientists, are going to continue a normative commitment to the idea of public engagement, we should therefore develop new lines of argument and analysis. Our support for the idea of public engagement needs qualifying, as part of a broader, more ambitious interest in the idea of publicly engaged science.

Stirling, Andy (2008): “Opening Up” and “Closing Down”. Power, Participation, and Pluralism in the Social Appraisal of Technology. *Science, Technology, & Human Values*. Volume 33 Number 2, 262-294. Discursive deference in the governance of science and technology is rebalancing from expert analysis toward participatory deliberation. Linear, scientific conceptions of innovation are giving ground to more plural, socially situated understandings. Yet, growing recognition of social agency in technology choice is countered by persistently deterministic notions of technological progress. This article addresses this increasingly stark disjuncture. Distinguishing between “appraisal” and “commitment” in technology choice, it highlights contrasting implications of normative, instrumental, and substantive imperatives in appraisal. Focusing on the role of power, it identifies key commonalities transcending the analysis/participation dichotomy. Each is equally susceptible to instrumental framing for variously weak and strong forms of justification. To address the disjuncture, it is concluded that greater appreciation is required—in both analytic and participatory appraisal—to facilitating the opening up (rather than the closing down) of governance commitments on science and technology

Sturgis, Patrick (2014): On the limits of public engagement for the governance of emerging technologies. *Public Understanding of Science*, 23: 38. There is much that is to be welcomed in the turn away from naïve deficit model thinking toward more dialogical approaches to the interface between science and the public. However, as the participatory movement attempts the awkward transition from high theory to complex and messy practice, a number of dilemmas are encountered which problematise the notion of public engagement as a potential solution to the ‘wicked’ problems of science governance. In the limited space available here, I wish to connect two such issues: whether public engagement activities, as enacted, live up to the theoretical tenets of deliberative and participatory democracy upon which they are founded; and whether citizens actually favour direct participatory approaches as the mode of science governance.

PytlikZillig, Lisa M. and Alan J. Tomkins (2011): Public Engagement for Informing Science and Technology Policy: What Do We Know, What Do We Need to Know, and How Will We Get There? *Review of Policy Research*, Volume



28, Number 2. This article examines social science relevant to public engagements and identifies the challenges to the goal of meaningful public input into science and technology policy. Specifically, when considering “which forms, features, and conditions of public engagement are optimal for what purposes, and why?” we find social science has not clarified matters. We offer a model to guide systematic research that defines and empirically connects variations in features and types of public engagement activities to specifically defined variations in effective processes and outcomes. The specification of models, as we have done, will guide policy makers, practitioners, and the public in determining what kinds of engagement techniques are optimal for what kinds of purposes. Our model is presented to start conversations and inspire research that in the future should help to ensure meaningful public participation that meets the promise of contributing thoughtful societal values and perspectives into governmental policies impacting science and technology research.

Reports:

Smith, Graham (2005): *Beyond the ballot. 57 Democratic Innovations from Around the World. The POWER Inquiry.* The aim of the study is to provide The Power Inquiry with details and assessments of democratic innovations that might increase and deepen citizen participation in the political decision-making process. The study analyses fifty-seven different innovations – eleven of these are considered in more depth in case studies.

Siune, K. et al. (2009) *Challenging Futures of Science in Society, Emerging Trends and Cutting-edge Issues. Brussels: European Commission.* The MASIS expert group was asked to examine the role of science in society, basing this on analyses of different trends and challenges, and also taking into account specific areas as visible in the action lines of 'Science in Society' of the Seventh Framework Programme (FP7). What are cutting-edge issues and what are challenging futures? Europe is undergoing changes, and not only in size and composition. This has also brought new challenges for science in society, not least because it has been given a significant role in the development of EU in the Lisbon Strategy of 2000 and the Vision 2020 of the European Research Area (Council of the EU 2009). Citizens have an increasing stake in the European Research Area and in science in Europe in general. This Report examines challenges and cross-cutting issues from a European perspective.

Stirling, Andy (2005): FROM SCIENCE AND SOCIETY TO SCIENCE IN SOCIETY: TOWARDS A FRAMEWORK FOR 'CO-OPERATIVE RESEARCH'. Report of a European Commission Workshop Governance and Scientific Advice Unit of DG RTD, Directorate C2 Directorate General Research and Technology Development, Brussels 24th – 25th November 2005. This report arises from intensive discussions at an innovative two-day '*GoverScience*' Seminar organised by the Governance and Scientific Advice Unit of DG RTD in November 2005. The Seminar focused on a variety of complex and hotly contested questions that are central to current efforts to move Europe towards a 'knowledge based society'. *What is the appropriate role for science in the governance of modern society? How should research itself be governed? What is the function of public engagement?* Attention focused on a variety of detailed topical areas: including the communication of risk, the provision of science advice, relations between government, industry and civil society and the best ways to balance involvement by experts, stakeholders and citizens.

Wilsdon, James and Rebecca Willis (2004): *See-through Science Why public engagement needs to move upstream. London: Demos.* In *See-through Science*, James Wilsdon and Rebecca Willis argue that we are on the cusp of a new phase in debates over science and society. Public engagement is about to move upstream. Scientists need to find ways of listening to and valuing more diverse forms of public knowledge and social intelligence. Only by opening up innovation processes at an early stage can we ensure that science contributes to the common good.



Books:

Jananoff, Sheila (2005): *Designs on nature: science and democracy in Europe and the United States*. Princeton, N.J. : Princeton University Press. Biology and politics have converged today across much of the industrialized world. Debates about genetically modified organisms, cloning, stem cells, animal patenting, and new reproductive technologies crowd media headlines and policy agendas. Less noticed, but no less important, are the rifts that have appeared among leading Western nations about the right way to govern innovation in genetics and biotechnology. These significant differences in law and policy, and in ethical analysis, may in a globalizing world act as obstacles to free trade, scientific inquiry, and shared understandings of human dignity. In this magisterial look at some twenty-five years of scientific and social development, Sheila Jananoff compares the politics and policy of the life sciences in Britain, Germany, the United States, and in the European Union as a whole. She shows how public and private actors in each setting evaluated new manifestations of biotechnology and tried to reassure themselves about their safety.

Nowotny, H., Scott, P., Gibbons, M., (2001) *Re-Thinking Science - Knowledge and the Public in an Age of Uncertainty*, Cambridge, Polity Press. Re-Thinking Science presents an account of the dynamic relationship between society and science. Despite the mounting evidence of a much closer, interactive relationship between society and science, current debate still seems to turn on the need to maintain a 'line' to demarcate them. The view persists that there is a one-way communication flow from science to society - with scant attention given to the ways in which society communicates with science. The authors argue that changes in society now make such communications both more likely and more numerous, and that this is transforming science not only in its research practices and the institutions that support it but also deep in its epistemological core. To explain these changes, Nowotny, Scott and Gibbons have developed an open, dynamic framework for re-thinking science.

6.1.2 Group 2: Literature concerning evaluation and impact of public engagement

Academic articles:

Besley, John C. (2010): *Public Engagement and the Impact of Fairness Perceptions on Decision Favorability and Acceptance*. *Science Communication* 32(2) 256–280. Drawing on the social-psychological theory about justice, the current study uses survey data collected during a public engagement process related to nuclear energy to test the relative impact of perceptions about the fairness of outcomes, decision procedures, and interpersonal treatment in predicting both perceived favorability of a decision and willingness to accept a decision. Media use, interpersonal discussion, competence, and risk perceptions (worry) are used as control variables alongside standard demographics in hierarchical ordinary least squares regression models. The study finds that believing one receives a fair outcome is associated with decision favorability, while all forms of fairness perceptions are associated with acceptance. The implication is that perceptions about both outcome and non-outcome forms of fairness are important to consider when assessing public engagement.

Biegelbauer, Peter and Janus Hansen (2011): *Democratic theory and citizen participation: democracy models in the evaluation of public participation in science and technology*. *Science and Public Policy*, 38(8): 589–597. We argue that some of the controversies over the democratic merits of (participatory) technology assessment can be traced to conflicting assumptions about what constitutes a legitimate democratic procedure. We compare how two influential normative models of democracy – 'representative' and 'direct' – value public engagement processes according to different criteria. Criteria drawn from this analysis are used to compare a series of case studies on xenotransplantation policy-making. We show that the democratic merits of participatory technology assessments probably owe as much to the institutional context as to the precise evaluative criteria or procedural designs. This calls for a closer interaction between science and technology studies research on public engagement and comparative politics scholarship.



Braun, Kathrin and Susanne Schultz (2009):“... a certain amount of engineering involved”: Constructing the public in participatory governance Arrangements. *Public Understand. Sci.* 1–17. This paper argues that it is time for public understanding of science to develop a critical inventory of the forms, formats and methods of public participation and their respective implications and ambiguities. It highlights the need for analysing not only the limitations and deficiencies of participatory arrangements but also their constructive dimension, in particular the construction of the subject of participation. Looking into participatory governance arrangements in the issue area of genetic testing in Germany and the UK the paper presents a typology of formats according to the way the respective public is constructed and identifies four major constructions of publics: the general public, the pure public, the affected public and the partisan public. Each of these enables certain speaking positions while foreclosing others. The study shows that the main purposes of participatory arrangements in this issue area are knowledge production and education rather than political deliberation and decision-making.

Burgess, Jacquelin and Jason Chilvers (2006): Upping the ante: a conceptual framework for designing and evaluating participatory technology assessments. *Science and Public Policy*, volume 33, number 10, December, pages 713–728. Radical uncertainty, political controversy and public distrust in emerging areas of science and technology is fuelling moves towards new forms of governance centred on ex ante or ‘upstream’ public and stakeholder engagement with policy. Yet how is such deliberation and inclusion to be achieved in contentious national policy processes? We present a contextual framework that seeks to understand this question better and use it to reflect on two high-profile UK examples of ‘new governance’ in genetic modification and radioactive waste management. In doing this, we argue for: better definition of who/what is represented in such processes; mixed methodologies both to integrate analytic–deliberative dimensions and address questions of representative-ness; and more systematic evaluation of the outputs and outcomes of appraisal processes.

Caputo, Richard K. (2010): Family Characteristics, Public Program Participation, & Civic Engagement. *Journal of Sociology & Social Welfare*, Volume XXXVII, Number 2. This study tested for differences on the type and extent of civic engagement between use of visible programs such as Food Stamps and Medicaid and less visible programs such as the Earned Income Tax Credit while accounting for family and sociodemographic characteristics. Policy feedback theory guided the study which used data from the 1979 cohort of the National Longitudinal Surveys. Challenging prior research, means-tested Food Stamps, Medicaid, or EITC program participants were as likely as non-participants to devote time to activities aimed at changing social conditions. What social service agencies can do to enhance civic engagement is discussed.

