Bulgarian National Workshop Report

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Executive summary (maximum half a page)

The workshop was attended by a diverse group of 18 stakeholders from 11 different organisations. It was divided into two parts: 'Concept of responsibility in research and innovation,' and 'Drivers and barriers to the successful implementation of RRI in Bulgaria.' Both sessions started with a short presentation, delivered by members of the ARC Fund team. The presentations served as a point of departure for an intensive and productive discussion. The participants first deliberated over what the broad terms 'responsible' and 'responsibility' in the context of Responsible Research and Innovation may engender. Discussions showed that decision makers, business/industry representatives, and NGOs and science/research actors make up three stakeholder groups with rather distinct opinions on how RRI - a relatively new concept in Bulgaria - should be anchored in both governance and practice. That said, they all agreed that responsible research and innovation is a shared process in which all actors need to play their role. Participants also agreed that the notion of responsibility in R&I stretches beyond practical relevance and economic impact, and should therefore respond to broader social needs. While the five RRI policy keys (ethics, societal engagement, gender, open access and science education) were seldom explicitly used to describe the situation regarding responsibility in Bulgaria's science and innovation context, their more practical dimensions were said to feature and effectively shape existing R&I processes among participating institutions and organisations. Stakeholders also exchanged views on the potential drivers and barriers of RRI, and brought forth several examples of good RRI practices, deliberating on the possibilities for their wider uptake. At the end of the discussion, several recommendations were formulated that can be used to fine-tune any forthcoming RRI work in Bulgaria.

Introduction

Date and location of workshop

The workshop was held on February 23, 2017 and hosted by ARC Fund in its building in Sofia.

Participant list with affiliations:

Participant name	Organisation	Website	Stakeholder type
Diana Kopeva	Bulgarian Science Fund	https://www.fni.bg	Policy-makers
Genoveva Zhecheva	Ministry of Education and Science	http://www.mon.bg	Policy-makers
Daniela Moyankova	Agrobioinstitute – Centre of excellence in plant biotechnology	http://www.abi.bg	Research institute / academia
Dimitur Dzhilyanov	Agrobioinstitute – Centre of excellence in plant biotechnology	http://www.abi.bg	Research institute / academia
Kostadin Kostadinov	Institute of Mechanics at Bulgarian Academy of Sciences	http://www.imbm.bas.bg	Research institute / academia
Milanka Slavova	University of National and World Economy	http://www.unwe.bg/en	Research institute / academia
Ana Proykova	Bulgarian Centre of Women in Technology	http://www.bgwomeninict.org	NGO
Adelina Ilieva	Bulgarian Centre for Bioethics	http://www.bio-ethics.net/en	NGO
Diana Paunova-Galeva	SOFENA Sofia Energy Agency	http://sofena.com/en	NGO

Nadya Nikolova	SOFENA Sofia Energy Agency	http://sofena.com/en	NGO
Ventseslav Kozarev	ARC Fund	http://www.arcfund.net	NGO
Zoya Damianova	ARC Fund	http://www.arcfund.net	NGO
Daniela Chonkova	ARC Fund	http://www.arcfund.net	NGO
Konstantin Ivanov	ARC Fund	http://www.arcfund.net	NGO
Marko Hajdinjak	ARC Fund	http://www.arcfund.net	NGO
Dimitar Nikolov	TechnoLogica	http://www.technologica.com	Industries / businesses
Nedka Gateva	TechnoLogica	http://www.technologica.com	Industries / businesses
Petya Gancheva	Ruse Chamber of Commerce and Industry	http://www.rcci.bg/en	Industries / businesses

Comments on participation based on national structures

Invitations for participation were sent to about 30 relevant stakeholders, of which 19 confirmed participation and 18 actually attended the workshop. The selection of people and organisations aimed to ensure a balanced representation of stakeholders, which was largely achieved, although the NGOs/civil society sector was slightly over-represented. The workshop participants represented 4 NGOs, 3 academic or research organisations, 2 policy-making bodies, and 2 business entities.

