

Insights and reflections from National Responsible Research and Innovation Stakeholder Workshops

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As part of the European RRI-Practice project, each partner has organised a stakeholder workshop in order to assess the understanding of Responsible Research and Innovation (RRI) in the national Science, Technology and Innovation (STI) debates and discuss the practice of RRI within their own national context. This document provides four emerging key insights from an analysis of the findings across these workshops. The workshops provide a good current overview of the RRI related discourse in the different countries represented in the project and provide a basis for understanding the opportunities and challenges of putting RRI into practice.

In total 12 workshops have been conducted (in Australia, Brazil, Bulgaria, China, France, Germany, India, Italy, the Netherlands, Norway, the United Kingdom and the United States). 193 stakeholders attended across these workshops, with approximately 39% of these coming from academia; 19% from University management, administration, tech transfer and public outreach / science communication; 13% from research councils; 10% from civil society organisations; 8% from industry; 5% from government, 4% innovation agencies or national technology boards and 2% from ethics advisory committees. In general there was good gender balance across the workshops. The emphasis on stakeholders from research funding and research performing organisations reflects the projects focus: in the RRI-Practice project we work largely with public research funding/policy and research conducting organisations.

Initial findings

RRI has multiple meanings which have implications for practice

Awareness of the term RRI varied considerably across stakeholders, many having no prior knowledge of the term. However, the overall impression from the workshops was a heuristically positive disposition towards orienting national research and innovation systems in RRI terms. There were however substantial differences across stakeholders in terms of how RRI is framed. It was common for stakeholders to frame RRI intuitively, from their personal experiences and world views (e.g. in terms of research integrity), or to align it to a dominant discourse within their organizations (e.g. CSR for industry). Despite this, commonalities emerged in terms of key elements of a perceived RRI approach. Many expressed a view that scientific research and innovation should be oriented towards societal needs, be useful to society and be mission oriented. There was a need to interact with society with the aim of bringing the goals of science, innovation and society closer together and to foster better understanding of the broader dimensions and uncertainties of science and innovation in society. Stakeholders often stressed principles of inclusion, deliberation and reflection, through collaboration and participation (e.g. co-creation) and continuous, open dialogue between different stakeholders and society. They were however conscious of the potential tensions such an RRI approach

poses for extant norms of academic scientific autonomy. Openness was another common theme, evident for example in discussions advocating the opening up of institutionalized spaces for broader and more inclusive public deliberation, and, more generally, formal commitments to open access to research outputs noted by stakeholders in many countries.

The EC RRI keys (gender, ethics, public engagement, science education and open access) and the so-called AIRR dimensions (anticipation, inclusion, reflexion and responsiveness) were discussed in the workshops to varying degrees. Most institutions could readily identify national debates and ongoing activities related to RRI framed as ethics, gender equality, public engagement and open access. Science education however came across as a vague concept that requires a more detailed description. Hence it was less addressed, other than in China where it is a policy priority in terms of public education. Some saw the added value of RRI as an umbrella concept, providing a good overall framework for relating ongoing activities. Presenting these disparate activities as part of a more integrated responsibility approach appeared for many, but not all, to make sense. Others voiced concerns about how the keys were framed. Some for example recommended a broader concept of diversity that included but went beyond gender. In India, where principles of access, inclusion and equity were prominent, stakeholders advocated a broader concept of equity which not only included gender diversity but also rural – urban equality. They also advocated that open access should be a broader concept that includes not only access to research publications but also access to basic needs such as safe drinking water, healthcare and education. Others expressed concerns that societal engagement could be conducted in an empty, strategic, rhetorical way with little input into decision making. Others still were concerned that while the keys are important, a strict focus on these might risk simplifying RRI into an accumulation of dispersed concepts and activities. They stressed the need for RRI to have a more ambitious imaginary leading to systemic change, transforming norms and cultures of practice. In their view, RRI builds on important foundations (such as ELSA and technology assessment) that call for an inter- and trans-disciplinary epistemological approach that should be imaginative, creative, flexible and able to open up opportunities for innovation in the public and planet's interest. These stakeholders highlighted a risk that a narrow focus on the EC keys may draw attention away from this larger imaginary. On the other hand, some viewed the AIRR dimensions of anticipation, reflexivity, inclusion, (openness) and responsiveness as better fitting this imaginary and setting the framework for the discussion of the RRI concept.

We can therefore ask whether the keys should be positioned as preconditions or prerequisites for this broader imaginary and whether RRI should be seen as a process of development. If this is the case, the weight put on strengthening the EC keys versus e.g. the AIRR dimensions may need to be adapted to different national contexts depending on where they are on this development journey. Overall, experiences reveal that different dynamics, histories, cultures and political contexts have shaped different countries' and organisations' framing, status and activities as these relate to RRI. We see the project's main task is to contribute to improving this work where there is most need and potential for improvement within their national context.