Chilvers, Jason (2008): Deliberating Competence. Theoretical and Practitioner Perspectives on Effective Participatory Appraisal Practice. *Science, Technology, & Human Values*, Volume 33 Number 2. The “participatory turn” cutting across technical approaches for appraising environment, risk, science, and technology has been accompanied by intense debates over the desired nature, extent, and quality of public engagement in science. Burgeoning work evaluating the effectiveness of such processes and the social study of science in society more generally is notable, however, for lacking systematic understanding of the very actors shaping these new forms science-society interaction. The United Kingdom based in-depth empirical research that made space for participatory appraisal experts to reflect on effective practice and novel questions of competence, expertise, and citizen-specialist relations within analytic-deliberative processes. Emerging practitioner principles warn that existing participatory models have not sufficiently considered constructivist perspectives on knowledge, analysis, and deliberation. Effective participatory appraisal under uncertainty needs to guard against the “technocracy of participation” by opening up to diversity, difference, antagonism, and uncertainties/indeterminacies.



Chilvers, J., Machaghten, P., (2011) *The Future of Science Governance, A review of public concerns, governance and institutional response*, BIS/Sciencewise-ERC 'Science, Trust and Public Engagement' project. In this report we review the findings from public dialogues, systematically evaluating the concerns that are shared across 17 Sciencewise-ERC sponsored public dialogues projects. We then explore in detail how science and policy institutions are responding to governance challenges in the fields of genomics, nanotechnology and climate science.

Derrick, Gemma E. and Vincenzo Pavone (2013): **Democratising research evaluation: Achieving greater public engagement with bibliometrics-informed peer review.** *Science and Public Policy* 40, pp. 563–575. The ability of metrics to represent complex information about research in an accessible format has previously been overlooked in preference to debate about their shortcomings as research evaluation tools. Here, we argue that bibliometrics have the potential to widen scientific participation by allowing non-academic stakeholders to access scientific decision making, thereby increasing the democratisation of science. Government policies from 3 countries (UK, Australia and Spain) are reviewed. Each country outlines a commitment to the democratization of science for one set of policies whilst ignoring this commitment when developing parallel research evaluation policies. We propose a change in dialogue from whether bibliometrics should be used to how they should be used in future evaluations. Future research policies should take advantage of bibliometrics to foster greater democratisation of research to create more socially-reflexive evaluation systems.

Devonshire Ian M., Hathway, Gareth J. (2014) **Overcoming the Barriers to Greater Public Engagement.** *PLoS Biol* 12(1). Our research group has devised a new model of PE for higher education institutions, which we refer to as BrainLab, that aims to help researchers overcome barriers to participating in PE whilst also addressing the call by the American Association for the Advancement of Science to improve undergraduate and postgraduate students' ability to effectively communicate science to diverse audiences.

Ferretti, Maria Paola and Vincenzo Pavone (2009): **What do civil society organisations expect from participation in science? Lessons from Germany and Spain on the issue of GMOs.** *Science and Public Policy*, 36(4), May 2009, pages 287–299. Recent debates in science and technology studies, as well as more practical approaches to science policy both at national and European level, have stressed the relevance of citizen participation in the field of science. This paper investigates what some of the key actors in this debate, civil society organisations, expect from participation. The paper presents two case studies of civil society participation in the field of novel biotechnologies in Germany and in Spain. Despite the differences between the experiences of participation in these two countries, our study shows that current institutional approaches, which are inspired by the 'democratisation of expertise' perspective and set up essentially at the 'downstream' level, seem less promising than 'upstream' models of participation, which, in contrast, appear more meaningful from a 'co-production of science' framing.

French, Simon and Clare Bayley (2011): **Public participation: comparing approaches.** *Journal of Risk Research*. Vol. 14, No. 2, 241–257. Public participation in societal decision-making is becoming more and more common. There have been numerous studies asserting the benefits of involving citizens and stakeholders in decision-making at various levels in government and regulation. However, as several writers have noted, there have been few comparative studies demonstrating the relative advantages and disadvantages of different participation instruments. In this paper, we report a small series of experiments that seek to compare the efficacy of a few methods in a variety of circumstances. We argue that, although such experiments provide indications of the relative merits of participation instruments, a much more substantial and coordinated programme is needed. We suggest two components of this programme: first, the development of a public domain knowledge base in which researchers can share, discuss and document their experiences within a common framework that will allow better comparisons; second, a programme of



action research in which comparative experiments are attached to 'live' participation exercises on contemporary issues.

Kleinman, Daniel Lee, Jason A. Delborne and Ashley A. Anderson (2013): Engaging citizens: The high cost of citizen participation in high technology. *Public Understand. Sci.* 20(2) (2011) 221–240. This paper contributes to ongoing discussions on democratic engagement through an exploration of citizen participation in two citizen consensus conferences on nanotechnology, one held in 2005 and the second in 2008. We analyze the factors that motivate citizens to participate formally in debates about emerging "high technologies" and consider demographic and related characteristics of the participants in these two consensus conferences and the reasons they provided for participating. We suggest that in an era in which the barriers to civic engagement—most especially time—are large for many citizens, significant incentives are likely to affect participation. These incentives may be internal (e.g. a personal interest in a topic or an investment in a policy outcome) or external (e.g. money). In this context, we critique the aim of recruiting "blank slate" participants for consensus conferences and other deliberative democratic forums.

MacLean, Samantha and Michael M. Burgess (2010): In the public interest: assessing expert and stakeholder influence in public deliberation about biobanks. *Public Understand. Sci.* 19(4) (2010) 486–496. Providing technical and experiential information without overwhelming participants' perspectives presents a major challenge to public involvement in policy decisions. This article reports the design and analysis of a case study on incorporating expert and stakeholder knowledge without including them as deliberators, while supporting deliberative participants' ability to introduce and critically assess different perspectives. Analysis of audio-recorded deliberations illustrates how expert and stakeholder knowledge was cited, criticized and incorporated into deliberations. In conclusion, separating experts and stakeholders from deliberations may be an important prima facie principle when the goal is to enhance citizen representation on technical issues and related policy.

Mejlgaard, Niels and Sally Stares (2013): Performed and preferred participation in science and technology across Europe: Exploring an alternative idea of "democratic deficit". *Public Understanding of Science.* 22(6) 660–673. Republican ideals of active scientific citizenship and extensive use of deliberative, democratic decision making have come to dominate the public participation agenda, and academic analyses have focused on the deficit of public involvement vis-à-vis these normative ideals. In this paper we use latent class models to explore what Eurobarometer survey data can tell us about the ways in which people participate in tacit or in policy-active ways with developments in science and technology, but instead of focusing on the distance between observed participation and the dominant, normative ideal of participation, we examine the distance between what people do, and what they themselves think is appropriate in terms of involvement. The typology of citizens emerging from the analyses entails an entirely different diagnosis of democratic deficit, one that stresses imbalance between performed and preferred participation.

Molinari, Francesco (2012): eParticipation that works. Evidence from the old Europe. *JeDEM* 4(2): 245-264, 2012 ISSN 2075-9517. This paper collects some evidence from a now completed EU-funded project, aimed at the localisation and institutionalisation of two eParticipatory tools, DEMOS-Plan and the Electronic Town Meeting, within real public administration processes. The independent or combined usage of the two tools, supported by the Living Labs approach has been tested in 18 local pilots across several regions of Europe, from Ulster (UK) to Sicily and Tuscany (Italy), from Turku Archipelago (Finland) to Voroklini (Cyprus). Selected policy domains include (among others): Spatial Planning, Socio- Economic Programming, Strategic Environmental Assessment, and Open Government. Deployment has led to a number of interesting implications for the European public authorities, such as: i) building up of a cost effective ICT platform that enables regular or occasional consultation of remotely and sparsely located citizens and stakeholders; ii) gradually migrating the whole administrative system related to spatial data infrastructure



towards a full digitalisation of the “legally compulsory” exchanges between planning agencies, local stakeholders and the general public; and iii) setting the stage for these two facilities to become practically interoperable to each other and across different EU Member States.

Powell, Maria C. and Mathilde Colin (2008): Meaningful Citizen Engagement in Science and Technology What Would it Really Take? *Science Communication*, vol.30:1, 126-136. Citizen engagement in scientific and technological issues is in vogue in recent years, and a variety of projects intended to engage citizens in science and technology is occurring worldwide. However, few academics and governments attempting to “engage in engagement” are clear about their goals and desired outcomes, and whether or not the processes they facilitate are likely to meet these ends. What are the goals—explicit and implicit—of institutionally sponsored projects that aim to engage lay citizens in science and technology? Are these exercises likely to meet these goals? and what kinds of processes could nurture more meaningful engagement, what are the barriers to this kind of engagement, and how might these barriers be overcome? Based on the experience of the authors, this article explores these questions and provides 10 recommendations for more meaningful engagement of citizens in science and technology.

Rask, Mikko, Saule Maciukaite-Zviniene and Jurgita Petrauskiene (2012): Innovations in public engagement and participatory performance of the nations. *Science and Public Policy* 39, pp. 710–721. In this paper we analyse innovations in public engagement in 37 countries in the context of science and technology policy, answering the following research questions: What types of public engagement procedures have in recent years been developed and experimented with in these countries? How have these processes been reflected in national policy discourses? How do the different countries perform in their public engagement activities? The main research focus will be on the study of the most innovative processes and practices. Using the results from the research, we construct a model of ‘participatory performance’ and classify the countries on the basis of their performance levels.

Rowe, Gene and Lynn J. Frewer (2000): Public Participation Methods: A Framework for Evaluation. *Science Technology Human Values*. 25:3. There is a growing call for greater public involvement in establishing science and technology policy, in line with democratic ideals. A variety of public participation procedures exist that aim to consult and involve the public, ranging from the public hearing to the consensus conference. Unfortunately, a general lack of empirical consideration of the quality of these methods arises from confusion as to the appropriate benchmarks for evaluation. Given that the quality of the output of any participation exercise is difficult to determine, the authors suggest the need to consider which aspects of the process are desirable and then to measure the presence or quality of these process aspects. To this end, a number of theoretical evaluation criteria that are essential for effective public participation are specified. These comprise two types: acceptance criteria, which concern features of a method that make it acceptable to the wider public, and process criteria, which concern features of the process that are liable to ensure that it takes place in an effective manner. Future research needs to develop instruments to measure these criteria more precisely and identify the contextual and environmental factors that will mediate the effectiveness of the different participation methods.

