Responsible research and innovation (RRI)

Here you will find advice on how to incorporate responsible research and innovation into your project. Responsible Research and Innovation (RRI) is an approach that facilitates the contribution of research results to sustainable development. The aim is for all actors in the research system to cooperate well and for the results from the projects to be widely used and to benefit society in the best possible way.

You jump down the page by clicking on the links:

Latest updated changes

18 December 2024:

- The website has been reorganized with more information about general advice for the application.
- The word "method" about responsible research and innovation has been replaced by "approach".
- Fact boxes about the AIRR dimensions entered.

In brief - what is responsible research and innovation?

Responsible research and innovation offers frameworks, techniques and tools for thinking about issues of social responsibility.

The approach encourages you to build methods and processes into projects by considering four important dimensions: looking ahead, inviting along, thinking through, and working together (the so-called AIRR approach). By asking ourselves how exactly our research and innovation should be carried out in order to contribute even better to responsible solutions to societal challenges, the contribution of research can become more important and be a better guide. This approach can help you with this.

The approach will ensure that everyone involved takes into account the societal, environmental and ethical context in which they operate. This applies to researchers, funders and technology developers alike.

Do you need to learn more about what responsible research and innovation is and about the AIRR approach? Go down to *The basic elements of responsible research and innovation*.

How can you refer to responsible research and innovation in a project and in an application?

How you integrate responsible research and innovation in applications will depend on the context of the individual project. Incorporating different approaches into a project is an important first step, but it's the processes and the space they create in project execution that make a real difference.

The following five points provide a good foundation for how to develop the approach in your project:

1. In general, responsible research and innovation should be an integral part of the project and involve all project participants.
2. It is important to develop an overall understanding of the project's approach to responsible research and innovation as early as possible.
3. The activities in the project within responsible research and innovation must be coordinated. They can advantageously be carried out as a separate work package.
4. Bring important resources to the work. Consider including researchers with a background in the humanities and/or social sciences, as this could be a strength for the project.
5. For most people, integrating responsible research and innovation into projects will require the acquisition of new knowledge, expertise and skills.

General advice for the application (research quality part)

Remember to customize the level, content, and exemplification of your project:

- Provide a brief overview of the relevant social, political, environmental, ethical or cultural dimensions of your project (some of which you already describe in the mandatory sections of the research quality section of the project description template).
- It is not negative if you highlight complexities, uncertainties or ambiguities as long as you explain how you will handle them. For example, what could be the possible positive, neutral, or negative impacts your project could have on end users, other stakeholders, or society at large? Who it will be for depends on your project. You can use tools like the AIRR approach to help you.
- Describe how you have designed the project to include/include the approach to responsible research and innovation throughout the implementation. These can be activities, processes and governance structure, depending on the context of the project. We expect the project to include relevant measures and involve societal actors in the discussions. If not, explain why.
- Explain what resources and time you intend to spend on responsible research and innovation activities. Emphasize the needs you envision, which may include learning related to this work in the project. Leave details to the implementation part.
- Do you think that your approach to responsible research and innovation increases the project's potential impacts? Describe this under the section on effects and effects.

All of these bullet points are also good examples of what an evaluator will look for in order to identify the approach to responsible research and innovation in your application.

Responsible research and innovation in the evaluation criteria

We believe that the use of a responsible research and innovation approach can improve the quality and benefits of research and innovation, and may raise a project application on all three assessment criteria.

If the call asks your project to use (or that you use) a responsible research and innovation approach, describe how in simple terms. You can find more advice above under "How to describe responsible research and innovation in a project and in an application". This description naturally belongs in the research quality section, as the criterion "Research quality – quality in R&D activities" evaluation points is method-centred. Several of the points are also

linked to some (but not all) of the cornerstones of a responsible research and innovation approach. We ask the evaluators to familiarise themselves with the Research Council's website on responsible research and innovation (this website).

Examples to inspire the integration of responsible research and innovation in projects

Here are some examples of how to incorporate responsible research and innovation into research and innovation projects. Look at the more detailed points/questions you can ask yourself and concentrate on the one that is most relevant to your project.

- The network of research funders in materials research and innovation, M-ERA.NET, its RRI Guidelines (2022) can be used as inspiration when responsible research and innovation is to be incorporated into materials-related projects.
- The EU Health Partnership has its own guidelines: the ERA4Health Responsible Research and Innovation (RRI) Guidelines (2023).
- UK Research and Innovation gathers their (R)RI understanding, guides and tools under the "Good research resource hub".
- The Dutch Research Council NWO (De Nederlandse Organisatie voor Wetenschappelijk Onderzoek) calls its RRI method "Impact plan" and it shows the potential of the methodology for increased impacts and impacts.
- Corporate Social Responsibility (CSR) has a lot in common with RRI, and here you can read more about this approach to corporate responsibility.

So dear child has many names, but as of now we continue to use the term responsible research and innovation. , As presented in Norway, the approach is just as relevant for research institutions as it is for the business sector.

The basic elements of responsible research and innovation

Research, innovation, and technology have the power to transform society. Science is not separate from society, but is part of it. With this comes an important social responsibility for funders, researchers and other key groups involved in scientific and technological development and innovation. Everyone involved should think about:

- Which direction the research takes us in.
- Who can benefit from new research and innovation and who may not benefit from it.
- How possible social, environmental and ethical issues can be considered throughout the research and innovation process.

