**Deliverable D2.1**

# Report on the expert workshop "Contemporary experiences with societal engagement under the terms of RRI"

| | |
|---|---|
| Grant Agreement | 665947 |
| Project Acronym | PROSO |
| Project Title | Promoting Societal Engagement under the Terms of Responsible Research and Innovation (RRI) |
| Topic | GARRI-1-2014<br>Fostering RRI uptake in current research and innovations systems |
| Project website | http://www.proso-project.eu |
| Starting date | 01 January 2016 |
| Duration | 26 months |
| Deliverable due date | 31 May 2016 |
| Date of submission | 10 June 2016 |
| Dissemination level | Public |
| Nature | Report |
| Document version | Final |
| Work Package | WP2 |
| Lead beneficiary | Austrian Academy of Sciences, Institute of Technology Assessment (OeAW, ITA) |
| Authors | Anja Bauer, Alexander Bogner, Daniela Fuchs (all OeAW, ITA) |
| Internal reviewer(s) | Marion Dreyer (Dialogik), Emily Porth and Lada Timotijevic (Univ. Surrey) |

The project is financed by the European Union's Horizon 2020 Research and Innovation Programme under Grant Agreement no 665947 and runs from January 2016 to February 2018.

## Content

# 1. Introduction

Responsible Research and Innovation (RRI), the European Union's governance approach aimed at aligning research and innovation with the needs and values of the European society, receives increasing attention. Although there is no unanimous definition of RRI, **societal engagement**, i.e. the involvement of all societal actors including civil society organisations and citizens, in research and innovation processes is considered a **core element of the RRI approach**.

This deliverable reports about the **expert workshop** "Contemporary experiences with societal engagement under the terms of RRI" that was held **at the Austrian Academy of Sciences on 11 May 2016**. The expert workshop is part of Work Package 2 of PROSO that aims at clarifying the conception of RRI in regard to the requirements for societal engagement. While stakeholder and citizen participation in science and technology is certainly not new, key tenets of RRI such as co-responsibility, responsiveness and inclusiveness, pose distinct challenges for the dialogue between science, society and politics. For example, in the context of newly emerging technologies, societal engagement is no longer identical with concerned citizens' protest; rather, it is increasingly associated with forms of 'invited participation', i.e. participatory procedures designed and organized by experts with participants being actively recruited. Against this background, the **purpose of the workshop was to discuss how societal engagement should be (re)conceptualized in the context of RRI**. Specifically, the workshop aimed to

- specify the basic requirements for societal engagement under the terms of RRI;
- learn from current experiences with societal engagement under RRI in Europe;
- draw comparisons to other approaches of participation in S&T governance.

Altogether **18 experts participated in the workshop**, including academic scholars involved in the conceptualization and advancement of RRI, scholars from the area of Science and Technology Studies (STS), representatives of funding agencies in Austria, The Netherlands and the UK as well as several members of the PROSO project team (see Annex).

The **workshop was held in two sessions**, each addressing these issues with a different focus: The first session dealt with the conception of and requirements for societal engagement initiatives or events in terms of formats, involved actors and outcomes. The second session addressed the role of societal engagement in research and innovation processes and governance.

The workshop was recorded with the permission of all participants and partly transcribed. Subsequently, the single statements were clustered along the main themes that were discussed during the day, providing the structure for this report: **Chapter 2** provides a short overview on the main projects and initiatives that served as reference points for the statements of participants. **Chapter 3** summarizes the debates around the requirements for societal engagement in terms of

forms and procedures, particularly in terms of the notion of engagement as two-way deliberation and engagement as invited participation. **Chapter 4** addresses the different functions and values that participants ascribed to engagement. In **chapter 5** we report about the participants' views on the questions of a) who should be engaged and b) what are the motivations for participation. **Chapter 6** revolves around the question of what barriers in the science system should be overcome to normalize engagement in research and how. **Chapter 7**, in order to address the requirements for societal engagement under the terms of RRI, summarizes the debate on the transformative potential of the RRI approach for research and innovation governance. **Chapter 8** provides some conclusions summarizing the main insights from the workshop; we point to the remaining open questions and reflect on the implications of the discussions for the work in the project PROSO. In the **Annex** the reader can find the list of participants and the agenda of the workshop.

## 2. Experiences with societal engagement

With the invited experts the workshop succeeded in gathering a wide range of experiences with RRI and societal engagement across Europe. One group of experts reported about the insights and results of various **EU-projects** that addressed the **conceptual and practical challenges of RRI** from different perspectives: **Stefan Kuhlmann**, University of Twente, told about the recently finished EU project **ResAGorA** (Governance framework for Responsible Research and Innovation)[1] that dealt with RRI and the governance of science and technology. The project resulted in the development of a meta-governance framework, the so-called Responsibility Navigator[2] that outlines ten principles for RRI, including inclusion, moderation, deliberation, modularity and flexibility, subsidiarity, adaptability, capability, capacity, institutional entrepreneurship, culture of transparency, tolerance and rule of law (Kuhlmann et al., 2016).

**Robert Gianni** from the Université de Namur presented insights from the EU project **GREAT**[3] (Governance for Responsible Innovation; 2013-2016) with a focus on unpacking the notion of RRI, participation and the concept of responsibility. Robert Gianni told about the insights of the projects into the preconditions and requirements for societal engagement in regard to knowledge production and highlighted a reflective approach towards the concept of responsibility.

Another EU funded project that featured prominently in the workshop was **RRItools**[4], represented by **Ilse Marschalek** from the ZSI-Centre for Social Innovation, Austria. The project (2014-2016) developed a set of digital resources to advocate, train, disseminate and implement RRI. Nineteen "RRI Hubs" were created that are responsible for training in the use of these tools, advocating policy

[1] See http://res-agora.eu
[2] See http://res-agora.eu/assets/Res-AGorA_Responsibility_Navigator.pdf
[3] See http://www.great-project.eu/
[4] See http://www.rri-tools.eu

makers at national and regional level, and spreading the concept of RRI. Besides these three projects participants made references to a range of further EU projects dealing with societal engagement in the context of emerging technologies such as nanotechnology (**NanOpinion**[5]), neuro-enhancement (**NERRI**[6]) and synthetic biology (**SYNENERGENE**[7]).