Rowe Gene and Lynn J. Frewer (2005): A Typology of Public Engagement Mechanisms. *Science Technology Human Values* 2005 30: 251. Imprecise definition of key terms in the “public participation” domain have hindered the conduct of good research and militated against the development and implementation of effective participation practices. In this article, we define key concepts in the domain: public communication, public consultation, and public participation. These concepts are differentiated according to the nature and flow of information between exercise sponsors and participants. According to such an information flow perspective, an exercise’s effectiveness may be ascertained by the efficiency with which full, relevant information is elicited from all appropriate sources, transferred



to (and processed by) all appropriate recipients, and combined (when required) to give an aggregate/consensual response. Key variables that may theoretically affect effectiveness—and on which engagement mechanisms differ—are identified and used to develop a typology of mechanisms. The resultant typology reveals four communication, six consultation, and four participation mechanism classes. Limitations to the typology are discussed, and future research needs identified.

Rowe, Gene et al.(2005): Difficulties in evaluating public engagement initiatives: reflections on an evaluation of the UK GM Nation? Public debate about transgenic crops. Public Understand. Sci. 14 (2005) 331–352. In the realm of risk management, and policy-making more generally, “public engagement” is often advocated as an antidote to pathologies associated with traditional methods of policy-making, and associated deficit-model-driven communication strategies. The actual benefits of public engagement are, however, difficult to establish without thorough evaluation of specific engagement processes. Unfortunately, rigorous evaluation is difficult, and, perhaps for this reason, it has rarely been undertaken. In this paper we highlight a number of these difficulties in the light of our experiences in evaluating a major engagement initiative, namely the *GM Nation?* Public debate on the possible commercialization of transgenic crops, which took place in Britain in 2003. The difficulties we identify seem likely to be relevant to many, if not most, engagement evaluations. They are concerned with both theoretical/normative (*how one should evaluate*) and practical (*how one does evaluate*) issues. We suggest a number of possible solutions to these evaluation difficulties.

Rowe, Gene et al. (2008): reliability, validity and limitations. Analysis of a normative framework for evaluating public engagement exercises. Public Understanding of Science, 17: 419. Over recent years, many policy-makers and academics have come to the view that involving the public in policy setting and decision-making (or “public engagement”) is desirable. The theorized benefits of engagement (over traditional approaches) include the attainment of more satisfactory and easier decisions, greater trust in decision-makers, and the enhancement of public and organizational knowledge. Empirical support for these advantages is, however, scant. Engagement processes are rarely evaluated, and when they are, the quality of evidence is generally poor. The absence of standard effectiveness criteria, and instruments to measure performance against these, hinders evaluation, comparison, generalization and the accumulation of knowledge. In this paper *one* normative framework for evaluating engagement processes is considered. This framework was operationalized and used as part of the evaluation of a recent major UK public engagement initiative: the 2003 *GM Nation?* debate. The evaluation criteria and processes are described, and their validity and limitations are analyzed. Results suggest the chosen evaluation criteria have some validity, though they do not exhaustively cover all appropriate criteria by which engagement exercises ought to be evaluated. The paper concludes with suggestions on how to improve the framework.

Rowe, Gene and Nick Pidgeon (2006): A Comparison of Responses to Internet and Postal Surveys in a Public Engagement Context. Science Communication, Vol. 27 No. 3, March 2006 352-375. Involving the public in policy setting, or public engagement, is becoming increasingly popular in many democratic societies. Among the various ways of enacting engagement, the use of the Internet to either collect opinions or conduct public debate is seen as holding out great promise. However, the benefits of using the Internet over other communication media are uncertain because empirical research is limited. This article describes a comparison of data collected through two different media in the context of a “real-life” event, the 2003 U.K. “GM Nation?” public debate. The results suggest that demographically, the samples answering the questionnaires in the different formats differed significantly. However, there were no consistent differences between the approaches on a number of response effects.



Rowe, Gene et al. (2010): Public engagement in research funding: a study of public capabilities and engagement methodology. *Public Understand. Sci.* 19(2) (2010) 225–239. One trend in public engagement concerns involving the public in research priority setting. In this study members of the public were asked to select which of four potential projects (about food-related topics, presented by scientists) ought to be funded. The aim of the study was twofold: to trial and evaluate a method of engaging with the public about science, and to study the factors used by the public in making funding allocation decisions. Results suggest that, while participants enjoyed the process and appeared to learn from it, they were not particularly “representative”—a common problem with engagement approaches of this type. Results also suggest that participants’ funding decisions were largely based on factors such as “benefit to society” and “personal relevance,” though aspects such as the “likeability” and “trustworthiness” of the speaker may have played a role. Implications for involving the public in funding policy decisions are discussed.

Smith, Cobi (2014): Public Engagement in Prioritizing Research Proposals: A Case Study. *SAGE Open* 2014,4. Australia has reflected an international shift toward public participation in governance and science. Researchers have critiqued this shift as insufficient. Meanwhile, studies of how research funds are allocated also found room for improvement. This experiment tested a way to add value to the effort researchers put into research proposals by using them for deliberative public engagement. Three Australian events tested a model of deliberative participation in decision-making about science funding. These events were shorter than most deliberative processes, based on a model tested in the United Kingdom. Although recruitment was aimed at broad representation, participants had more formal education than Australia’s average. Voting decisions were most influenced by potential benefits to society of the planned research, as well as participants’ understanding of plans presented. Some reported that their decisions were influenced by whether benefits would happen locally. Results suggested that participants’ voting decisions were more influenced by the research plans than who presented them. However, unconscious biases cannot be ruled out as factors in decision-making. Participants reported they would be keen to participate in such a process again; however, this enthusiasm was linked to a meal incentive. The impact of brevity on deliberative decision-making is discussed, along with potential modifications for future experiments.

Stares, Sally (2009): Using Latent Class Models to Explore Cross-national Typologies of Public Engagement with Science and Technology in Europe. *Science, Technology & Society*, 14:2, 289–329. Public engagement with science and technology is a central theme in the field of Public Understanding of Science (PUS), particularly in Europe. Alongside public consultation exercises and similar activities aimed at generating engagement, there is a need for good survey indicators of the general climate for engagement with science and technology among the public. With internationally focused PUS studies increasing in prominence, such survey indicators should ideally characterise engagement in approximately the same way across a range of countries, to facilitate sensible cross-national analyses involving this construct. This article presents cross-national analyses of two sets of questions posed in the Eurobarometer survey on public perceptions of biotechnology, conducted in 2002 in fifteen European countries. The items analysed capture a range of elements of the concept of engagement, both with science and technology, in general, and with biotechnology, in particular. Latent class models are used to explore typologies of types of engagement: substantively, to understand their content, and methodologically, to identify items which do not work well in these classifications. The analyses are also used to assess the statistical cross-national comparability of such typologies, and consequently to describe variations in levels of engagement across countries.

Reports:

Worthington, Richard et al. (2012): Technology Assessment and Public Participation: From TA to pTA. *Expert and Citizen Assessment of Science and Technology (ECAST)*. This study is conceived as a progress report on the vision and



call for action presented in *Reinventing Technology Assessment*. In it, we address the state of pTA in the U.S. with some reference to other countries, and focus in particular on WWViews as a case study to explore the strategies and capabilities of ECAST.¹³ Our primary motivation in this report is to better understand what role (if any) a network such as ECAST can play in conducting and institutionalizing pTA in the U.S.

Stephens, Michael (2009): *Toward good practice in public engagement. A participatory evaluation guide for CSO's. Canada: The Canadian Council for International Co-operation (CCIC)*. This publication is the culmination of the Public Engagement Practice (PEP) Project which the Canadian Council for International Co-operation (CCIC) initiated in September 2006. The PEP project was developed in response to the need expressed by CCIC members and funders to: a) help define good practice in public engagement for global citizenship, and b) identify evaluation methodologies that can help civil society organizations (CSOs) document their effectiveness and tell their stories in a meaningful way.

Mohr A, Raman S (2012) *Representing the Public in Public Engagement: The Case of the 2008 UK Stem Cell Dialogue. PLoS Biol, 10(11)*. In this paper, we draw from our work as official evaluators of the SCD (see Box 1), and recent debates on the purpose of engagement, to ask: how should we understand the “public” in PE; why is PE important for both society and science; and what lessons should we take from actual PE exercises?

6.1.3 Group 3: Public engagement vis-à-vis deliberative innovations

Academic articles:

Abelson, Julia, Pierre-Gerlier Forest, John Eyles, Patricia Smith, Elisabeth Martin and Francois-Pierre Gauvin (2003). *Deliberations About Deliberative Methods: Issues in the Design and Evaluation of Public Participation Processes*, *Social Science and Medicine* 57 (2003): 239-51. A common thread weaving through the current public participation debate is the need for new approaches that emphasize two-way interaction between decision makers and the public as well as deliberation among participants. Increasingly complex decision making processes require a more informed citizenry that has weighed the evidence on the issue, discussed and debated potential decision options and arrived at a mutually agreed upon decision or at least one by which all parties can abide. We explore the recent fascination with deliberative methods for public involvement first by examining their origins within democratic theory, and then by focusing on the experiences with deliberative methods within the health sector. In doing so, we answer the following questions “What are deliberative methods and why have they become so popular? What are their potential contributions to the health sector?” We use this critical review of the literature as the basis for developing general principles that can be used to guide the design and evaluation of public involvement processes for the health-care sector in particular.

A. Anderson, Ashley and Jason Delborne and Daniel Lee Kleinman (2013): *Information beyond the forum: Motivations, strategies, and impacts of citizen participants seeking information during a consensus conference. Public Understanding of Science* 22(8) 955–970. During traditional consensus conferences, organizers control the formal information available to participants—by compiling structured background materials and recruiting expert panelists. Less formally, however, participants are encouraged to bring their own experiences into the deliberations, and in doing so, they often seek outside information. We explore this heretofore understudied phenomenon of information seeking during a deliberative event: the U.S. National Citizens’ Technology Forum (2008), which addressed the convergence of nanotechnology, biotechnology, information technology, and cognitive science on the potential development of human-enhancement technologies. Through interviews with participants and observation of



in-person and online deliberations, we identify outside information-seeking strategies and motivations. Our study demonstrates that conceptualizing models of deliberation as standalone settings of communication exchange ignores the reality of the complex information environment from which deliberative participants draw when making sense of technical issues. Future citizen deliberations must incorporate outside information seeking in the design of the exercises.