Responsible research and innovation is not about judging what is "good" or "bad", "positive" or "negative", or "responsible" or "irresponsible". Instead, responsible research and innovation offer frameworks, techniques, and tools for thinking about social responsibility issues. This approach encourages you to build in methods and processes to consider four key dimensions related to research and innovation (AIRR dimensions): fact boxes

Anticipation!

What could be the future desired and unwanted effects of your project? Who will benefit from it, and who may not? Can decisions be made now to encourage the good effects, while minimizing the bad effects? This is not about exhaustive predictions, but about building a sense of preparedness for the future.

Inclusion!

What voices, knowledge and actors shape your research project? Inclusion is about creating opportunities for two-way exchange of information, collaboration on design or new knowledge to draw in important voices and actors from outside into the research process.

Reflection!

Do you have an opportunity to stop and "take stock" of the work you do? Do you all agree with the goals and decisions you have made so far? Reflection is about ensuring that there is space and time to ask difficult questions together about the project's basis.

Responsiveness!

What are the key decision points in your project? Are there opportunities to change course, if you need to? The last dimension is a reminder that the work you do under the label of responsible research and innovation is needed as a basis for the design, management and use of your research and/or innovation.

These dimensions of responsible research and innovation have interfaces with several other cross-cutting issues such as user involvement, open science, research ethics and other important value assessments.

The Research Council's approach and contribution to responsible research and innovation

In our calls for proposals

For more than ten years, we have been calling for responsible research and innovation in our calls, both nationally and in international calls for collaboration. The way we have done this has varied with the theme of the call and has evolved over the years. This is in the nature of responsible research and innovation. The approach has been most in demand in enabling technologies (e.g. ICT, biotechnology and nanotechnology), but also in food, health and other topics. The Research Council's own calls for proposals, the Horizon Europe programme and international joint calls in the Nordic countries and Europe require this. As of 2025, several calls specifically state that responsible research and innovation approaches must be used in the project, and then the applicant is referred to advice and information.

An active contributor to the development of responsible research and innovation

The Research Council is a key player in responsible research and innovation because we are aware of this when we advise or fund projects. One of the Research Council's four core values is to be responsible. We have been a particularly active player since responsible research and innovation became a concept over ten years ago, and have worked on related approaches in the past.

National and international networks that support work on responsible research and innovation

The Research Council of Norway has contributed to the establishment of the national collaboration platform Centre for Digital Life Norway (DLN), which has been a pilot for transdisciplinary collaboration and responsible research and innovation since its inception in 2016. DLN's website contains useful advice on how to describe responsible research and innovation in the context of biotechnology, and what responsible research and innovation activities they have in the network.

When the Research Council was to establish a commitment to technology convergence in 2021, it was only natural to include responsible research and innovation already in the planning phase. One of the elements has been to establish a learning arena for the projects in the initiative, and the ARINA network was started in 2024. There, the research communities and the Research Council can share experiences and knowledge about work on responsible research and innovation within and across the projects, and gain insight into:

- challenges related to working with a transdisciplinary approach, open research and socially responsible research and innovation,
- particular challenges related to research on technology convergence for radical technological development,
- challenges that arise from linking research and radical innovation.

The government's billion-kroner investment in artificial intelligence (AI), which will start in 2024, has three tracks: societal impact, technology development and innovation. Responsible research and innovation approaches are relevant for the centres to be established and the research in all tracks, and especially when it comes to societal impact. See also our separate page on the work with artificial intelligence (in norwegian only).

Since 2016, the Research Council has contributed to the implementation and development of the guidelines for responsible research and innovation in several **European ERA networks and now partnerships**. Experience has shown that it is also important that we integrate the thinking and activities in these projects already when we design the applications to establish the partnerships.

The **project Responsible Research and Innovation Norway (AFINO)** was a network and learning centre for responsible innovation and corporate social responsibility in Norway, funded by the Research Council of Norway (2019-2024). The goal was to develop expertise and new methods to ensure that innovation is responsible, sustainable and fair, and has gathered a lot of important knowledge that is available on the website and in publications.

The Transforming Innovation Policy Consortium (TIPC) was established in 2016 by several countries together, and brings together organisations with tasks related to research and innovation policy with the aim of increasing learning in their own organisation related to major societal challenges. The Research Council participated in the consortium 2016-2022.

How did it start?

The Research Council's focus on ethical, legal and social aspects of technology research from 2002 was part of the international development in responsible research and innovation. The initiative was continued with a focus on the development of research on, and research on, socially responsible innovation.

Responsible research and innovation has always been linked to the enabling technologies of biotechnology, nanotechnology and ICT, and has matured considerably in recent years. As early as 2015, the Research Council established a framework based on the four AIRR dimensions: Anticipation, Inclusion, Reflection and Responsiveness. Responsible research and innovation represents development and learning ambitions for the research and innovation system that are so broadly understood that they include the Research Council level.

This article from the magazine Research Policy in 2016 provides a comprehensive look back at responsible research and innovation in the Research Council of Norway: Responsible research and innovation in the Research Council of Norway (in norwegian only).

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