**Martina Merz**, University of Klagenfurt, added an outside view to these concrete experiences in RRI-projects. From an **STS perspective** she critically probed the presented conceptions of RRI and societal engagement and pointed to questions concerning the representation of the public, hidden asymmetries and power in engagement as well as the relation between engagement and democracy. Drawing on the experiences made by STS scholars in promoting participation, she cautioned social scientists against an overly normative orientation towards RRI and engagement.

Beyond these conceptual and empirical explorations of RRI and societal engagement from a scholarly perspective, the workshop also captured the quite varied approaches and experiences of funding agencies in Europe. **Jenni Chambers** from the Research Councils UK (RCUK) reported about the **efforts of the seven Research Councils to foster public engagement with and in research**. In the UK the call for and implementation of public engagement with research has been largely conceptualized in practice around the impact agenda (namely the inclusion of impact in the Research Excellence Framework and the RCs Pathways to Impact) rather than RRI (though also see EPSRC's RRI framework and BBSRC led synthetic biology dialogue referenced below). Alongside collective interventions through RCUK, each Council differs in the support offered for researchers' engagement. Since 2008 the RCs along with the UK HE (Higher Education) funding bodies[8] and the Wellcome Trust[9] have funded the **National Coordinating Center for Public Engagement** (NCCPE)[10] that provides support and advice for universities and individual researchers across sectors. Another key initiative of the UK research funders was **the Concordat for Engaging the Public with Research**[11] that outlines principles for engagement that are expected to be met by institutions receiving funding. Another important institution for the advancement of public engagement was **Sciencewise**[12] with which the Research Councils collaborated on many engagement processes. Through all these institutions, measures and frameworks the Research Councils aim at sending a strong signal to the academic world that public engagement with research is important and should become a normalized practice for research

[5] See http://nanopinion.eu/
[6] See http://www.nerri.eu/eng/home.aspx
[7] See https://www.synenergene.eu/
[8] Specifically the Higher Education Funding Council for England (www.hefce.ac.uk), the Science & Technology Facilities Council Scotland (www.stfc.ac.uk), the Higher Education Funding Council for Wales (www.hefcw.ac.uk) and the Department for Education Northern Ireland (https://www.education-ni.gov.uk/)
[9] See https://wellcome.ac.uk/
[10] See www.publicengagement.ac.uk
[11] See http://www.rcuk.ac.uk/pe/Concordat/
[12] See http://www.sciencewise-erc.org.uk/

institutions with researchers considering engagement throughout the research lifecycle, not only as a dissemination activity once research concludes.

**Jack Stilgoe**, University College London, added to these examples and experiences of the UK in public engagement and RRI over the last decade. He particularly stressed the importance of **the 2010 Synthetic Biology Dialogue** that widely serves as a model initiative for public engagement in early technology development.[13] Moreover, Jack Stilgoe advised **the UK's Engineering and Physical Sciences Research Council (EPSRC)**[14] on the governance of emerging technologies. The EPSRC's RRI approach – AREA[15] (anticipate, reflect, engage and act) is conceived as the most ambitious reference to RRI among the seven Research Councils.

**Jasper Roodenburg**, as representative of the **Dutch funding agency NWO** (Netherlands Organisation for Scientific Research), presented the **MVI Responsible Innovation programme**[16] that has been set up in 2008 in collaboration between Universities, NWO and several Dutch ministries. The Responsible Innovation programme aims at funding research that has a benefit for society and at investigating the potential ethical and societal issues of an innovation at an early stage. In order to do so projects funded by the programme are not only interdisciplinary, involving humanities, social sciences as well as natural and technical sciences but also always include a valorisation panel consisting of (potential) users supporting the researchers to take societal needs into consideration during the research process. Besides the experiences with the Responsible Innovation programme, Jasper Roodenburg also touched upon a recent participatory process to define the **Dutch National Science Agenda.**[17] The process invited citizens to send in questions they perceived as important to be addressed by research which were subsequently clustered and translated into 16 roadmaps addressing the most pressing issues in the next couples of years.

While both the UK and the Netherlands can be seen as leading countries in the implementation of RRI and the advancement of public engagement with science, **Austria** takes a more distant stance towards the RRI concept. The main research funding agency, **FWF-Der Wissenschaftsfonds**[18], has developed programmes and mechanism targeting some of the dimensions of RRI (particularly citizen science, gender, open science), yet is still unsure whether and how to adopt RRI as a comprehensive framework. In this context **Falk Reckling** particularly raised the question whether RRI is new at all and in what sense it would provide added value beyond already existing frameworks, programmes and measures.

[13] See http://www.bbsrc.ac.uk/engagement/dialogue/activities/synthetic-biology/
[14] See https://www.epsrc.ac.uk
[15] See https://www.epsrc.ac.uk/research/framework/area/
[16] See http://www.nwo.nl/onderzoek-en-resultaten/programmas/maatschappelijk+verantwoord+innoveren
[17] See http://www.wetenschapsagenda.nl
[18] See https://www.fwf.ac.at/en/

# 3. New forms and procedures of societal engagement

With the basic idea of RRI to make research and innovation more socially desirable and ethically acceptable, societal engagement processes face new requirements and challenges in terms of actors involved and outcomes expected, as well as participation formats and the design of procedures. To specify the core requirements for societal engagement the workshop participants discussed (3.1) the understanding and practice of societal engagement as two-way deliberation and (3.2) the current dominance of different forms of invited participation in the field of emerging technologies.

## 3.1 Societal engagement as two way deliberation

Participants widely agreed that **the term engagement is rather imprecise** and characterized by interpretive flexibility used differently by actors in science and innovation systems. While some participants embraced the flexibility as it provides opportunities to fill the concept with a more ambitious agenda, others stated that the interpretive flexibility might be problematic as it leaves the room open for all kind of engagement or dialogue activities that do not necessarily meet the requirements of RRI.