Bandelli Andrea and Elly A. Konijn (2012): Science Centers and Public Participation: Methods, Strategies, and Barriers. *Science Communication* 35(4) 419– 448. Science centers and museums are currently experimenting to strengthen the participation of the public in two-way conversations between the public and the institution. Eventually, these activities will lead to a stronger role of the public in the decision-making process of the museum. We analyzed the current situation faced by science museums in Europe in light of the recent discourse on public engagement with science and identified the main barriers and obstacles that prevent actual decision making of the public within the institutions. Finally, we discuss suggestions for solutions.

Burgess, Jacquelin et al. (2007): Deliberative mapping: a novel analytic-deliberative methodology to support contested science-policy decisions. *Public Understand. Sci.* 16. Pp. 299–322. This paper discusses the methodological development of *Deliberative Mapping* (DM), a participatory, multi-criteria, option appraisal process that combines a novel approach to the use of quantitative decision analysis techniques with some significant innovations in the field of participatory deliberation. DM is a symmetrical process, engaging “specialists” and “citizens” in the same appraisal process, providing for consistency of framing, mutual inter-linkage and interrogation, and substantial opportunities for face-to-face discussion. Through a detailed case study of organ transplantation options, the paper discusses the steps in DM. The analysis shows that DM is able to elicit and document consensual judgments as well as divergent views by integrating analytic and deliberative components in a transparent, auditable process that creates many opportunities for personal learning, and provides a robust decision-support tool for contested science-policy issues.

Burgess, Michael M. (2014): From 'trust us' to participatory governance: Deliberative publics and science policy. *Public Understanding of Science.* 23: 48. The last 20 years have seen a shift from the view that publics need to be educated so that they trust science and its governance to the recognition that publics possess important local knowledge and the capacity to understand technical information sufficiently to participate in policy decisions. There are now a variety of approaches to increasing the role of publics and advocacy groups in the policy and governance of science and biotechnology. This article considers recent experiences that demonstrate that it is possible to bring together those with policy making responsibility and diverse publics to co-produce policy and standards of practice that are technically informed, incorporate wide social perspectives and explicitly involve publics in key decisions. Further, the process of deliberation involving publics is capable of being incorporated into governance structures to enhance the capacity to respond to emerging issues with levels of public engagement that are proportionate to the issues.

Burri, Regula Valérie (2009): Coping with uncertainty: Assessing nanotechnologies in a citizen panel in Switzerland. *Public Understand. Sci.* 18 (5), 498–511. The policy shift towards “upstream public engagement” requires dealing with a lack of individual and stabilized scientific knowledge that accompanies any early stage of research and development. This article examines how actors cope with this epistemic uncertainty when deliberating emerging technologies. Analyzing the arguments of the participants in a Swiss citizen panel on nanotechnology, the article explores how actors form their opinions in an epistemically nonstabilized situation. The article shows how actors develop a strategy to handle this situation: analogies, such as to other risk technologies or “nature,” and personal experiences as patients and consumers are used as interpretive patterns and serve as tools to cope with the unknown. Focusing on the ways



uncertainty is handled, this approach is differentiated from other models to explain public attitudes toward emerging technologies, such as the “scientific literacy model” or the “cognitive miser model.”

Davies et al. (2012) Citizen engagement and urban change: Three case studies of material deliberation. *Cities* 29(6): 351–357. Public participation in urban planning and development is a widely used process which seeks to enable better decision making. In this paper we address critiques of such deliberation – that it relies on the discursive to the detriment of experiential, material or affective modes of expression – and describe three case studies of participation which emphasise, in different ways, ‘material deliberation’. We close by discussing the ways in which such material deliberative practices can best be understood as components of a wider deliberative society.

Delborne, Jason et al. (2013): Policy pathways, policy networks, and citizen deliberation: Disseminating the results of World Wide Views on Global Warming in the USA. *Science and Public Policy*, 40, pp. 378–392. Leading a coalition spanning 38 countries, the Danish Board of Technology organized World Wide Views on Global Warming (WWViews) on September 26, 2009. WWViews represented a pioneering effort to hold simultaneous citizen deliberations focusing on questions of climate change policy addressed at the UN Climate Change Conference (COP15) in December 2009. Sponsors and organizers envisioned WWViews as a means to affect the COP15 negotiations, and the project included numerous strategies to influence policy-making. This paper examines the success of such strategies in the USA through the lens of ‘policy pathways,’ routes of influence to affect the behavior of policy-makers and policy-making bodies. Our analysis highlights the difficulty of connecting citizen deliberations to meaningful policy pathways, and the importance of recognizing and enlisting policy networks, which we define as the collection of relationships, nodes, or pre-existing organizational ties that can be mobilized in the service of agenda- or alternative-setting.

Delborne, Jason A. et al. (2012): Virtual deliberation? Prospects and challenges for integrating the Internet in consensus conferences. *Public Understand. Sci.* 20(3) (2011) 367–384. Consensus conferences have functioned well in small, relatively homogeneous countries such as Denmark. In the geographically sprawling and socially diverse United States, however, meaningful citizen deliberation and decision-making on science and technology depends upon the ability to bring more participants “into the room.” The National Citizens’ Technology Forum, held in March 2008, responded to this need by integrating panels of citizens from multiple US cities in structured face-to-face and online deliberation. We analyze the success of this experiment by focusing on the experience of participants during the online deliberation component. We conclude with recommendations for future organizers of online deliberation, focusing on the benefits of combining synchronous and asynchronous engagement and improving facilitation practice and software capabilities.

Dryzek John S. et al. (2009): Promethean Elites Encounter Precautionary Publics The Case of GM Foods. *Science, Technology, & Human Values*, Vol. 34:3. Issues concerning technological risk have increasingly become the subject of deliberative exercises involving participation of ordinary citizens. The most popular topic for deliberation has been genetically modified (GM) foods. Despite the varied circumstances of their establishment, deliberative “minipublics” almost always produce recommendations that reflect a worldview more “precautionary” than the “Promethean” outlook more common among governing elites. There are good structural reasons for this difference. Its existence raises the question of why elites sponsor mini-publics and if policy is little affected by the results of deliberations, questions the possibility of deliberative legitimation of public policy. We make this argument by looking at mini-publics (where possible, a common consensus conference design) on GM foods in France, the United States, Canada, United Kingdom, Australia, and Switzerland. Deliberative legitimation becomes plausible if elites can attenuate their Promethean outlook. This is possible if ecological modernization discourse pervades their politics; Denmark provides an illustration.



ROGERS-HAYDEN, Tee and NICK PIDGEON (2006): Reflecting Upon the UK's Citizens' Jury on Nanotechnologies: NanoJury UK. NANOTECHNOLOGY LAW & BUSINESS. Public engagement on nanotechnologies has begun in the US, New Zealand, and within a number of countries of the European Union including the U.K. Despite the impetus and considerable enthusiasm for the idea of public engagement around nanotechnologies, this development has also been met with anxiety, particularly about amplifying risk concerns among the public and about its utility. In this article, Tee Rogers-Hayden and Nick Pidgeon discuss the U.K. 's first Citizens' Jury on nanotechnologies. They contend that NanoJury UK is a successful first step, with its recommendations revealing a balanced approach to nanotechnologies. This outcome suggests that the science and business communities need not fear that engaging the public will solely highlight negative consequences or concerns about risks. However, if dialogue with the public on new technologies is to become a regular element of science-society relationships, this will need constant reflection and evaluation. The authors offer reflections on NanoJury UK, in particular regarding the special nature of nanotechnology issues and the challenges inherent in all forms of public engagement when dealing with an issue of low public awareness and high scientific uncertainty. The authors tease out what we can learn from NanoJury UK for future exercises in public engagement on nanotechnologies.

Iredale et al. (2006): What choices should we be able to make about designer babies? A Citizens' Jury of young people in South Wales. Health Expectations, 9, pp.207–217. Design: A Citizens Jury is a deliberative process that presents a question to a group of ordinary people, allows them to examine evidence given by expert witnesses and personal testimonies and arrive at a verdict. This Citizens Jury explored designer babies in relation to inherited conditions, saviour siblings and sex selection with young people.

Isernia, Pierangelo and James S Fishkin (2014): The EuroPolis Deliberative Poll. European Union Politics 0(0) 1–17. This special issue focuses on EuroPolis, a unique experiment in 'deliberative democracy' at the European level convened in Brussels soon before the 2009 European Parliamentary Elections. A European wide random sample of the 27 member countries at the time was gathered to deliberate about two key issues—climate change and immigration as well as its voting intentions. The articles in the special issue focus on this Deliberative Poll, both quantitatively and qualitatively to assess what it tells us about ambitious versions of a 'European wide public sphere.' Can the citizens of Europe deliberate together across all the barriers of language and nationality? Can there be a credible process of European wide 'public will formation' about substantive policy issues and about voting?

Lang, Amy (2007): But Is It for Real? The British Columbia Citizens' Assembly as a Model of State-Sponsored Citizen Empowerment. POLITICS & SOCIETY, Vol. 35 No. 1, March 2007 35-69. Emerging forms of empowered participatory governance have generated considerable scholarly excitement, but critics continue to ask if such initiatives are "for real": Are participatory governance processes sufficiently independent? Do citizen participants make good policy choices? An in-depth look at the case of the British Columbia Citizens' Assembly on Electoral Reform suggests that real citizen empowerment depends on both the institutional constraints of the participatory setting and how citizen interests and arguments for policy outcomes crystallize over the course of a participatory process.

Lewanski, Rodolfo (2013) "Institutionalizing Deliberative Democracy: the 'Tuscany laboratory'," Journal of Public Deliberation: Vol. 9: Iss. 1, Article 10. Although deliberative theory has attracted increasing attention from many quarters, a relevant question that has not yet received adequate consideration is whether it should be institutionalized (Fung et al. 2005), and how that might be done. Although there have been many successful 'one shot' experiences of deliberative participation, there are few examples of institutionalization as a routine practice. This raises several issues including the relationship of deliberative processes with representative institutions and processes. Compared with other developed nations, Italy has not traditionally been a leader in the application of



public participation practices. However, several regional administrations have ventured into this field in recent years. At the end of 2007 the Region of Tuscany passed Law no. 69 defining Rules on the Promotion of Participation in the Formulation of Regional and Local Policies, an innovative legal provision explicitly aimed at pro-actively promoting citizen engagement in local and regional decision making.

