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Policy Brief #4

STIMULATING RESPONSIBLE RESEARCH AND INNOVATION WITH THE ONLINE SOCIETAL READINESS THINKING TOOL

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1. RECOMMENDATIONS

As part of the NewHoRRizon¹ project, we have developed and tested the Societal Readiness Thinking Tool². The tool is freely accessible and facilitates the integration of Responsible Research and Innovation (RRI) in research. In-depth knowledge of RRI is not required for its use.

For policymakers, governments, research funding organizations and research institutes to support meaningful integration and articulation of RRI in research, we recommend the following:

1. Advise researchers on the urgency and benefits of the practical integration of RRI in research.
2. Refer researchers to the Societal Readiness Thinking Tool in calls and on websites.
3. Add an (optional) Annex to proposal templates to submit the RRI reflection PDF generated by the Societal Readiness Thinking Tool.
4. Take part in the co-creation of the further development of the Societal Readiness Thinking Tool.

■ 1. <https://www.newhorizon.eu/>

■ 2. <https://www.thinkingtool.eu/>

2. RESPONSIBLE RESEARCH AND INNOVATION

The European Commission aims to improve the alignment between research processes and results on the one hand and expectations and needs of society on the other hand. To this end, it considers RRI as an underlying value in the research that it supports. The Commission aims to stimulate the integration of five issues in research: *ethics, gender equality, open access, public engagement and science education*³ (Box 1). As such, the Commission intends to stimulate more inclusive and transparent research and innovation which integrates these issues.

3. A NEW CHALLENGE FOR RESEARCHERS

NewHoRRizon has analysed over 13.000 Horizon 2020 proposals. Our study shows that researchers have a limited understanding of RRI and predominantly use it as a hollow phrase to signal rhetorical compliance as opposed to actually integrating the concept within research practices⁴. In other words, the meaningful integration and articulation of RRI in research is still a challenge for researchers. Yet, being able to do so is a necessary precondition to effectively contribute to societal innovation and progress. Researchers need assistance and advice from governments, research funders and research institutes on the urgency and benefits of the practical integration of RRI in research.

ETHICS	Applying basic ethical and legal principles to research in all domains. This contributes to more excellent research with attention paid to any ethical concerns that might arise due throughout or due to the research.
GENDER EQUALITY	Explicit attention on the diverse needs, necessary changes in representation, and concrete steps towards equal opportunities for people of all gender expressions within the research and innovation system, with an intentional focus on sexual and gender minorities.
OPEN ACCESS	Making research results freely accessible. This contributes to more efficient uptake of science and innovation in the public and private sector by reducing the barrier to access this information.
PUBLIC ENGAGEMENT	Including the broadest possible range of civilians and civil society organizations in scientific and technological developments. This contributes to relevant and required developments and a closer alignment of research and innovation that is produced and the needs and expectations of society.
SCIENCE EDUCATION	This contributes to both making members of the public more able to engage with novel scientific and technological innovations and making this engagement (in terms of scientific education and careers) more attractive.

Box 1: Elements of Responsible Research and Innovation (RRI)

■ 3. <https://ec.europa.eu/programmes/horizon2020/en/h2020-section/responsible-research-innovation>

■ 4. <https://science.sciencemag.org/content/369/6499/39>

4. THE SOCIETAL READINESS THINKING TOOL INCREASES AWARENESS AND BROADENS THE PERSPECTIVE OF RESEARCHERS

THE TOOL TRANSLATES POLICY TERMINOLOGY AND SCHOLARLY CONCEPTS TO ACADEMIC PRACTICES

We translated scientific and policy concepts into a set of questions that users – predominantly researchers – can answer. The questions cover the five RRI keys that are relevant at the level of research projects: ethics, gender equality, public engagement, open access and science education. Additionally, the questions cover all project phases ('gates'), from research design and data collection to analysis and dissemination. Finally, the tool offers resources ('methods') for answering the questions and allows for downloading all provided answers in a single PDF file.