In order to specify the idea and concept of societal engagement under the terms of RRI, participants started from the commonly held assumption that **societal engagement should not be restricted to science education or one-way communication** (according to the traditional and often criticized deficit model) – even though science education and information, respectively, may be a basic requirement and an integral part of various participatory activities. From this point of view, societal engagement may be an umbrella term for different ways of involving people in research and innovation, which provides opportunities to reflect upon how to integrate various levels and forms of engagement.

In this context, the question was raised how to deal with **power relations in the context of RRI**. Even in the case of two-way deliberation we have to be aware that there is a power imbalance between the organisers of participatory activities and those participating in a dialogue. In setting the agenda and inviting participants, organisers determine how to deal with the issue at stake and, thereby introduce a certain framing that defines the deliberation. A strong emphasis on transparency is needed in order to make the interests involved and the framing introduced more explicit. By unveiling the hidden agenda of each perspective represented in the procedure and by providing relevant knowledge as a basis for deliberation participation processes might reach the level of a second order reflexivity.

Each kind of institutional participation produces effects of exclusion through **the focus on particular aspects, actors and arguments**. To avoid an overt asymmetry build in by pre-framed deliberation

processes, it might be helpful not to focus on the usual aspects of risk and ethics but to explicitly deal with the issue of framing. The starting issue of such kind of engagement might be: How do we want to talk about new technologies? Which kind of framing or which perspective do we prefer? The CIVISTI[19] method may be a starting point for further methodological discussions (Gudowsky et al., 2012). All participants agreed that such **experimental formats work well if there is a local problem** that everyone understands. However, the British nanotechnology debate showed that most people did not understand what nanotechnology is. As such, it is hard to debate when there is **no or only little knowledge about the subject**. Focusing on the UK experience, all of the public dialogues took a scientific framing which massively hyped the technoscience area and were soon found to be insufficient since the public favoured different approaches towards the discussion than experts. This experience resulted in the question of whether you could start with something different like a social framing.

Taking limited resources into consideration, some participants argued that it may be helpful **to restrict engagement initiatives to particular areas** or issues where the layperson's input might be of increased relevance. There may be no need for public engagement evenly across all fields of research. Other participants argued in favour of involving the public throughout the research process without restricting public engagement to particular research areas. They advocated the continuation of exploring **the use of RRI for the innovation system as a whole** based on different forms of engagement, be it information only or deliberation processes.

Despite some dissent, all participants agreed on the necessity to organize engagement events in a sustainable way. That means, **societal engagement should not only take the form of single events** (or dissemination activities) at the end of the research project; rather, institutional actors from science policy have to find ways to include the public in shaping research priorities and areas in which they focus their funding. Currently, RCUK tries to meet these basic requirements for engagement. In addition, there is a need **to normalize engagement as a two-way interaction rather than simple communication in the realm of research**. RCUK have already initiated training programmes around engagement practices in order to sensitize researchers for the two-way aspect and undertake work to make the cultures in research institutions more supportive of public engagement with research[20].

Knowledge is crucial in every kind of engagement initiative. Participants stressed that especially in regard to emerging technologies that are hardly linked to the people's lifeworld and every-day experiences, participants have to gain a **certain stock of knowledge in order to be capable of**

[19] Citizen Visions on Science, Technology and Innovation, see also: http://www.civisti.org/
[20] See http://www.rcuk.ac.uk/pe/Embedding/

**providing valuable input**. From this point of view, science education or similar informational activities are necessary requirements to raise public awareness for the issue at stake. Without basic information there is little hope for meaningful participation. Another challenge is the **integration of different sorts of knowledge**. To fruitfully deal with the variety of disciplinary paradigms and different aspects raised transdisciplinary engagement is pivotal.

## 3.2 Societal engagement as invited participation

In the context of RRI, the notion of co-responsibility conveys the idea of mutual understanding and rational deliberation. Actors are expected to leave their traditional (mostly antagonistic, interest-or world view-driven) roles and to open up for all relevant aspects associated with the entire innovation process (e.g. companies reflecting beyond immediate market competiveness and NGOs reflecting beyond risks). Such an understanding of **RRI clearly favours invited, 'orderly' deliberation over uninvited protest-like engagement forms**. While some may welcome this as a better, more rational way to address controversial technologies, others may argue that such a non-emotional or even 'sterile' debate conveys the illusion of conflict-free innovation while postponing conflicts to a later point in time. Hence, the role of 'uninvited engagement spaces' (such as the blogosphere), political activism, emotions and passion in RRI needs to be further explored.

Some participants argued that societal engagement under RRI is conceptually confined to invited formal deliberation processes. To be engaged, in other words, means that the (passive) public is waiting for scientists and participation practitioners to engage them. In addition, **RRI is at risk of being replaced or at least dominated by approaches aiming at educating the public**. Referring to NanOpinion, an EU funded project that organized various public communication events on nanotechnology, one participant mentioned that even though some innovative forms of engagement were introduced, activities with a focus on one-way communication prevailed in the project. This is somewhat paradoxical because throughout the last decades a variety of methodologically innovative and politically ambitious engagement forms were established such as participatory technology assessment, transdisciplinary research or participatory action research. The latter was the most fruitful initiative since people could get engaged with science based on concrete or regional problems people were really affected by. People did not have to be invited to participate but were really keen to become engaged in collaboratively problem-solving. This 'lifeworld' approach to participation highlights a fundamental difference to contemporary engagement activities under the header of RRI. Today, **due to the lack of bottom-up initiatives, top-down approaches prevail**. This dominance of top-down participation in the context of RRI results, to a certain extent, from the fact that engagement exercises are going 'upstream' (to the early phase of innovation). There might be the danger that one rationale (i.e. the scientific one) is taken as standard of how to deliberate on

these subjects. In consequence, bottom-up participation could be considered to be more emotional and irrational and ultimately may become delegitimized.