RRI uptake in national policy and in research institutions varies considerably

In some countries (e.g. Norway, UK and Netherlands) policies and funding schemes including formal RRI elements have emerged in recent years. In other countries RRI was entirely absent in formal terms at a policy level. For some countries, the European Commission policy on RRI appeared as state-of-the-art research and innovation policy and as one to emulate. It was seen as a modern or future-oriented policy to

tackle global challenges, understand broader impacts and uncertainties and maintain research and innovation advances that are supported by society. What was clear was that the national political and cultural context presents an important macro frame for RRI in any given country. The Nordic model of tripartite cooperation was for example seen as paving the way for close dialogue between research, society, politics and innovation in Norway: here social democratic traditions of dialogue, trust and cooperation are firmly rooted. Likewise in the Netherlands, a strongly deliberative and corporatist tradition and high-trust society were perceived as providing fertile ground for RRI. For countries such as Brazil, China, and India securing social and economic development was an important macro frame for innovation: for example innovation pursued in the national interest was perceived in China as the responsible thing to do. This view was however nuanced, as there is a sense in China that the social consequences of science, technology and innovation can no longer be neglected. Nor was the political imperative for growth and productivity restricted to these countries. It was notable for example that in the UK economic growth was the overwhelming Government priority, underpinning its industrial strategy and setting the frame for innovation.. In the case of Bulgaria, the socio-economic value creation rationale clearly also applies to the production of scientific knowledge, and not only to the innovation agenda. If RRI is not in line with these national political imperatives it faces significant political challenges

It was also clear that the concept of responsibility itself does not translate well in all countries. Translated to at least some other languages, the term 'responsible' does not fit well with the intentions of RRI. It may be perceived as being too legalistic (akin to accountability), vague or unrelated to perceived RRI issues (such as open access). It is thus important that there remains a flexibility for local translations of the RRI term that best capture the main intentions of the concept.

RRI faces deeply engrained norms, organisational cultures and institutional barriers

Those who emphasised RRI as a process of epistemological, institutional and systemic change recognised the deep institutional barriers and behaviours that need to be overcome for this transition to occur. Extant disciplinary and institutional norms, values, expectations, incentives, evaluation criteria and promotion criteria were all raised as significant issues for RRI as an integrated and embedded inter and transdisciplinary approach. Researchers' current perceived role responsibilities often imply a division of labour between science / innovation on one hand and reflecting / anticipating / deliberating on societal dimensions / impacts on the other. Many researchers make assumptions about the desirability and social acceptability of their research but impacts paradoxically are perceived as being too difficult to predict without knowing the context of use and application. RRI can be perceived as posing an obstacle to researcher freedom or autonomy, a threat to established norms and role responsibilities, and adding bureaucratic obstacles that may hamper creativity, progress and innovation. While a flexible and proportionate approach was seen as being important, stakeholders also recognised the need to challenge these norms, for example discussing the need to redefine concepts of research quality, excellence and scientific robustness. They also noted that perceptions vary considerably across countries, institutions and across career levels – younger researchers may for example have a greater sensibility towards RRI. In the UK stakeholders noted that while RRI has encountered resistance in some Universities, it has been seen as being central to the DNA of other institutions and a source of competitive advantage.

Stakeholders noted in these discussions that research and innovation are not the same. In an innovation context (often selective) collaboration with users (for instance in user/customer driven/open/social

innovation), is a more commonly found strategy. On the other hand, when considering scientific research, where pathways to impact and application are often less clear and more uncertain, RRI inspired practices can meet more resistance. While the need to demonstrate future potential impact of research is a rising agenda in some countries, norms of excellence underpinned by integrity and in some cases open access predominate and are already well institutionalised in many countries. Conversely, RRI framed in terms of open access can meet resistance in the context of innovation where IPR and competitive advantage privilege information asymmetry in corporate settings (although concepts such as open source and social innovation may advocate an open innovation approach). It follows that the EC keys primarily relate to publically-funded research, and that considering research and innovation under the keys within the same responsibility approach can create tensions.

RRI requires resources, committed leadership and agency

Stakeholders agreed that RRI needs resources, and this was seen by and large as currently lacking. While in many countries there exist policies relating to the RRI keys, overall there remains a lack of competence for RRI in communities of practice, hindered by a lack of education, training and resources. It was acknowledged that, by and large, scientists from the very beginning are not trained to incorporate RRI aspects into their work beyond research integrity, and the infrastructure and resources for RRI activities were insufficient. In some countries there was little capacity for RRI e.g. in higher education institutions, with limited attention within existing academic programmes to ethical, legal and social implications of research. It is apparent that in a limited resource environment, which is the case in all countries represented in the project, there is "cherry picking" of particular RRI keys that fit the current policy needs. There is no integrated approach to the concept, with little integration of its constituent parts.

RRI, however it is framed, but particularly as a process of deep cultural and systemic change, was seen as needing political will and committed and effective leadership. Exemplars, change agents and champions were seen as important, and committed individuals crucial for success. In advocating a sense of 'collective responsibility' the question 'who does what?' reflected awareness that different levels of responsibility exist, at a state, institutional and individual level. Although many advocate for RRI, it is not clear who has the agency, and at what level. Since the embedding of RRI in organisational settings requires systemic change, there is a lack of clarity whether this should be implemented at a management level and be incorporated into programmatic activities of the organisation (i.e. top down) or whether it should be implemented at the level of the individual researcher via for example the creation of safe spaces for interaction amongst researchers, free of programmatic assessment criteria, that will feed directly into policy decisions (bottom up). Both possibilities will be explored in the project.

Overall a common concern was that RRI should not amount to window dressing, reinforcing a status quo that continues to cement existing norms, behaviours and power relations in the face of societal needs for research and innovation systems that are able to transform to meet tomorrow's challenges. However, it appears from the workshops that the RRI concept is already creating new dynamics and stimulating debate among stakeholders, - perhaps by bringing previously unacquainted parties together in novel discussions -, and that it is thus not only old wine in new bottles. However, whether this is indeed the case will be the topic of studies in the remaining two years of the RRI-Practice project.