On the side of policy- and decision makers, the Ministry of Education and Science and the Bulgarian Science Fund represent the principal institutional bodies concerned with regulating, funding and promoting science and innovation activities, and as such were deemed best positioned to bring valuable insights as to the current state of RRI governance in Bulgaria. The Bulgarian Academy of Sciences and the Agricultural Academy (Sofia) - of which the Institute of Mechanics and the Agrobioinstitute are affiliated bodies, respectively - are the two foremost public research organisations in Bulgaria. Together with actors from academia, the participation of representatives from those organisations was considered crucial because of their more active involvement with conducting and communicating fundamental/applied science. The contribution of prominent national non-governmental organisations operating at the interface of society and technology was another input to the workshop sought by the organising team, especially considering the long-term engagement of such organisations with different socially and ethically sensitive issues that fall under the umbrella of RRI. Lastly, given the importance of private sector companies in funding and executing research and in particular innovation, it was important to understand how their practices map onto RRI, and particularly ensure the participation of ICT businesses and larger commercial and industrial bodies, which are often the forerunners of new technology development and diffusion in Bulgaria.

Understanding of responsibility and RRI

How is responsibility in research and innovation framed by the participants? Is there broad consensus on what is responsibility in science and innovation or did the participants' views differ considerably? How did this differ between different actors?

In the first part of the workshop, participants were prompted to reflect more broadly on the meanings they attached to responsibility in R&I. A short introduction into the aims and objectives of the RRI-Practice project provided a general overview of the five RRI keys as defined by the European Commission. This triggered a lively debate during which it became clear that multiple understandings of responsibility were employed and navigated by different stakeholder representatives, which may be helpful to explain future (possible) pathways for the operationalisation of RRI in governance and practice. Policy and decision-makers viewed responsibility largely as an opening for lending extra legitimacy to institutional policies and overcoming issues of mistrust when it comes to governing R&I. Researchers and civil society actors placed emphasis on the need to expand professional

responsibilities and engage society more actively as an integral part of research and institutional cultures. Commercial stakeholders accentuated on opportunities presented by practice-oriented modes of 'responsibility' in terms of building new partnerships with a variety of societal and policy actors, and intervening at the nexus of science, education, and society.

Accordingly, three main clusters of interpretation concerning the rationales embedded by the concept of 'responsibility' in R&I surfaced during the workshop discussions, which can be tentatively labelled *actor responsibilities*, *impact/socio-economic relevance of R&I*, and *industry collaboration/CSR.*

Actor responsibilities: Several workshop participants pointed out that R&I is essentially a shared process in which everyone has a stake, or should play a role. As some put it, R&I outcomes should be viewed as the result of institutional and collective actions, which highlight but also extend beyond professional responsibilities allocated to researchers or innovators. This broadening understanding of collectively held responsibilities with regard to R&I may be taken to imply changing roles for the various actors involved in science and technology governance/ development, and their embedding in society. The notion of 'collaboration' was explicitly mobilised to suggest a distribution of reflexivity and moral work among a wider group of social actors (lay people, citizens, consumers, industrialists, institutional/governance actors, etc.), alongside the assumption of shared liabilities in relation to the process dimensions (knowledge production, publication strategies, etc.) and by-products (infrastructure, education curricula, etc.) of R&I.

Impact/Socio-economic relevance of R&I: Another major part of the discussion on 'responsibility' in R&I centred on notions of aligning outcomes of innovation and scientific research with broader socio-economic needs, with a key focus on achieving important positive impacts and delivering strategic results in the form of intelligent growth, employment and similar socio-economic benefits. 'Responsibility' was thus framed as an effective platform for advancing R&I goals, which are not only practically relevant and economically impactful but also generally applicable in society.

Industry collaboration/Corporate social responsibility (CSR): Discussions of 'responsibility', led primarily by industry representatives, also revolved around the need to bring in commercial actors and private businesses in order to further the socio-economic potential of R&I and thus promote socially desirable R&I outcomes. Two such acknowledged approaches, identified by participants as commensurate with the goals of responsible R&I development, were the strengthening of collaboration between industry, science and academia, and the adoption of voluntary instruments for corporate social responsibility (CSR), such as recruiting young graduates. Part of this discussion also touched upon the expanding responsibilities of commercial actors with regard to opening up the innovation process to diverse publics, engaging society early on in co-design activities, and achieving more effective governance of the social implications of emerging technologies.