Soon the question of how to deal with disagreement and permanent dissent in participation processes was raised, as these processes are often oriented towards consensus-building. In fact, a lot of technology issues today are deeply conflictual. Against this background, it is highly relevant to reflect upon how to make sure that **conflicts are not just excluded and how to deal with them in a productive way.** In regard to the quality of deliberation, we should not see communication as a marketing strategy; rather, we should understand it as a method to take into account two potentially clashing perspectives, or as an attempt to adopt a narrative perspective in order to express things that are sometimes not really explicable in rational terms. Following this line of a **'dissent approach'** we should also be able to bring "uninvited" reasons, claims, and needs to the fore – all the contradictions and critique that are societally valuable because they contribute to societal change, development and progress.

# 4. Functions of societal engagement

Throughout the workshop participants emphasized the value and benefits of societal engagement and simultaneously demanded to further reflect upon its specific purposes and functions. What is engagement expected to add to research and innovation processes? Such a reflection was not only demanded for scientists' own conceptual clarification but also to show the value and benefits of engagement activities to other actors in the research and innovation system who, so far, might be sceptical towards increasing engagement activities. The following discussions revealed that the **relationships between societal engagement and RRI remain unclear,** and are even contested. Participants attributed different roles to engagement in reference to the RRI concept: it is a key dimension, a precondition, a first step, and a means for achieving RRI. These varying roles are closely connected with **different expectations of the value and function** of increased engagement activities in research and innovation governance.

By and large, **two ideal-typical positions** evolved during the workshop. A part of the group argued that societal engagement is a **suitable means for achieving RRI** but not a value in itself ("functional position"); another part considered societal engagement to be an **intrinsic part of the RRI concept** assuming that without engagement R&I could not be called responsible ("normative position").

## 4.1 Informing R&I processes

***"Functional position":*** According to this position, research and innovation should become responsive to societal needs and values. Engagement in this context serves to **inform R&I processes** to set and influence the trajectory of research and innovation accordingly. The expectations of what societal

engagement adds specifically to these processes are divers: They range from more diverse and **better knowledge** provided by the public, industry or societal organisations to insights into the **specific values and concerns** of citizens. The Dutch NWO-MVI programme is a striking example for this approach in which the aim to innovate responsibly is in the centre and societal engagement is perceived as one means to appropriately reach this aim. The NWO-MVI program draws on the idea to join efforts between academia, industry and societal groups. In this case engagement has the particular role to **mobilize productive resources**.

RCUK promote engagement as a means to **enable societal impact of research and research relevance.** Engagement can also be perceived as particularly valuable when dealing with **emerging technologies** such as nanotechnology or synthetic biology (i.e., those technology areas that people may lack information about and which may raise concerns). Engagement in this context serves to bring people's concerns to the fore, to jointly deliberate and to explore and recognize different perspectives. The benefit for research funders and research organisations is that they are **informed early on about the public opinion and particular concerns or even growing resistance** to emerging technologies. As a consequence, decisions such as funding priorities might be adapted to reflect a variety of concerns and perspectives. For RCUK, this approach differs considerably from previous approaches in terms of making funding decisions with the recognition that not all knowledge and values sit purely within the academic sphere. Society can bring a lot to these processes, both in terms of their **specific knowledge and the frames and questions** that they raise.

Softening the expectations towards engagement one workshop participant suggested that public engagement in general does not serve to generate answers for R&I decisions, but rather delivers a set of valuable questions that characterize public concerns about emerging technologies. In sum, according to the functional perspective, engagement is perceived as an important and valuable mean to secure responsiveness in research and innovation, yet in principle responsible innovation could be possible without engagement.

## 4.2 Changing the science-society relation

***"Normative position":*** This position is based on an understanding of **engagement as an intrinsic value, a normative goal in itself**. Following this position, engagement becomes an indispensable part of RRI, reflecting a **paradigm shift in the science-society relations**. The public or civil society are not primarily engaged with because of their knowledge, perspectives or values, but because their engagement in science and technology reflects a **democratic principle**. This democratic function of engagement seems to be of less significance in the political discourse and actual implementation of RRI through funding agencies and other R&I institutions, but it nevertheless plays an important role in some contexts, such as academic debates.

A less ambitious variant of the normative position can be found when engagement serves the **legitimation of public funding**. A participant observed that programmes for public engagement are almost exclusively directed to publicly funded science, raising the question of whether the public and other societal actors should have the opportunity to participate in decision-making because research is publicly funded. This legitimizing function of engagement is expected to become more important as the role of public funding in research is increasingly being questioned.

# 5. Participants and motivations

RRI starts from the presupposition that we live in a pluralist, differentiated and highly diverse society. As a consequence, what is considered to be socially desirable and ethically acceptable is subject to individual reasoning and preferences – and, therefore, to be potentially contested (Kuhlmann et al., 2016). To adequately take societal needs and values into account, RRI calls for **inclusiveness**. However, what inclusiveness actually implies remains ambiguous, sometimes referring to the involvement of a broad and diverse set of societal actors including civil society organisations (CSO), users and citizens, sometimes pointing to different perspectives, values, knowledge sources or material interests (Owen et al., 2012). During the workshop the issue of inclusiveness of engagement processes was discussed along two questions **a) who to involve** and **b) how to motivate different actors to participate** and **deal with a lack of willingness to engage**.

## 5.1 Who to involve?

Discussions on societal engagement may easily circumvent to explicitly state which actors or actor groups are expected to be involved in engagement processes. Concepts such as society, stakeholders or the public remain quite abstract. When a workshop participant raised the question of who should be invited to engage, **who represents society and who is the public**, the subsequent debate revealed different foci and experiences.