Rask, Mikko (2013): The tragedy of citizen deliberation – two cases of participatory technology assessment, *Technology Analysis & Strategic Management*, 25:1, 39-55. Despite welcoming rhetoric and increased practice of citizen participation in S&T governance, there is little evidence of the political impact of such processes. In this paper I will analyse how the roadblocks to translating the results of citizen participation to effective policy making manifested in the context of two transnational participatory technology assessment projects, global-level *World Wide Views on Global Warming* (WWViews) and EU-level *Citizen Visions of on Science, Technology and Innovation* (CIVISTI). Resulting from the analysis, three types of roadblocks are identified: (1) diffuse understanding of the usability of deliberation as a component of policy making (cognitive level); (2) inadequate infrastructures for facilitating the translation of public-interest oriented deliberations into effective public policy (structural level); (3) inadequate resources and skills in deliberative bodies for effective social outreach of participatory processes (operational level). The paper contributes to more effective pTA by proposing a new ‘guiding vision’ for citizen deliberations, anticipating more influential policy pathways and proposing new skills for pTA.

Scholl, Gerd, Ulrich Petschow and Jan-Peter Ferdinand (2012): Deliberating Converging Technologies – An International Comparative Perspective on Public Engagement with Emerging Technologies. *International Journal of Emerging Technologies and Society* Vol. 10, pp: 1 – 5. The preface begins by providing a background to this special edition. It then summarises each of the six featured articles. The papers display a wide range of participation cultures and institutional settings of engagement. They elaborate on the performance of deliberative dialogues, methodological aspects of engagement, and their relation to (political) decision making contexts. The contributions report on national experiences from the Netherlands, Germany and the United States, focus on different ways of ‘designing’ participatory governance of emerging technologies and take a citizens’ perspective on the value of structured deliberations. They reveal that the discussions about converging technologies are closely related to further developments in nanotechnologies in combination with a new stream of scientific and technological advances. Although the quantity and quality of communication over emerging technologies between science and the public has increased over the past years, the articles indicate that the relevant social systems may still be too isolated. However, the ongoing discourses at the intersection of science and society provide conceptual orientations for future discussions about a responsible shaping of technological innovations.

Stirling, Andy and Sue Mayer (2001): A Novel Approach to the Appraisal of Technological Risk: a Multi-criteria Mapping Study of a Genetically Modified Crop,” *Environment and Planning C: Government and Policy* 19(4): 529–55. There is a need for new approaches that are more broadly based, transparent, pluralistic and ready to acknowledge uncertainty as well as being practically feasible and robust. The authors investigate the potential for a novel ‘multicriteria mapping’ (MCM) method as one such possible tool.

Williams, Simon N. (2010): A twenty-first century Citizens’ POLIS: introducing a democratic experiment in electronic citizen participation in science and technology decision-making. *Public Understand. Sci.* 19(5), 528–544. Related to ongoing debates concerning the future of “deliberative democracy” and “public sociology,” this article introduces a new approach to citizen participation in science and technology decision-making. The Citizens’ POLIS (Participatory On-Line Interactive System) is a multi-method, multi-stage, semi-structured, electronic public participation process. This pragmatic experiment is influenced by the philosophy of John Dewey and James Bohman, and sees the citizen as



the primary democratic inquirer and the social scientist as the key organizer and creator of the “institutional space for deliberation.” This article discusses the role of the social scientist in organizing an electronic participation experiment, one which seeks to reach a compromise between democratic legitimacy and political effectiveness. A recently completed pilot study on “Mobile Phones, Risk and Health” is used to illustrate the approach. In conclusion, the need for further empirical experimentation with this, and other processes for electronic citizen participation, is asserted.

Reports:

Chilvers, J. (2010) *Sustainable participation? Mapping out and reflecting on the field of public dialogue on science and technology*, Harwell: Sciencewise Expert Resource Centre. The past decade has seen an intensive drive - by governments, scientific institutions, academics, non-governmental organisations (NGOs), consultants and many others - to deliver new forms of public engagement with science, including deliberative and dialogue based approaches. This fast moving situation often leaves little time to reflect on the current state of the public participation field in this domain, how it got to this point, and how it should develop in the future. The following chapters report on a project that contributes to this end. In early 2009, 21 of the UK’s key thinkers, practitioners and policy makers on public engagement with science and technology related issues (see Box 1) were asked to down their books, keyboards, pens, flip charts, and post-it notes for half an hour or more, and take a step back to map out and reflect on the UK public dialogue field.

Coleman, Stephen and John Götze (2001): *Bowling Together: Online Public Engagement in Policy Deliberation*. London: Hansard Society: Our main concern in this report is with a fourth model of e - democracy which is undoubtedly the most difficult to generate and sustain: online public engagement in policy deliberation. The emphasis here is upon the *deliberative* element within democracy. This has little to do with technological innovation and much to do with new thinking about how to enrich the democratic process.

Books:

Fung, Archon and Erik Olin Wright (2003): *Deepening Democracy: Institutional Innovations in Empowered Participatory Governance (The Real Utopias Project)*. London: Verso. The institutional forms of liberal democracy developed in the nineteenth century seem increasingly ill-suited to the problems we face in the twenty-first. This dilemma has given rise in some places to a new, deliberative democracy, and this volume explores four contemporary empirical cases in which the principles of such a democracy have been at least partially instituted: the participatory budget in Porto Alegre; the school decentralization councils and community policing councils in Chicago; stakeholder councils in environmental protection and habitat management; and new decentralised governance structures in Kerala. In keeping with the other Real Utopias Project volumes, these case studies are framed by an editors’ introduction, a set of commentaries, and concluding notes.

Newton, Kenneth and Brigitte Geissel (2012): *Evaluating Democratic Innovations: Curing the Democratic Malaise?* New York: Routledge. In the face of increasing political disenchantment, many Western governments have experimented, with innovations which aim to enhance the working and quality of democracy as well as increasing citizens’ political awareness and understanding of political matters. This text is the most comprehensive account of these various democratic innovations. Written by an outstanding team of international experts it examines the theories behind these democratic innovations, how they have worked in practice and evaluates their success or failure

6.1.4 Group 4: Public engagement and higher education institutions

Academic articles:



Arvanitakis, James and Bob Hodge (2012): *Forms of Engagement and the Heterogeneous Citizen Towards a reflexive model for youth workshops. Gateways: International Journal of Community Research and Engagement* Vol. 5: 56–75. In social research, as in social activism, words can never be ignored, or they take a savage revenge. But if they are attended to respectfully in all their complexity they provide a guiding thread through otherwise bewildering mazes. In this article we illustrate this general point of method by focusing especially on ‘engagement’. We unpick its ambiguities, detach its baggage, and return its complexities to where they belong, in social experience. We recover the potency it still has, discernible amongst the mass of propagandistic uses of the term.

Bauer, Martin W and Pablo Jensen (2011): *The mobilization of scientists for public engagement. Public Understand. Sci.* 20(1), 3–11. This special issue addresses these public engagement activities (PE) from a particular angle; we focus on the mobilization of scientists. We ask: to what extent are scientists involved in these PE activities? What proportion of the scientific person-power is mobilized in this manner? We investigate intensity, e.g. identifying occasions when active scientists take part, and the proportion of scientists that take part in any such events. The papers will compare intensities across contexts, and try to explain them by motives of scientists and by institutional factors. For this purpose, our definition of public engagement (PE) is broad and generic, and includes all forms of communication with non-scientific audiences

Curtis, Vickie (2013): *Public Engagement Through the Development of Science-Based Computer Games: The Wellcome Trust’s “Gamify Your PhD” Initiative. Science Communication* XX(X) 1–9. New developments in digital technologies are enabling scientists to explore novel avenues of engagement beyond face-to-face approaches. “Gamifying” science through the creation of computer games based on scientific research is part of this trend. Recently, the Wellcome Trust held a competitive “hackfest” called “Gamify Your PhD.” Six finalists were selected to develop their research into a computer game with the help of professional games developers. I was able to observe this event with the aim of exploring the collaboration between scientists and games developers and observing how science-based computer games can be used to engage the wider public.

Davies, Sarah R. (2013): *Constituting Public Engagement: Meanings and Genealogies of PEST in Two U.K. Studies. Science Communication* 35(6) 687– 707. This article uses data from two U.K. studies in order to explore the meanings attached to public engagement. It focuses on two issues of importance to contemporary discussions of science communication: the degree to which there has been a smooth transition, in practice, from models of public understanding of science to those of public engagement with science and technology (PEST), and the histories, or genealogies, of such models. Data from two qualitative studies—a case study of one of the United Kingdom’s six Beacons for Public Engagement and a study of contract research staff— are used to characterize the ways in which U.K. academic communities understand PEST. It is argued that engagement is construed as *multiple, relational, and outcomes oriented*, with seven key outcomes ranging from better research to empowered individuals. These differences are traced to personal and professional backgrounds, suggesting that multiple and overlapping meanings around PEST are derived from particular histories that have been brought together, through the rubric of public engagement, in assemblages such as the Beacons.

Hartings, Matthew R. and Declan Fahy (2011): *Communicating chemistry for public engagement. NATURE CHEMISTRY, VOL 3 SEPTEMBER 2011.* We argue that chemists should move from viewing communication as being solely about improving scientific literacy to seeing it as a means of engaging audiences with their work. We argue that vague notions of a ‘general public’ should be understood more as a collection of different segments of the public, or different publics, each with its own values, knowledge, beliefs and motivations. Moreover, we argue that chemists should draw on the reservoirs of knowledge from research in science communication to better communicate their



work in a way that fosters trust, builds relationships and creates a dialogue with multiple audiences — in a contemporary communications landscape that is social, pluralistic and participatory.

Marjanovic, Sonja, Caroline Fry and Joanna Chataway (2012): Crowdsourcing based business models: In search of evidence for innovation 2.0. *Science and Public Policy* 39, pp. 318–332. Open innovation has gained increased attention as a potential paradigm for improving innovation performance. This paper addresses crowdsourcing, an under-researched type of open innovation that is often enabled by the web. We focus on a type of crowdsourcing where financial rewards exist, where a crowd is tasked with solving problems which solution seekers anticipate to be empirically provable, but where the source of solutions is uncertain and addressing the challenge in-house perceived to be too high-risk. There is a growing recourse to crowdsourcing, but we really know little about its effectiveness, best practices, challenges and implications. We consider the shift to more open innovation trajectories over time, define crowdsourcing as an open innovation model, and clarify how crowdsourcing differs from other types of ‘open’ innovation (e.g. outsourcing and open-source). We explore who is crowdsourcing and how, looking at the potential diversity and core features and variables implicated in crowdsourcing models.