Is the term RRI used at all? How? What do people understand by it?

RRI represents a relatively new concept for the majority of actors in the Bulgarian R&I system. It is not well integrated, if at all, in the mainstream research policy discourse and, as such, is not entrenched as a core value or guiding principle in both governance and practice. Nonetheless, it has recently gained some currency mainly via related EC-funded projects, leaving its uptake and visibility largely nascent.

Against this, the discussion revealed that some participants were fairly well acquainted with what RRI stands for, holding specific knowledge when discussing their own experience, while others were either largely unaware of the RRI framework or had limited understanding of it. Several participants were cautious in their use of the concept when drawing upon prior knowledge, interests, and values to describe practices they had already implemented or developed within their own institutional environments. In this way, RRI was more commonly seen as a re-labelling or extension of existing approaches for governing and dealing with both R&I outcomes and processes.

Overall, participants drew on their knowledge of existing mechanisms, methods and principles as an entry-point for considering the social dimensions of science and innovation, recognising the importance of aspects such as public accountability, stakeholder engagement, research ethics, integrity, science education, openness, transparency, dialogue, partnerships, science communication, public outreach and gender equality. In addition, a smaller number of participants were involved in discussions of how RRI relates to broader issues of social and economic development, underscoring its prominent place as a governance issue. In this way, ideas around RRI emerged as part of broader deliberations for enhancing the social responsibility of science, on the one hand, and for steering research and innovation by improving their responsiveness to societal challenges, on the other.

Are any of the keys mentioned as aspects of responsibility?

Participants reflected on the practices, values and process-based approaches that guide their professional and institutional experiences with regard to 'doing' responsible R&I work, ultimately viewing RRI as a patchwork of interlinking values and responsibilities, some of which well established, while others yet to be defined. Specifically, conceptualisations of RRI entailed different considerations of social and ethical aspects, with a large part of the discussion focusing on the various conditions, dimensions, and capacities that apply to both individual organisations and to concrete R&I or socio-political processes addressing current/future forms of responsibility in science and innovation, more broadly.

As such, the discussion did not squarely focus on RRI as a normative strategy for responsibilising actors in the national R&I system - or for mainstreaming certain actions and goals through the EC-endorsed RRI keys or AIRR dimensions, for that matter - leading to no robust interpretation of the outcomes associated with such more substantive conceptions. Instead, it sought to explore the empirical ground and illuminate some of the components that make up the practical framework for operationalising RRI 'from below'. That said, participants made recurring reference to the Keys as a useful means to frame their procedural articulations of responsible research and innovation in the Bulgarian context, elaborating on how such conceptions (can) effectively shape R&I processes and inform particular institutional and organisational strategies towards greater responsibility:

<u>*Ethics*</u>: 'Ethics' in the Bulgarian R&I context conjured up demands relating to the institutionalisation of ethical standards via a centralised body tasked with advising the national government on issues of STI policy. This interpretation invited a further reflection on future institutional arrangements that would ideally allow for critical voices to be heard and for multiple stakeholders to be involved in science and technology assessment activities more widely. Related perspectives included the strengthening of research integrity and 'proper' scientific conduct in universities and research organisations; realising opportunities for informed dialogue and engagement of society in research processes; as well as boosting the responsiveness of R&I outcomes towards societal challenges. Framing issues in a fair or non-biased way as part of the public communication of science, as well as ensuring full transparency and accountability of research activities, were also identified as desirable ethical practices to be pursued.

<u>*Engagement:*</u> Framings of 'engagement' included mainly procedural objectives, concerning future and existing governance/institutional design, such as an expressed willingness for the intensification of practices for public/stakeholder dialogue and consultation on matters of science and innovation policy; opening up alternative spaces for the effective co-construction of specific instruments and measures that would ensure successful policy implementation; bolstering efforts for promoting genuinely collaborative processes of agenda/priority-setting for R&I, and so on. In this context, the topic of 'engagement' surfaced as being associated more with achieving social acceptability gained through an increased legitimacy of R&I policy decisions, and less with strengthening research and innovation outputs or processes per se.