As explicitly mirrored in the term **public engagement**, the general public is often a main addressee of engagement activities, such as those of RCUK supported researchers. However, as several participants noted, the term “public” in itself remains **unclear** and may even **become problematic**. Experiences in previous RRI projects, such as RRITools, have shown that stakeholder groups such as policy-makers or educators are comparatively easy to define, but the definition of what is commonly called “the public” may turn out to be difficult and vague. From an STS perspective, the construction of the public becomes problematic due to the **particular expectations and attributions** bound to the term. When public engagement explicitly targets unorganized citizens (excluding organized stakeholders), attributions such as neutrality, closeness to everyday life and the lack of specific knowledge or expertise on the issue at stake are implicitly or explicitly constructed. Such

representations require critical reflection because they ignore or at least **underplay the variety in expertise, situations and perspectives** represented in citizen panels.

Engagement under the terms of RRI does not only refer to the unorganized public but also includes organized representatives of society such **as civil society organisations (CSOs)**. For example, the Dutch **NWO-MVI** program strongly builds on societal organisations rather than the public. In each project all potential stakeholders are involved in a valorisation panel and meet several times throughout the research period. Involved organisations are directly **concerned with the technology under consideration** in the project, but also represent groups that might be affected by those technologies in the future. While the Dutch research funding system has deliberately opened up towards societal actors over the last decades, **Germany** seems to remain **reluctant** towards the engagement of science with civil society organizations. German funding organizations strongly fear the **politicization** of research through the involvement of CSOs, particularly when dealing with potentially controversial technologies. However, the German funders strongly demand and support the collaboration between academia and industry.

Some participants suggested **engaging artists** such as writers and filmmakers with science and innovation issues. From this perspective, artists are perceived as potential **experts or explorers of the future** that creatively play around with imaginaries and imaginations, particularly when the research or technology at stake is still far away from everyday experiences. In this way artists may serve as important intermediaries between science and the public.

While the workshop debate mainly focused on the public and societal actors, some participants critically asked who on the **research side** should get engaged. First, participants emphasized that the notion of science not only refers to the **natural sciences** but also includes **social sciences and humanities**. Second, the RRI discourse and engagement activities by the research funders predominantly address **publicly funded research** in universities or similar research organizations although research and innovation increasingly take place in very different locations (e.g. industry or venues such as fab labs). Yet, according to the observations of participants, so far **industrial research** is hardly included in the call for engagement. This may be due to the fact that research funding agencies are a main driver for societal engagement (see section 7.2).

## 5.2 How to motivate?

Even when research organizations and funders are willing to engage and be clear about with whom, it is not guaranteed that the targeted actors are willing to participate. Several workshop participants agreed that the **motivations** of the public and CSOs to be engaged are, so far, **underexplored**. They asked the social scientists to pay more attention towards **factors that might influence the willingness** to participate (e.g. timing of the event, urgency of the issues at stake or compensation).

**The timing of engagement** and the **development stage** of the research or technology, respectively, were suggested as important factors. Experiences from the project NERRI (EU-FP7) dealing with the issue of neuro-enhancement suggest that it might be difficult to identify and engage with CSOs when the technology is hardly developed and still lacks public attention. Activities of CSOs or concerned citizens often start when the research or technology is more advanced. This observation points to a **timing dilemma** for engagement in the context of RRI. RRI aims at invited engagement (see section 3.2) at an early point in research and innovation, yet at this early stage it might be difficult to find CSOs (or citizens) willing to participate because the debate is not a salient issue. When technology questions become salient, however, development may be rather advanced and critical CSOs might react with forms of uninvited participation such as protests. To address this dilemma it was suggested that engagement activities should not focus on problems around technologies but rather **address societal problems** as reflected in the strong reference to the Grand Challenges in most RRI conceptions.

CSOs, particularly those with a traditionally critical stance towards emerging technologies may also refuse to participate because their **organisational interests** might collide with the interests of the event organisers. Engagement with research or even industrial actors might entail the **risk of being used as a source of legitimation and of losing control over the discourse**, particularly when the framing of the engagement activity is outside the CSOs' influence (see also 3.1). Moreover, the consensus-orientation of engagement (see 3.2.) might make it difficult for CSOs to communicate their efforts and impacts to their clientele. Protest-like engagement, in contrast, very clearly demonstrates the activities and standpoints of CSOs. In this regard, the question emerged whether the lack of engagement or disengagement could also be interpreted as **a sign of critique**.

Representatives of the research funding agencies highlighted that it is important **to ensure mutual benefit for both researchers and CSOs.** CSOs should not be used as a free or cheap resource to capture different views; rather, engagement initiatives need to contain some reciprocal value for them. Since what might be considered as "mutual benefit" remains vague, one participant also demanded that CSOs be **financially compensated** for their engagement.

In regards to the motivations and **willingness of the unorganized public** to engage with science the recent survey **"Public Attitudes to Science 2014"** (Castell et al., 2014) provides first insights for the UK. The survey shows that citizens overwhelmingly **support** the general idea that the public should be engaged in science in some way, yet they are considerably **less willing to participate themselves**. A participant stated that this result should not be surprising; as voter turnout in elections demonstrates, mobilization is already difficult when it comes to very topical and tangible questions. Hence, when dealing with potentially controversial issues like synthetic biology, it cannot be

expected that people will suddenly become overly enthusiastic to dedicate their time to a dialogue event.

The reference to elections elicited the question whether, in analogy to the obligation to vote in some countries, it should become **mandatory for citizens to make a contribution to science**. Such a strong participatory approach would assign responsibility to everybody to become a "science citizen". While this idea was widely rejected by participants as it allocates too much responsibility towards citizens, it guided the debate towards the issue of **democracy and the role of public deliberation** in a country's political system. Depending on their familiarity with participatory governance approaches, citizens may feel more or less entitled to engage with science or willing to do so. Hypothetically, the more a political system relies on **representation and delegated power**, the less inclined citizens will be to become engaged. It is characteristic for representative democracies to discharge responsibilities, implying that - also in the case of R&I decisions - the delegation of responsibilities to particular actors (elected politicians) or organisations (e.g. CSOs) might be a legitimate strategy. On the other hand, this observation suggests that the successful normalization of public engagement with science does not only rely on adequate incentive structures but may simultaneously depend on **changes in both the political culture, and in the scientific culture**. Such change does not only refer to increased willingness of citizens to engage in public deliberations but also to research and innovation **institutions being willing to listen**. One participant mentioned that, at the moment, many R&I institutions are rather feeling forced into engagement and fundamentally lack willingness to engage with the public. Hence, the question of how to make engagement a normal part of research becomes a central. This is discussed in the following chapter.