ADVISERS AND RESEARCHERS TESTED THE TOOL

The usability and effectiveness of the tool were extensively tested. We used focus groups at two comprehensive universities, two specialized universities⁵ and two university medical centres, all based in the Netherlands, covering all research domains. Participants of the focus groups were advisers on European grants or advisers on one or more of the five RRI keys. This included, for example, staff working at diversity offices and university libraries. Advisers represent a potential user group, as they are involved in supporting funding applications and in organizing research and consortia; and they are also aware of the policy context around RRI, current societal readiness related knowledge levels and questions in academic practice. In total, 38 advisers participated in the focus groups. Participants used the tool and shared their experiences during the focus groups.

We also tested the tool by conducting six Thinking Aloud interviews with five researchers and one project officer who is involved in research projects. Interviewees were working at the same Dutch university or the affiliated university medical centre and represent a large variety of academic disciplines: astronomy, environmental sciences, law, psychology, biology and public health. Interviewees represent potential users of the tool as they are involved in writing funding applications, managing research projects and conducting research. During the interviews,

the interviewees used the tool and were requested to think out loud while navigating the tool and answering questions. Furthermore, notes on non-verbal responses were taken. Each interviewee focused on one or two RRI keys that were most relevant for their own project. Before they used the tool, we asked questions to assess their prior knowledge of and perspectives on RRI. After the interviews we asked questions about their experience when using the tool and whether or not this changed their knowledge and perception about RRI.

USERS SAY THAT THE PROVIDED QUESTIONS ARE RELEVANT, USEFUL AND PRACTICAL

The analysis shows that the questions included in the tool are widely appreciated. Focus group participants and interviewees consider them to be relevant, useful and practical. The questions stimulate reflection on issues that researchers are increasingly confronted with, but not always familiar with or consciously thinking about. Participants for instance say: *'I wish that my support staff provided such questions'*, *'It is a great check-list during a project as well'*, and *'Make sure that the tool is aligned to funding procedures'*. All in all, the translation of scientific and policy concepts into meaningful questions that support academics to reflect upon the societal readiness of their research can be considered successful. We advise governments, research funders and research institutes to refer researchers to the Societal Readiness Thinking Tool in calls and on websites.

OPTIMIZING THE PRESENTATION OF THE QUESTIONS WILL ADD VALUE

The analysis also shows that research and innovation praxis differ in significant ways, therefore the structure of the tool and the offered functions are not immediately evident or applicable to a significant share of the users. For example, the label 'gate', originating in innovation processes, confuses some of the users, and the 'methods' button is not readily found by everyone. In short, a next step in the development of the tool is to optimize the presentation of the questions.

■ 5. A technical university and a university focusing on the social sciences and humanities



5. BROADENING THE CONTEXTS OF APPLICATION

The user tests suggest that the questions included in the tool are conceived in a way to generate paths towards RRI, and researchers can plan their own paths from the guided thinking process offered by the tool. Our research and testing show that the tool already has the potential to contribute to include broader society in research so that they benefit even more from results of such research. Hence, we recommend all governments, funders and universities to take part in co-creation of the further development of the Societal Readiness Thinking Tool.

There is also potential of the tool to broadening the context(s) of application. Firstly, the tool could be attractive for use in an educational context, for example when training students about ethical or gender issues. Another possible context of use is during departmental discussions on RRI, for example on open access or public engagement.

On top of that, there is also potential for further development, such as upgrading the tool to make it easier for multiple users to work on a project in the tool simultaneously. This is a widely expressed wish by users: *'It would be great if you could work collaboratively online on this'*. In a funding context this will facilitate more effective discussion of RRI related questions and possible answers during the application and reporting procedures. Finally, the thinking tool may aid in monitoring and evaluating research (projects). In all cases the tool supports researchers to consider the broader societal and democratic context of their research and to be responsible and open in their work.



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