Neresini, Federico and Massimiano Bucchi (2011): Which indicators for the new public engagement activities? An exploratory study of European research institutions. *Public Understand. Sci.* 20(1): 64–79. Public engagement (PE) activities have become a regular feature for several research institutions in Europe. However, while research and teaching functions can count on established indicators, PE functions are often performed as a sort of “goodwill exercise.” Few studies have focused on defining appropriate indicators and standards, particularly at the organizational level. An exploratory study was carried out on a sample of 40 European research institutions with a view to understanding whether the diffusion of PE activities has led to incorporating the PE perspective into “routine” activities of organizations. The results point to quite unequal performances among European research institutions. Also, while most research institutions examined have dedicated resources for PE activities, the study suggests that such activities are not yet considered essential. Performance indicators and standards might prove of great support for institutions and policy actors that wish to take seriously the challenge of public engagement and societal dialogue.

Riesch, Hauke and Clive Potter (2014): Citizen science as seen by scientists: Methodological, epistemological and ethical dimensions. *Public Understanding of Science* 2014, Vol. 23(1) 107– 120. Citizen science as a way of communicating science and doing public engagement has over the past decade become the focus of considerable hopes and expectations. It can be seen as a win–win situation, where scientists get help from the public and the participants get a public engagement experience that involves them in real and meaningful scientific research. In this paper we present the results of a series of qualitative interviews with scientists who participated in the ‘OPAL’ portfolio of citizen science projects that has been running in England since 2007: What were their experiences of participating in citizen science? We highlight two particular sets of issues that our participants have voiced, methodological/epistemological and ethical issues. While we share the general enthusiasm over citizen science, we hope that the research in this paper opens up more debate over the potential pitfalls of citizen science as seen by the scientists themselves.

Stilgoe Jack, Matthew Watson and Kirsty Kuo (2013) Public Engagement with Biotechnologies Offers Lessons for the Governance of Geoengineering Research and Beyond. *PLoS Biol* 11(11). In this paper, we reflect on our involvement in one of the first major SRM research projects, SPICE (Stratospheric Particle Injection for Climate Engineering). We look back on recent public engagement with biotechnologies, to compare this with our own stakeholder engagement work. Questions to do with the context and wider purposes of scientific research emerge as important, but these are conventionally neglected in governance.



Tang, Jessica Janice et al. (2012): Public Engagement Through Shared Immersion: Participating in the Processes of Research. *Science Communication*, 35(5) 654–666. Recently, the literature has emphasized the aims and logistics of public engagement, rather than its epistemic and cultural processes. In this conceptual article, we use our work on surgical simulation to describe a process that has moved from the classroom and the research laboratory into the public sphere. We propose an innovative shared immersion model for framing the relationship between engagement activities and research. Our model thus frames the public engagement experience as a participative encounter, which brings visitor and researcher together in a shared (surgical) experience mediated by experts from a range of domains.

Reports:

Burchell, Kevin, Sarah Franklin and Kerry Holden (2009): *Public culture as professional science: final report of the SCOPE project – Scientists on public engagement: from communication to deliberation?* September, BIOS, London School of Economics and Political Science. This report is the outcome of a three-year research project conducted from September 2006 to August 2009 in the BIOS Centre for the Study of Bioscience, Biomedicine, Biotechnology and Society at the London School of Economics and Political Science. The project was funded by the Wellcome Trust (*Society Awards: Research stream, Engaging Science* public engagement grants programme: award number 080201). The research objective was to provide a data-led, sociological analysis of the understandings, views, perspectives, judgements and experiences of scientists working in the life sciences with respect to public engagement and public dialogue.

Bulger, Monica, Willam Dutton and Rebecca Eynon (2011): *Best Practices on Outreach and public engagement. ULab: the European Laboratory for Modelling the Technical Research University of Tomorrow. Draft, report D.5.1.* This document reports on current practices, difficulties and challenges for the future on Outreach (or Public Engagement) for European Universities and compiles different best practices of Ulab partners on these activities.

Bowser, Anne & Shanley, Lea (2013): *New Visions in Citizen Science. Washington, DC: Woodrow Wilson International Center for Scholars.* This report showcases seventeen case studies that offer a mosaic view of federally sponsored citizen science and open innovation projects, from in-the-field data collection to online games for collective problem-solving. Its goal is not to provide line-by-line instructions for agencies attempting to create or expand projects of their own; each agency has a unique mission with distinct challenges that inform project designs. Rather, it offers a sampling of different models that support public contribution, potential challenges, and positive impacts that projects can have on scientific literacy, research, management, and public policy. Some case studies represent traditional but well-executed projects that illustrate how citizen science functions at its best, by contributing to robust scientific research.

6.1.5 Group 5: Public engagement concerning community based research

Academic articles:

Keck, Lindsey and Andrew Buss (2012): *Pathways to Citizen Engagement: Transforming Urban Communities through Public Technology Access. The International Journal of Technology, Knowledge, and Society, Volume 8, Issue 2.* How does technology impact a community-based organization and its service population? By offering technology access through public computer centers as a part of their core mission and programmatic offerings, individual organizations have successfully extended technology access to their most proximate clients. But how might a more comprehensive and coordinated web of computer centers shift the landscape of an economically challenged urban environment? The City of Philadelphia is engaged in a large-scale implementation of a comprehensive computer center network and



technology training classes in underserved neighborhoods. Through this coordinated effort, which includes health and social service organizations, recreation centers, libraries, and universities, we increase organizational capacity and create a systematic, citywide effort to bridge the digital divide. This program is unique because its design is rooted in a dedicated group of collaborative stakeholders with an abiding commitment to digital literacy and skills. The authors will examine program structure, implementation strategy, and stakeholder participation, arguing that by leveraging human capital and technology resources we can transform communities.

Reports:

Caldwell, Christine (2003): Have you been PA'd? Using participatory appraisal to shape local services. East End Health Action, Greater Easterhouse Community Health Project, Greater Glasgow NHS Board, Oxfam GB. This report comes from a body of work undertaken in the Glasgow area with people from two local community health projects, East End Health Action and Greater Easterhouse Community Health Project. The projects cover a wide range of issues, but they had three things in common: 1. Both areas had previously been identified as areas of deprivation and as such were part of the Scottish Social Inclusion Partnership (SIP) programme. 2. Both wanted to involve the community in decisions affecting their lives, whether this was about a local play scheme or how to feed into a major healthcare project. 3. In order to do so, and with the help of trainers recruited by Oxfam's UK Poverty Programme, they used what are known as participatory appraisal (PA) tools.

The New Economics Foundation (NEC) (1998): PARTICIPATION WORKS! 21 techniques of community participation for the 21st century. The New Economics Foundation. The rhetoric says that Participation Works! But what does participation really mean and what makes it really happen? Participation Works! contains twenty-one proven techniques from around the world. It shows how to choose between them, how to use them properly and where to go for more information. With this book, you can prove that the rhetoric is true: Participation Works!

6.1.6 Group 6: Public engagement with regard to specific disciplines

Academic articles:

Anderson, Claudine et al. (2011): The National DNA Database on trial: engaging young people in South Wales with genetics. Public Understand. Sci. 20(2), 146–162. While there has been research conducted on public views about ethical and social aspects of the National DNA Database (NDNAD), there is little which focuses on views of young people, in particular those whose details are held on the NDNAD. We describe an engagement activity developed in South Wales to engage young offenders with ethical and social issues surrounding the NDNAD – a Mock Trial – and how we facilitated the presentation of their views to policy makers. We discuss the successes and challenges we encountered with engaging young offenders, decisions that the young people reached about possible future policies for the NDNAD at the Mock Trial, and their contribution to the decision-making process.

Ankeny, Rachel A. and Susan Dodds (2008): Hearing community voices: public engagement in Australian human embryo research policy, 2005–2007. New Genetics and Society Vol. 27, No. 3, 217–232. This paper investigates the recent public policy processes in Australia with regard to embryo research, including the work of the legislative review committee, parliamentary debates, and the production of the National Health and Medical Research Council guidelines for embryo research. We examine various mechanisms used during each of these policymaking stages to engage various publics, and the procedures for balancing conflicting values, which were particularly evident given the strong promotion of biotechnology investment by government side by side with vigorous opposition to certain



technologies by segments of the Australian community. We explore the ethical and democratic challenges posed by developments in embryo research as well as various difficulties that arose in engaging the Australian public during these policymaking processes, whether these might prove to be impediments to the development of justifiable and legitimate life sciences research policy in Australia, and what the future prospects are for adequate public engagement in these contentious areas.

Barbagallo, Fiona and Jill Nelson (2005): Report: UK GM Dialogue. *Science Communication*, 26: 318. Responding to growing concerns about genetically modified (GM) foods, the United Kingdom (UK) government launched a broad national dialogue to help determine whether GM crops should be commercially grown in the UK. This report describes the initiative, said to be the largest public consultation to date in the UK on a science issue.

Bora, Alfons and Heiko Hausendorf (2011):Introduction. Governing Technology through Public Participation. *Comparative Sociology* 8. Pp. 477–489. Against the background of a still controversial debate over participatory governance, the intention of this issue is to scrutinise critically central aspects of this controversy. In particular, the papers here explore regular, routine forms of participatory governance in the heart of political power, namely in administrative procedure. By contrast, political sciences and sociology often focus on new, alternative procedures, including citizen juries, consensus conferences, scenario workshops, and public consultation exercises. Normal forms of participatory governance in constitutional democracy are inevitably governed by rule of law such that a legal framework lies behind participants' concrete actions or communications.

Bovaird ,Tony and Elke Loeffler (2012): From Engagement to Co-production: The Contribution of Users and Communities to Outcomes and Public Value. *Voluntas* (2012) 23:1119–1138. User and community co-production has always been important, but rarely noticed. However, there has recently been a movement towards seeing co-production as a key driver for improving publicly valued outcomes, e.g. through triggering behaviour change and preventing future problems. However, citizens are only willing to co-produce in a relatively narrow range of activities that are genuinely important to them and are keen that their co-production effort is not wasted by public agencies. Moreover, there are concerns that co-production may involve greater risks than professionalised service provision, although services may be quality assured more successfully through involving users and embedding them in the community. While offering potential significant improvements in outcomes, and cost savings, co-production is not resource-free. Co-production may be 'value for money', but it usually cannot produce value without money.