# 6. Engagement and the research system

A main discussion revolved around the question of whether scientific institutions and researchers are capable of meeting the call for societal engagement, and which changes and respective support mechanisms are needed to successfully implement a wider engagement in research practices.

## 6.1 Societal engagement as burden to science?

While participants generally recognized that the idea of **science as an autonomous system** might conflict with the **demand to engage and align with societal needs,** the participants differed in their views on how to deal with the call for engagement within institutions.

One group of participants strongly called for the **normalization** of societal engagement in science. Engagement with the public or stakeholders should become an equally important part of research practices as, for example, publications; in this context, engagement does not only refer to dissemination activities, but spans the whole research process (see section 3.1). In this perspective,

RRI and its call for societal engagement serve as a driver for an overdue **transformation of scientific culture.**

Another group of participants was more sceptical. They raised the concern that the call for engagement adds to an already high number of **requirements** for individual researchers (e.g. breakthrough research, interdisciplinary or transdisciplinary research, publications)**.** Participants emphasized that the main mission of research still is to ensure **scientific excellence** as measured by citation indices and that further requirements may **overextend scientists**. From a scientist's point of view, engagement activities may easily tend to turn into a burden, particularly if they are neither adequately financed nor taken into account in evaluation structures. Especially in highly competitive fields such as the life sciences, the trade-off between societal engagement and excellence was strongly feared to be a **hindrance to individual careers**.

## 6.2 Changing conditions in sciences and funding structures

While the tension between a science system focussed on scientific excellence and one based on normalized societal engagement could not possibly be resolved during the workshop, participants jointly identified a variety of **changes** that would be necessary to foster **societal engagement within the scientific community.** Individual efforts and responsibilities of researchers were appreciated, yet participants deemed frameworks and institutional conditions more crucial for a wide-spread implementation of engagement. Proposed changes at the institutional level focused particularly on (a) funding mechanisms, (b) the peer review process and (c) the university.

**Funding:** Funding agencies have a key role in fostering engagement activities in research. Through specifications in funding provisions they can define the role of engagement in publicly funded research. In this way funding agencies can deliberately create spaces of freedom from regular expectations (such as publications). The National Science Foundation (NSF) and their ten year funding strand "**Nanotechnology and Society**" served as an example. According to a participant, the millions of dollars spent in this program have successfully worked as a driver for change and helped to create a new research and interaction agenda with society. For 10 years, scientists were freed from their disciplinary context and helped changes taking place in the university. In particular, the Arizona State University (ASU) has undergone a fundamental transformation because of this funding. In the UK, RCUK have introduced **several funding instruments** specifically targeted at engagement activities. For example, RCUK allow for **follow-up funding** (to fund additional engagement activities researchers could not have been aware of at the start of the process) and **impact acceleration** (for impact generating activities which don't have to be nailed down in the time of application). The strategy of the Austrian funding agency to deal with the potential accumulation of requirements is to

**adopt the funding guidelines** every five to six years accordingly. With this strategy the agency aims to ease the application process and to avoid overloading scientists with expectations.

**Review:** The current peer review process was identified as one of the main obstacles for a successful implementation and normalization of engagement. Even if funding provisions demand strong societal engagement, reviewers often evaluate grant proposals along **scientific criteria only**. Hence, participants demanded that reviewers should consider the **extent and quality of engagement** as well as possible societal impacts of research beyond academia. In the Netherlands, the NWO recently introduced a **twofold evaluation of scientific projects** with regard to scientific excellence as well as to societal relevance. In addition to the project level, the Netherlands changed the standard evaluation protocol for research institutions in favour of societal engagement. As a remaining challenge to the proposed changes in review practices, participants mentioned fundamental difficulties in measuring the **impact of societal engagement**.

**University**: The current education and career prospects of researchers at universities are perceived as another obstacle for societal engagement. Participants observed that engagement is still not universally appreciated among university chancellors. Targeting structures and strategies of research institutions, the UK's Concordat for Engaging the Public with Research explicitly lists a range of requirements and measures, including a **strategic commitment** to public engagement that is reflected in the institutions' mission statements, the recognition of engagement activities as part of **criteria for recruitment and promotion** and sufficient opportunities for training and practical support for researchers. To establish engagement as integral part of research in the long run, **education** was considered to be crucial to **change the mind-sets of researchers,** a process for which established practices are still not fully developed.

In sum, participants observed some progress in regard to the institutionalization of engagement in the science system; however, they agreed that an ongoing long-term transition will need a lot more work and resources. In order to guarantee equal chances across Europe, a **consistent and simultaneous transformation** of national science structures was favoured.

## 7. RRI as a transformative governance tool?

To what extent and in what form does RRI contribute to a transformation of the relationship between science, innovation and society? The views of the participants differed widely: some experts perceived RRI as "old wine in new bottles" and as an increase of the bureaucratic burden restricting responsibility to a "tick-box" provided by funding agencies (sceptical position). Other participants considered RRI to be a deeply transformative approach as long as the danger of exploitation by just one certain interest can be avoided (optimistic position).

## 7.1 What's new with RRI?

***The sceptical position:*** Questioning whether RRI is **"old wine in new bottles"** is a core criticism within wider RRI discourse. Therefore, the participants discussed whether and to what extent RRI activities of the European Union simply try to bind together and re-label an already ongoing transformation of the science systems in terms of engagement, gender equality, open access or research integrity. Thus, from the perspective of research funding, the question was how to effectively proceed with (partly) overlapping activities on different national and international levels, and how to explore if RRI (compared to other approaches) offers added value. Considering the operational level of such processes, it was feared that such a variety of activities with multiple different requirements leads to an **overload of administrative tasks**, especially when requirements are not clarified to researchers and respective indicators are missing.