<u>*Gender*</u>: Gender equality in R&I was initially dismissed as a non-issue for the Bulgarian context, given the statistical prevalence of female researchers in the public research sector. Nonetheless, some participants highlighted the issue of under-representation of women in top positions in both research and innovation. Others referred to the need to overcome structural factors inducing women to drop out of science by providing more career support to female scientists during periods of pregnancy, maternity leave, etc. Discussions also entailed considerations about the need to support the inclusion of young scientists in RDI and provide the 'right' institutional incentives for reversing the currently unfavourable age structure in the Bulgarian research environment, thus expanding the issue of gender equality towards a broader objective of social justice and diversity.

<u>*Science education*</u>: The operational understanding of 'science education' invoked a number of interrelated aspects, indicative of specific and markedly future-oriented forms for its successful anchoring in Bulgaria, such as: boosting interest in science among children and young people from a very early age, and throughout the school system; stimulating science literacy and developing capacities for science and innovation; impassioning future researchers through effective public dissemination and communication of science and scientific achievements; enhancing formal science education and training, especially on the level of existing science and technology academic programmes and courses so that future or present researchers can be better equipped to become good RRI actors; raising the reputation of science and improving the appeal of research careers, etc.

<u>*Open access:*</u> 'Open access' was discussed primarily in terms of broader requirements for setting up the 'right' framework conditions and providing the necessary research infrastructure that would guarantee free access to

publicly funded research results. Specific emphasis was laid on continuing and expanding the provision of 'green road' access via open archives in all research institutions, universities and funding bodies. In that context, participants identified an immediate prospective challenge associated with the task of integrating all publicly funded research publications into a common open-access repository, freely accessible to all, with no content restrictions such as 'under-embargo' items or 'on-campus access restrictions' that are associated with current existing institutional archives.

What was identified as significant barriers, drivers and best practices to the further development of responsibility in research and innovation, to RRI (and potentially to the keys)?

Participants outlined several enabling and constraining factors that are likely to impact on the operationalisation of RRI in the Bulgarian context, noting their impacts on the systemic governance of research and innovation activities.

Drivers

Participants considered several recent developments in the wider institutional setting as providing key driving forces that are likely to advance R&I in a responsible manner, among which: a stronger emphasis on the socio-ethical aspects of research in official policy statements and strategic documents; the introduction of incentive structures for socially relevant, ethically acceptable, and publicly transparent science and innovation activities, evidenced by the gradual adoption of a more comprehensive set of eligibility rules/evaluation criteria for R&I funding and support; a renewed emphasis on building partnerships and encouraging the collaboration of various stakeholders in R&I, particularly the involvement of private and industry actors; the creation of a more favourable environment for advancing R&I activities, driven by a firm political and financial commitment to modernise the existing research base and deliver the required structural arrangements for promoting a broad range of RRI-related activities, such as expanding institutional open access, supporting doctoral/female researchers, enabling stakeholder consultation and so on.

Barriers & Challenges

Despite recent institutional steps taken to attempt to increase the social value, relevance or impact of research, participants acknowledged a number of hurdles that may impede the broader uptake of RRI by the research and innovation communities and its implementation as an effective governance tool. One major issue singled out during the discussions was the inadequacy of current incentive provisions for the pursuit of socially/ethically responsible science and innovation. As noted by some participants, scientific or academic achievement is evaluated predominantly against output criteria, placing the emphasis on scientific excellence and on the economic valorisation of R&I (i.e. publications'/patents' count, marketability of results, etc.) while sidestepping broader socio-ethical benefits and goals. Additionally, participants pointed out the existence of considerable institutional gaps when it comes to following and developing concrete measures for RRI in the national research system, such as the lack of a centralised body that specifically deals with issues of research ethics or integrity, for instance. On a separate note, the insufficient capacity for the development of a responsibility-driven approach to R&I within institutions was also acknowledged, despite efforts made in recent years, mainly linked to the persistent underfunding of research organisations and universities, and the lack of adequate infrastructure to promote measures that might effectively contribute to RRI. Important challenges related to improving the state of formal science education and training in Bulgaria, particularly in terms of ensuring that existing academic programmes especially in the technological sciences, pay greater attention to the ethical, legal and social implications of research were also discussed. Another recurring theme in the workshop was the need for greater awareness of RRI as a concept or a research governance framework in the R&I community, as well as for the role of societal and ethical concerns in research. This point was seen as difficult to resolve given the lack of common understanding as to what 'responsibility' in R&I effectively engenders. Finally, from a business/industry perspective, the pursuit of RRI was seen as insufficiently worthwhile as a goal in itself, mainly because markets are typically unsuitable to address/incorporate ethical concerns or societal needs that do not immediately translate into profit. It was noted that this often results in a sense of unwillingness to apply the wider principles of responsibility on behalf of start-ups and innovators, given that these wider goals may be perceived to reduce their general competitiveness.