Chun, Soon Ae, Rodrigo Sandoval and Yigal Arens (2011): Public engagement and government collaboration: Theories, strategies and case studies. *Information Polity* 16, 189–196. This special issue features selected papers from the dg.o 2010 conference on the theme of "Public Engagement and Government Collaboration: Theories, Strategies and Case Studies." E-government initiatives and solutions are characterized by the use of Information and Communication Technology (ICT) for public administration to achieve their strategic goals. US government strategies in implementing e-government are focused on citizen-centered, result-oriented and innovation-based services and processes [2]. Recently the US federal government has also started the Open Government Directive to promote information transparency, citizen participation and cross-government collaborations [4]. Similarly, municipal and state governments have their own strategic goals and missions to be implemented via ICT-based e-government programs and initiatives. In order for each government and each agency to achieve its strategic goals, e-government projects and initiatives need to be properly planned, modeled, managed and implemented. Quantifiable measures of success also need to be defined in terms of productivity gains, service quality improvements and cost reductions. In this issue, we present two broad categories of government strategies for collaboration. One deals with public engagement in



citizen-to-government (C2G) collaborations, and the other is government-to government (G2G) collaborations to achieve data transparency and strategy sharing as well as innovative technology implementations.

Cohen, Emma RM (2008): Public engagement on global health challenges. *BMC Public Health. Correspondence, 8:168.* Background: Experience with public engagement activities regarding the risks and benefits of science and technology (S&T) is growing, especially in the industrialized world. However, public engagement in the developing world regarding S&T risks and benefits to explore health issues has not been widely explored. Methods: This paper gives an overview about public engagement and related concepts, with a particular focus on challenges and benefits in the developing world. We then describe an Internet-based platform, which seeks to both inform and engage youth and the broader public on global water issues and their health impacts. Finally, we outline a possible course for future action to scale up this and similar online public engagement platforms. Results: The benefits of public engagement include creating an informed citizenry, generating new ideas from the public, increasing the chances of research being adopted, increasing public trust, and answering ethical research questions. Public engagement also fosters global communication, enables shared experiences and methodology, standardizes strategy, and generates global viewpoints. This is especially pertinent to the developing world, as it encourages previously marginalized populations to participate on a global stage. One of the core issues at stake in public engagement is global governance of science and technology. Also, beyond benefiting society at large, public engagement in science offers benefits to the scientific enterprise itself. Conclusion: Successful public engagement with developing world stakeholders will be a critical part of implementing new services and technologies. Interactive engagement platforms, such as the Internet, have the potential to unite people globally around relevant health issues.

Cook, Peta S.(2014): Institutional frameworks and terms of reference: The public discussion on clinical xenotransplantation in Australia. *Science and Public Policy, pp. 1–12.* This paper explores how institutional frameworks compromised the potential for public engagement on clinical xenotransplantation in Australia. Through critical discourse analysis, these limitations are exposed through two factors: the National Health and Medical Research Council (NHMRC) Act, which limits public consultation to being responsive; and the terms of reference provided to the Xenotransplantation Working Party, which constrained their consultative practices. These findings contribute towards understandings of public participatory practices by examining how frameworks that exist prior to public involvement, including institutional acts and terms of reference, can marginalize the publics and continue to give authority to those voices that already hold privilege. As a result, there is a need to alter how public consultation is framed in the NHMRC Act, which will provide an opportunity to reframe and improve consultative practices and potentially facilitate meaningful discursive public debate and engagement on scientific matters in Australia.

Cormick, Craig (2012): The complexity of public engagement. *NATURE NANOTECHNOLOGY, VOL 7, FEBRUARY 2012.* To the Editor — Nanotechnology has been the subject of a large number of public engagement exercises over the past decade, but all this activity has had little impact on government policy formulation because governments tend to favour their own forms of engagement.

Cotton, Matthew and Patrick Devine-Wright (2012): Making electricity networks “visible”: Industry actor representations of “publics” and public engagement in infrastructure planning. *Public Understand. Sci. 21(1), 17–35.* This interview study with UK electricity distribution and transmission network operators (DNO and TNO) and the regulator Ofgem, examines how key industry actors conceptualise “publics,” “stakeholders” and “customers” and how these conceptualisations subsequently inform their engagement practices with these heterogeneous groups. The results show that regulatory changes to the structure of distribution networks have encouraged greater levels of “stakeholder” involvement. However, DNO regional monopoly powers and the regulatory environment serve to



conflate network actors' representations of "the public" with "customers," and also "hides" DNO roles in a manner that precludes direct citizen engagement. TNO respondents employ public exhibitions in transmission line siting, although at a stage "downstream" in the decision-making process whereby citizens have little decisional influence. We conclude that network operators adopt the rhetoric of deliberative engagement whilst lacking a clear rationale and effective means to incorporate citizen perspectives in long-term network development or specific infrastructure siting proposals.

Delgado, Ana, Kamilla Lein Kjølberg and Fern Wickson (2011): Public engagement coming of age: From theory to practice in STS encounters with nanotechnology. *Public Understanding of Science*. 20: 826. In this paper, we present a study of Science and Technology Studies (STS) perspectives on public engagement, specifically focusing on the gap between theory and practice. In aiming to develop a conceptual map of this gap, we identify five top topics of tension. These are related to the general questions of: "Why should we do public engagement?," "Who should be involved?," "How should it be organised?," "When should it be done?" and "Where should it be grounded?" We employ nanotechnology as a paradigmatic case to help us explore these tensions. In practice, the choices one makes in relation to one topic of tension may influence the choices available for others. Enhanced awareness of the presence of these tensions, as well as their interconnections, can help build reflexive capacity and make visible the various alternative routes available for STS practitioners working in the "age of engagement."

Doubleday, Robert (2007): Risk, public engagement and reflexivity: Alternative framings of the public dimensions of nanotechnology. *Health, Risk & Society*, 9(2): 211 – 227. Nanotechnology research receives large sums of public funds because of the technological innovations it promises, not least in the area of medical technologies. Exploration of social aspects of nanotechnology is now encouraged by science policy in attempts to foreclose possible future public controversy. This article explores how the social aspects of nanotechnology have emerged as a public issue; how public engagement projects are framed in terms of nanotechnology; and the rationale for social science research on nanotechnology. The article argues that public policy processes are increasingly focusing narrowly on the environmental and health risks of nanoparticles and that public engagement projects are limited by adopting nanotechnology as a focus of deliberation. The article concludes by rejecting grand claims for social science as a means of making science and technology more reflexive, but suggests more modest ways that research can support a widening of discussion of the public dimensions of nanotechnology.

Elam, Mark (2005): When Scientists Meet Film-Makers Inventing a Swedish Approach to Public Engagement with Biotechnology. *Acta Sociologica*. 48: 237. The new interest in staging public engagements with science, and the biosciences in particular, has been widely associated with a 'democratic turn' in the public understanding of science movement. This article seeks to bring this association under closer scrutiny by focusing on the development of public engagement with biotechnology in Sweden. It analyses the production and dramatic composition of a two-part film documentary entitled *Life at Stake*, financed by the Swedish research community and broadcast on public service television. Particular attention is paid to the actions of the new non-profit organization Scientists Meet Film-Makers, and the crucial mediating role this organization played in creating the conditions of possibility for *Life at Stake* to be financed, produced and broadcast. In conclusion, rather than supporting a new logic of deliberation, *Life at Stake* is discussed as more concerned with symbolization and spectacle in its use of images of suffering and hope as the touchstone of truth about biotechnology in society. In this way, science communicators appear to be displaying a willingness to learn from the media practices of environmental organizations and other protest groups, who have long appreciated the importance of contesting symbolic codes and schemes of meaning in society.



Escobar, Oliver (2013): Upstream public engagement, downstream policy-making? The Brain Imaging Dialogue as a community of inquiry. *Science and Public Policy*, pp. 1–13. UK science and policy networks increasingly advocate ‘upstream public engagement’, that is, early public deliberation around potentially controversial science and technology. In the last two decades, neuroscience has advanced considerably, and non-medical uses of brain imaging technologies (BIT) are now raising substantial concerns. The 2010 Brain Imaging Dialogue (BID) brought together scientists, health practitioners, sociologists, philosophers, ethicists, religious representatives, citizens, policy-makers and legal experts to deliberate on non-medical uses of BIT. I present the BID as a community of inquiry that sought to stimulate policy deliberation in Scotland. The paper tells the story of the process from the perspective of the public engagement practitioners who organised it, drawing lessons about the community of inquiry method and concluding with reflections on the challenges of connecting upstream engagement to ongoing policy-making. Taking cues from practitioners’ experiences, I propose an institutional mechanism for the uptake of outputs from deliberative processes.

Grieger, Khara D. et al. (2012): Improving Risk Governance of Emerging Technologies through Public Engagement: The Neglected Case of Nano-Remediation? *International Journal of Emerging Technologies and Society* Vol. 10, pp: 61 – 78. While public engagement is internationally considered to be crucial for successful governance of nanotechnologies (NT), it has not necessarily been clear what the relationship is (or should be) between these engagement efforts and the more traditional governance practice of scientific risk assessment. This paper therefore carries out a literature review to capture and analyse how governance strategies have focused on public engagement for NT and how such engagement relates to processes of risk analysis. To further investigate these issues, we focus on a specific NT application as a case study: the use of nanoparticles for environmental remediation (nano-remediation). Through our review and analysis we find that the main approaches to incorporating public engagement into governance strategies have been the generation of a better understanding of public perceptions of NT and the setting of general research priorities. In the case of nano-remediation, we find that public engagement efforts have been extremely limited, even though this technology has been used in the field in several countries and highlighted as potentially problematic by others. Finally, we provide recommendations for improving the links between public engagement and risk assessment and specifically call for more work on the case of nano-remediation.

Groves, Christopher (2011): Public engagement and nanotechnology in the UK: restoring trust or building robustness? *Science and Public Policy*, 38(10), December 2011, pages 783–793. Concerns about the social sustainability of emerging technologies are identified as a motivation behind recent interest in public engagement as a mode of formal technology assessment, nanoscale science and technology (NST) being a key example. Two rival understandings of engagement as a contribution to social sustainability, namely ‘restoring trust’ and ‘building robustness’ are identified. These different approaches are analysed as strategic responses to the politics of uncertainty in technological societies, each reflecting different assumptions about how to domesticate an intrinsically uncertain future. Government-sponsored experiments with upstream engagement around NST in the UK were surrounded by rhetoric concerning the need to build robustness into how nanotechnologies develop. It is argued, however, that assumptions held by policy and business actors about the strategic value of narratives of restoring trust, together with deeply embedded assumptions about how technological innovation creates the future, tended to place obstacles in the way of turning this aspiration into reality.