It also became clear that the support of the scientific community plays a crucial role for the success of programmes and approaches such as RRI. As an example, the Austrian research program Pro-Vision (similar to RRI) was mentioned: here, **scientists' reviews still focused on scientific excellence** in research proposals, while other factors were considered to be of lower priority; "excellence", as defined by some, may thus be an enemy of responsibility. So, some participants considered the researchers' dependence on the acknowledgement of the (scientific) community as a barrier to RRI and argued that even funding agencies don't stand a chance to change things. However, this point was not agreed on by the whole group.

***The optimistic position:*** This sceptical position was challenged by a group of participants who stressed the opportunity for funding agencies to **fundamentally change practices and structures in the science system** and to influence research decisions in the long-term. Some argued that science and humanities are already shaped by all sorts of agencies and **RRI may actually take some of these requirements away** (e.g. claiming intellectual property rights). So, the framing of RRI – whether it is perceived as an additional bureaucratic requirement or as a new opportunity for science – was considered to be crucial for the success of implementation: while "old wine in new bottles" was considered to be "an easy criticism", organizational re-thinking as done by agencies such as the EPSRC in the UK could open up new decision spaces. The question, whether or not engagement activities are considered as part of scientific reputation was seen as one part of this decision, where the EPSRC decided to broaden the frame before going into research.

While the vague definition of the term RRI is sometimes criticised, this wide interpretational scope allows the concept to be applied to very different things in very different contexts. Therefore, such extremely **flexible concepts such as RRI** or "engagement" – given such an inclusive approach is taken explicitly - have the **potential to advance some sort of agenda through their political reality**. The

role of RRI, one participant argued, may be to clarify existing tensions within governance, to become aware of the political economy of its use and thus, to actively engage with the barriers and limits of RRI. For this, it was considered essential to further elaborate on how RRI is going to challenge R&I systems and make a difference, rather than being exploited for "business as usual" or to cover for the further "neo-liberalisation" of research and innovation.

## 7.2 Funding agencies as agents of change?

In the discussion about how to effectively change the scientific system by using opportunities offered by approaches such as RRI, funding agencies were considered main agents of change given their options of influencing attitudes towards RRI in general, but also towards (societal) engagement in particular contexts. Against this background, the question was raised as to whether **such agencies should gain this kind of agenda setting power**. This was questioned from a democratic perspective, and one participant asked whether the agenda setting power should lie with other institutions such as the parliament or a particular ministry. Especially in consideration of the dependency of research on third party funding in most European countries, it was queried whether research funders should hold so much power to change the research agenda. The discussant called for transparency and reflexivity about funding requirements and a monitoring of effects.

Contrasting with this opinion, others appreciated the **pro-active approaches of funding agencies**, provided there is sufficient transparency about the agency's own role. In this context, one participant renewed the notion of a meta-governance framework that allows structuring this kind of constructive debate without interfering in a prescriptive way top-down. In the context of Grand Challenges, a number of "new" actors have entered: while they are not yet considered to be of importance to the innovation discourse, they have recently started to gain quite a bit of power in structuring RRI debates and changing agendas of science and technology without any public influence (e.g. large industries or philanthropic organisations such as the AIDS foundation). Thus, the **question of what it means to be a "responsible agency" shows an ongoing transformation** where society has to decide whether, how, and with whom to allow for a discourse on this. One participant referred to the discourse on "science and transition" in the Netherlands which has been going on for three years and revolves around the question of appropriate forms of science and technology governance.

## 8. Conclusions

The expert workshop brought together a variety of academic experts and representatives from funding agencies to discuss how societal engagement should be (re-)conceptualized in the context of RRI. Today, various organizations in the research and innovation systems in Europe take an interest in assuring that research and innovation are conducted in a responsible way. However, the **interpretation of what counts as "responsible" is contested in a pluralist society** and widely depends on the political context, the particular governance system and the organizations involved. RRI should be interpreted as a **flexible framework** transgressing the conventional focus on technology questions, particularly those of risk and ethics, rather than a clear novel governance paradigm.

In regard to the role of societal engagement in RRI, **two options** or perspectives were established during the workshop. Some participants considered societal engagement to be a fundamental and **indispensable requirement for responsible innovation,** since it represents a new – and more open – relationship between science and society; others preferred to understand societal engagement as a helpful tool **to effectively implement the idea of RRI**. In this regard, the risk of using engagement for instrumental purposes such as acceptance seeking or persuasion demands more attention. Finally, it remains unclear whether and how societal engagement has an actual influence on research and innovation processes. Currently, the **ways in which governance structures are linked with engagement initiatives appear to be insufficient**.

In regard to the workshop's main theme of "Contemporary experiences with societal engagement under the terms of RRI", the invited experts identified four aspects PROSO will have to deal with in further detail:

1) **"The question of invited participation"**: Societal engagement in the context of RRI is tantamount to a kind of **organized, invited and top-down initiative**, i.e. a form of participation initiated and organized by experts 'from outside'. This participation often takes the form of a project with strong pre-determination of certain factors including number of participants, time period and issue framing. The invited experts especially pointed towards the **danger of conflicts being marginalized or even neglected**. This might be one of the main challenges for the promotion and organization of societal engagement under the framework of RRI: to ensure that deliberation **processes are set-up in a way that enables controversies and disagreement,** as well as free and non-hierarchical reasoning in order to arrive at solutions and recommendations considered to be superior by a majority of participants. Today, even though there is a need for channelling controversies and antagonistic positions towards productive deliberation, it is still unclear how to deal with fundamental dissent on societal needs and ethical aspects of R&I.