Initiatives/good practices

In terms of good practices that have already been implemented, participants mentioned a number of existing engagement instruments that have been developed at the interface of science, politics and society that include: the organisation of wider public and stakeholder forums and consultations on issues of science and innovation policy; the set-up of advisory bodies such as councils on ethical aspects of clinical and biotechnology research; efforts to promote science and scientific results in a fun and engaging way through initiatives such as open days for universities and public research organisations and EU-wide public events like "European Researchers' Night".

At what level (state, institutional level, individual researchers) did the participants tend to address responsibility in research and innovation?

Most often, participants discussed the question of responsibility in R&I practices and frameworks at the level of their own organisations, although the question of responsibility at the state level was also brought up several times, most often in a critical tone.

Reflections on the workshop process & Impact

How easy was it to recruit people? How easy was the conversation; was there a degree of conflict to the discussions? To what extent did the facilitator have to steer the discussion with specific questions (in contrast to an easy flow of discussion)? Did the participants seem interested in the project's results?

More than half of the people invited to take part in the workshop replied to the invitation. The selection of invitees was conducted by the research group, who relied on their previous experience of collaboration with some of the invited organisations, or knowledge about their particular relevance for certain aspects of RRI.

In order to introduce the participants to the topic, members of the ARC Fund team delivered a short presentation at the start of both sessions: "Presentation of RRI concept and RRI-Practice project" and "Strategic, public and political dimensions of responsible research and innovations in Bulgaria". The workshop moderator initiated the conversation by bringing forth several key issues, after which the participants engaged in lively and enthusiastic discussions. The moderator rarely needed to intervene and boost the discussion, but only moderated it, making sure that all participants were given a chance to share their views.

Overall, a number of the concepts and assumptions that underpin RRI were perceived by participants as laying the basis for an effective research governance framework; indeed, participants discussed certain prerequisites and potential ways for advancing effective pathways for its implementation. At the end of the debate, participants formulated several recommendations that can be used to fine-tune any forthcoming RRI work in Bulgaria within, but also beyond, the current project:

- Mainstreaming RRI requires open dialogue and deliberation over the views of different societal and policy stakeholders, their interests, roles, value orientations, and norms, especially if a common policy platform/set of initiatives are to be adopted;
- There is a need for diverse actors in the national R&I systems to arrive at a shared understanding of 'responsibility' as a building block for synchronising existing practices with some of the more specific outcomes of RRI;
- Greater attention should be paid to the importance of RRI case studies as a means of making 'responsibility' more immediately relatable to concerned actors;
- RRI outcomes need to be linked to actual decision-making processes that carry important democratic/socio-economic benefits;
- There is urgency to avoid turning RRI into another bureaucratic exercise.

All in all, participants seemed to be interested in the project and asked to be informed about its progress and findings. They also expressed their readiness to participate in any planned future activities. Indeed, feedback showed that participating stakeholders reflected on the merits of the workshop in an overwhelmingly positive manner. All welcomed its design and implementation, and felt that their views were respected and listened to. Nearly all participants answered affirmatively when asked if they felt better acquainted with the concept of RRI after the workshop, with only 1 participant feeling rather unsure. Similarly, almost all participants recognised the need to explicitly relate the concept of RRI to their future work, indicating potential for further impact.