Guston, David H. (2014): Building the capacity for public engagement with science in the United States. *Public Understanding of Science*, Vol. 23(1) 53–59. This paper reviews efforts of the Center for Nanotechnology in Society at Arizona State University (CNSASU) to begin to build capacity for public engagement with science in the United States.



First, the paper sets a context in the US of the current challenges to democracy and for science. It then reviews the literature on the accomplishments of the National Citizens' Technology Forum (NCTF) on nanotechnology and human enhancement, held in 2008, as well as some caveats that emerged from that enterprise. It concludes with a brief discussion of two kinds of activities – participation in the World Wide Views process organized by the Danish Board of Technology, and methodological innovations that include more concrete and experiential modes of engagement – that have spun off from the NCTF.

Jones, Richard A. L. (2014): Reflecting on public engagement and science policy. *Public Understanding of Science*, Vol. 23(1) 27–31. This article presents a personal reflection on the evolution of thinking about public engagement with science in the UK, with a particular emphasis on the experience with nanotechnology.

Krabbenborg, Lotte (2012): The Potential of National Public Engagement Exercises: Evaluating the Case of the Recent Dutch Societal Dialogue on Nanotechnology. *International Journal of Emerging Technologies and Society* Vol. 10, 2012, pp: 27 – 44. New and emerging nanotechnologies set a challenge for early public involvement because of their high degree of uncertainty, unpredictability and unknowns. The Dutch national societal dialogue on nanotechnology and associated ethical, legal and societal (ELSA) issues is a site to study how this challenge was addressed. As it was part of the government's Action Plan it was shaped and organised by an independent Committee. A key step in this process was to invite proposals whereby citizens could develop dialogue activities. Document analysis, interviews and participatory observations were used to examine the strategies and activities developed at each level and to analyse the mutual dynamics between activities at the different levels. A particular focus was on how ethical and societal issues were articulated (or not) and taken up in policy considerations (or not). They were articulated in some of the activities, but were not visible in the Committee's reports and eventual policy considerations. While taking contingencies of this particular exercise into account, the general difficulties encountered imply lessons for designing and orchestrating productive societal dialogues on new and emerging technologies.

Levitt, Mairi, Kate Weiner, and John Goodacre (2005): Gene Week: a novel way of consulting the public. *Public Understand. Sci.* 14 (2005) 67–79. Within academic circles, the "deficit" model of public understanding of science has been subject to increasing critical scrutiny by those who favor more constructivist approaches. These suggest that "the public" can articulate sophisticated ideas about the social and ethical implications of science regardless of their level of technical knowledge. The seminal studies following constructivist approaches have generally involved small-scale qualitative investigations, which have minimized the pre-framing of issues to a greater or lesser extent. This article describes the Gene Week Project, sponsored by the Wellcome Trust, which attempted to extend this work to a large-scale consultation on genetics and health through the medium of a local daily newspaper. Readers were invited to respond to a set of open-ended questions that accompanied stimulus material published each day for five consecutive weekdays. The articles were written with the intention of extending the limited range of discourses around genetics and biotechnology that are usually presented by the popular media (hope, fear, tragedy and bravery). Responses raised overarching issues about the place of emerging health technologies in society reminiscent of previous open-ended consultations in this field. The paper ends with a critical discussion about the potential of this method to contribute to the further development of open-ended public consultations.

Loukis, Euripidis, Yannis Charalabidis, and Jeremy Millard (2012): From the Special Issue Editors: European Research on Electronic Citizen Participation and Engagement in Public Policy Making. *Information Systems Management*, 29:255–257. This Special Issue includes six articles presenting "European Research on Electronic Citizen Participation and Engagement in Public Policy Making." While the initial "paradigm" of using ICT for supporting citizens' participation in government policy processes was a web site providing to them information on current and planned



government policies and activities and allowing them to participate in relevant electronic consultations in forums, European research in this area placed emphasis on the development of other more effective and advanced “paradigms.” So our first four articles analyze four such new paradigms of using ICT for supporting citizens’ participation and engagement in public policy making: opening government data, location-based e-participation services, structured e-consultations. and e-petitions.

Marris Claire & Rose, Nikolas (2010) Open Engagement: Exploring Public Participation in the Biosciences. *PLoS Biol*, 8(11). This series aims to investigate, through specific case studies, whether, and under what conditions, it is possible to engage the public in scientific issues in meaningful ways in decision-making about the innovation pathways of biosciences.

Miah, Andy (2005): Genetics, cyberspace and bioethics: why not a public engagement with ethics? *Public Understand. Sci.* 14 (2005) 409–421. The representation of science, medicine, and technology has been an emerging agenda item for cultural and media research in the last decade. In part, its importance arises out of a concern for the public understanding of science (PUoS), which has been a priority in governmental policy discussions. This paper discusses how the utilization of cyberspatial communities can address the challenge of developing a global engagement with science and ethics, by considering the case of genetic technology and the role of experts in public debate. It critically appraises the PUoS and suggests that a way of advancing its methodological assumptions is through developing a “Public Engagement with Ethics.” On this basis, concerns about scientific journalism are more effectively contextualized and enhance the possibility of ensuring that nonexperts are aware of the importance of any scientific innovation.

Moore, Alfred (2010): Public bioethics and public engagement: the politics of “proper talk”. *Public Understand. Sci.* 19(2), 197–211. This article uses notions of “public talk” and “regulation as facilitation” to develop an account of public bioethics in the UK as a form of scientific governance, drawing on document analysis and expert interviews. First, this article will show the “ethical” problematization of scientific governance in the UK through the emergence of the Human Genetics Commission (HGC), Nuffield Council on Bioethics (NCB), and Human Fertilisation and Embryology Authority (HFEA). Second, it will argue that an “ethical” model has emerged alongside and partially displaced a “technical” model of expertise in scientific governance. The article will introduce the notion of “proper talk,” a set of techniques for facilitating ethical debate, characterized by the active elicitation of public engagement and the inclusion of emotions and subjectivity. The article then questions whether the authority to categorize publics and identify “proper” ethical positions reintroduces problems of expertise in a new form.

Suda, Eiko, Darryl Macer and Ichiro Matsuda (2009): Challenges to public engagement in science and technology in Japan: experiences in the HapMap Project. *Genomics, Society and Policy* 2008 2009, Vol.5, No.1, pp.114-133. Public engagement in science and technology has grown in importance as developments in science and technology make increasingly significant impacts on people’s lives. Now, efforts to engage publics in social decision-making or consensus building regarding science and technology involve participation, learning or deliberation opportunities, as well as interactive or coproductive efforts among various sectors in society based on the recognition of scientific activities as a part of social operations - even those performed by scientific communities. We have conducted a community engagement program in the HapMap project, the international human genome program, in Japan since 2002. Consequent upon our various approaches to engage Japanese publics, a range of observations were made, such as that: public engagement is not yet recognized or institutionalized in Japan; there is a wide gap between science and society; and the implications of public engagement in a Japanese context have not been examined enthusiastically, especially from the perspectives of political decision making, social consensus-building or selfdetermination. In this



paper, we provide an overview of public engagement in Japan, and discuss issues and challenges raised by the HapMap community engagement project. We also discuss the implications of public engagement for social decisionmaking and self-determination, and explore the prospects for public engagement in science and technology in Japan

Talwar, Sonia, Arnim Wiek and John Robinson (2011): User engagement in sustainability research. *Science and Public Policy*, 38(5), pages 379–390. User engagement, stakeholder involvement, and public consultation in sustainability research have received increased attention over the last decade. Key driving factors behind this are that social outcomes, policy relevance, and user engagement have all become requirements for securing research funding. Many articles have provided compelling arguments for the need to reconsider why, when and how users are engaged within the research process. We propose a typology of user engagement strategies in research, focusing on the actual research process and emphasizing types of engagement in research. We illustrate these types with a comparative analysis of empirical examples from three interactive sustainability research projects, based in Canada and Switzerland. The article discusses the challenges that require a reconfiguration of institutional and organizational structures to seize the full potential of interactive sustainability research.

Watermeyer, Richard (2012): Measuring the Impact Values of Public Engagement in Medical Contexts. *Science Communication*, 34(6) 752– 775. This article considers the impact values attributed to public engagement with science and technology (PEST) as articulated by a cohort of U.K.- based medical researchers ($n = 84$) within a partially open-ended survey. Two discrete yet interlinking impact categories emerge—impact of PEST on researchers and the research process and impact of PEST on the public image and reputation of research/researchers. These accounts reveal a limited sentiment among medical researchers for PEST envisaged as “upstream” and leading to public/patient collaboration and suggest that PEST is encouraged more frequently in the promotion and defense of medical science within the public sphere.

Wilkinson, Clare, Karen Bultitude and and Emily Dawson (2011):“Oh Yes, Robots! People Like Robots; the Robot People Should do Something”: Perspectives and Prospects in Public Engagement With Robotics. *Science Communication*, 33(3) 367–397. Governmental and institutional policy making in a number of countries has embedded public engagement strategies as a primary channel to connect citizens with scientific and technological innovation. Robotics is emerging as a key site for such new technological activity and its applications are likely to be increasingly notable in our lives in coming years. Robotics researchers are investing considerable time and effort in “engaging” publics. Concentrating on the findings of 24 qualitative interviews with those actively organizing or engaging publics, across 11 public engagement activities focused on the robotics field within the United Kingdom, this article explores their conceptions of “public engagement” and its benefits and constraints. The results suggest that while the language of engagement has been embraced there.

Reports:

OECD (2012): PLANNING GUIDE FOR PUBLIC ENGAGEMENT AND OUTREACH IN NANOTECHNOLOGY. KEY POINTS FOR CONSIDERATION WHEN PLANNING PUBLIC ENGAGEMENT ACTIVITIES IN NANOTECHNOLOGY. In 2007 the OECD Working Party on Nanotechnology (WPN) initiated a project on public engagement that led to the development in 2009 of eight key points to assist policy makers in establishing activities for communication and outreach in nanotechnology. These key points for consideration are presented in this “Planning Guide for Public Engagement and Outreach in Nanotechnology”. The guide may also assist industries, industry bodies and other entities in establishing their communication strategy and engaging with the public. The guide may also be used as support for developing



public engagement activities for other emerging technologies which would raise the same type of societal issues such as synthetic biology.



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