2) **"The need for deliberation":** The notion of a **two-way deliberation** is central to societal engagement under RRI. From a normative perspective, engagement should not only include the communication of the activities and contents of research to the public and stakeholders but, more importantly, should allow for invited citizens, CSOs or other stakeholders to contribute their knowledge, experiences and perspectives, to raise urgent questions and concerns about the direction of research and innovation. The notion of two-way deliberations also relates to the dominating rationale for engagement in the context of RRI, i.e. **engagement as a means to ensure the responsiveness** of research and innovation processes. Considering these normative claims, PROSO should have a closer look at the practices of societal engagement in different research areas. The empirical research carried out under **PROSO especially should focus on the barriers and hurdles to non-hierarchical two-way deliberation**.

3) **"The transformation of science":** Referring to a variety of experiences from different countries, experts highlighted that the **current structures and dynamics of scientific culture are often counterproductive to societal engagement**. Moreover, under contemporary incentive structures the claim for scientific excellence may collide with the demands of RRI to open science for societal co-creation. To successfully implement and normalize societal engagement, changes in scientific institutions and incentives structures are needed. In this regard, if taken seriously, RRI could become a **transformative force** for the research and innovation system. However, we should not disregard some experts' concerns elicited by this transformation process; taking RRI seriously might result in a new way of doing and assessing science which **might endanger scientific autonomy**. In the context of its case studies in WP3, PROSO should be aware of the possible tensions arising from the call for societal engagement and the need for preserving the freedom of researchers to tackle societally relevant problems according to established scientific methods and standards.

4) **"The variety of manifestations of RRI across Europe"**: According to our invited experts, PROSO should pay high attention to the potential **differences in political cultures across Europe**. While traveling and diffusing through a range of countries and institutions, the RRI approach gets interpreted and implemented differently. Indeed, discussions at the expert workshop demonstrated how otherwise similar European countries show very **distinct approaches to RRI**. The Netherlands and the UK have made experiences with the implementation of RRI or similar concepts for over a decade now, and the UK in particular attempts to position itself as frontrunner of public engagement with science. Austrian and German funders and governance actors, in contrast, seem to be more reluctant in embracing RRI and public or societal engagement due to various reasons. As a consequence, the PROSO project will specifically consider **the politico-cultural context of societal engagement in R&I.**

## Literature

Castell, S, Charlton, A, Clemence, M, Pettigrew, N, Pope, S, Quigley, A, Shah, JN, Silman, T, 2014. Public attitudes to science 2014. London: Ipsos MORI Social Research Institute

Gudowsky, N, Peissl, W, Sotoudeh, M, Bechtold, U, 2012, Forward-looking activities: incorporating citizens´ visions, *Poiesis & Praxis*, online first: 15/11/2012,

Kuhlmann, S, Edler, J, Ordónez-Matamoros, Randles, S, Walhout, B, Gough, C, Lindner, R, 2016. Responsibility Navigator. Karlsruhe: Fraunhofer Institute for Systems and Innovation Research ISI

Owen, R, Macnaghten, P, Stilgoe, J, 2012, Responsible research and innovation: From science in society to science for society, with society, *Science and Public Policy,* 39, 6, 751-760

# ANNEX

## List of participants

| Name | Organisation | Email |
|---|---|---|
| Anja Bauer | Institute of Technology Assessment of the Austrian Academy of Sciences, Austria | anja.bauer@oeaw.ac.at |
| Alexander Bogner | Institute of Technology Assessment of the Austrian Academy of Sciences, Austria | abogner@oeaw.ac.at |
| Jenni Chambers | RC UK Executive Directorate, Public Engagement with Research, UK | jenni.chambers@rcuk.ac.uk |
| Marion Dreyer | Dialogik - non-profit institute for communication and cooperation research, Germany | dreyer@dialogik-expert.de |
| Daniela Fuchs | Institute of Technology Assessment of the Austrian Academy of Sciences, Austria | daniela.fuchs@oeaw.ac.at |
| Robert Gianni | Université de Namur, Belgium | robert.gianni@fundp.ac.be |
| Jürgen Hampel | University Stuttgart; Institute of Social Sciences, Germany | juergen.hampel@sowi.uni-stuttgart.de |
| Attila Havas | Hungarian Academy of Sciences | attila.havas@krtk.mta.hu |
| Christian Hofmaier | University Stuttgart; Institute of Social Sciences, Germany | christian.hofmaier@sowi.uni-stuttgart.de |
| Stefan Kuhlmann | University Twente, Science, Technology and Policy Studies, The Netherlands | s.kuhlmann@utwente.nl |
| Ilse Marschalek | ZSI-Centre for Social Innovation; Austria | marschalek@zsi.at |
| Martina Merz | University Klagenfurt \| Wien Graz, Department of Science Communication and Higher Education Research, Austria | martina.merz@aau.at |
| Emily Porth | University of Surrey, School of Psychology, UK | e.porth@surrey.ac.uk |
| Falk Reckling | FWF Austrian Science Fund, Austria | falk.reckling@fwf.ac.at |
| Jasper Roodenburg | The Netherlands Organisation for Scientific Research (NOW), The Netherlands | j.roodenburg@nwo.nl |
| Jack Stilgoe | University College London (UCL), Department of Science and Technology Studies, UK | sts@ucl.ac.uk |
| Lada Timotijevic | University of Surrey, School of Psychology, UK | l.timotijevic@surrey.ac.uk |
| Helge Torgersen | Institute of Technology Assessment of the Austrian Academy of Sciences, Austria | helge.torgersen@oeaw.ac.at |

**Agenda of the expert workshop**

| | |
|---|---|
| **10:00 – 10:15** | **Welcome and introduction** |
| **10:15 – 12:15** | **Session 1: New forms and procedures of societal engagement?**<br>*Inputs by Stefan Kuhlmann, Jenni Chambers, Robert Gianni* |
| **12:15 – 13:45** | **Lunch at restaurant „Inigo“** |
| **13:45 – 15:45** | **Session 2: A new role of societal engagement in research and innovation?**<br>*Inputs by Martina Merz, Jasper Roodenburg, Falk Reckling, Jack Stilgoe* |
| **15:45 – 16:00** | **Synthesis and closing** |