CHALLENGES AND OPPORTUNITIES IN BUILDING RRI INTO HIGHER EDUCATION INSTITUTIONS

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WHY RRI?

• Science and technology important contribution to economic growth, improved health and living standards
• But also ethical concerns and negative consequences for people and the environment
• And mismatches:
  – Lack of innovation development for certain problems
  – Vulnerable groups in society adopt innovation less often
• Increasing pleas for ‘better’ science
science and society 2001
science in society 2007
science with and for society 2011

The EC
*Grand societal challenges*
*Public engagement*
*Science education*
*Ethics and Gender*

The society
*Corporate social responsibility*
*Sustainable development*

But also a concept still under construction

technology assessment 1970s
public engagement 1990s

The scholars
*Technology assessment*
*Public engagement*
*Ethics and responsibility*
*Transdisciplinarity*
Current EU definition of RRI

“RRI is an inclusive approach to research and innovation (R&I), to ensure that societal actors work together during the whole research and innovation process. It aims to better align both the process and outcomes of R&I, with the values, needs and expectations of European society.

In general terms, RRI implies anticipating and assessing potential implications and societal expectations with regard to research and innovation.”

WHAT IS RRI?

Towards a working definition

• The academic and policy literature in this field mentions a number of additional characteristics related to RRI

• These characteristics can be understood as
  - responsible **outcomes and impacts** of the R&I process
  - **process requirements** for responsible R&I processes
### RRI OUTCOMES

**Learning outcomes**
- Engaged Publics
- Responsible actors
- Responsible institutions

**R&I outcomes**
- Ethically acceptable
- Environmentally sustainable
- Socially desirable innovations

**Societal impacts**
Contribute to solving societal challenges
e.g. 7 Grand Challenges (EU)

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Citizens empowered with competences to engage in RRI process effectively

Actors think and act according to principles of RRI

RRI process institutionalized in academia and other relevant organizations
Variety of researchers from different disciplines and broad range of stakeholders identified

All relevant stakeholders invited to participate

Imagining plausible futures and technology paths

Mutual learning and alignment

Open to needs of others

Ability to change process and paths

Meaningful, addressing purpose and context
So, what could you *do*?

Process requirements as criteria:

- **Evaluative framework** to assess RRI initiatives: retrospective analysis

- **Self-reflection tool** to help shape RRI initiatives: prospective analysis
RRI in a nutshell

Responsible Research and Innovation is:

- **Involving society in science and innovation** ‘very upstream’ in the processes of R&I to align its outcomes with the values of society.

- **A wide umbrella connecting different aspects of the relationship between R&I and society**: public engagement, open access, gender, equality, science education, ethics, and governance.


RRI Toolkit online: [http://www.rri-tools.eu/about-rri](http://www.rri-tools.eu/about-rri)
RRI IN HIGHER EDUCATION INSTITUTIONS

• Pre-RRI stage: attention for most policy keys in more traditional sense: science communication/education, ethics, gender equality, public engagement
• Scattered, isolated initiatives
• Increasingly university boards put emphasis on ‘societal engagement’ and ‘contributing to society’ in their mission statement
• More willingness to move towards becoming an RRI institution (although most do not call it as such)
• But embedding RRI in HEIs not easy → paradigm shift
EMBEDDING RRI REQUIRES TRANSITION

Research

Education  Society

Governance for RRI

Education  Society
EMBEDDING RRI IS COMPLEX PROCESS

‘Landscape’
Broader societal trends

‘Regime’
Dominant structure, culture and practice of system

‘Niches’
Innovative experiments in which actors create alternative practices (deviant from regime)
• How to realize such a transition?
• Top-down force by funders and policy-makers?
• Danger of tokenistic tick boxing
• More bottom-up change at the level of higher education institutions
• Learn from pioneers – e.g. civic university
TRANSITION

- Participatory action research
- Transdisciplinary research

Research

Governance for RRI

- Systematically identify societal needs → Science shops – next (actively search for questions)
- Organize science-society dialogues outside university

Education

- Trigger and facilitate societal engagement (modules) – mindset, community service learning
- Train competences in transdisciplinary research (courses / programs) at all levels

Society
What does RRI mean to scientists in higher education institutions, e.g. in the natural and medical sciences?

We investigated this:

- Semi-structured interviews (n=20)
- 1 workshop on RRI (n=15)
- 1 presentation on RRI, followed by discussion (n=28)
RRI is not a concept most scientists are familiar with
They relate it mostly to outcomes – societal benefits – not so much to the research process itself
We encountered a few proponents, but mostly met scepticism
Low urgency for ‘better’ science!

We cannot publish this research in high-impact journals
Science needs to become Responsible? So scientists are irresponsible now?!
This is only for applied research, not basic science
Nothing more than words managers or politicians use
RRI is too idealistic
RRI is about much more than only research! It is too demanding for researchers!
Inclusion and diversity

• The inclusion of practitioners at the grassroots level was reasonably lauded, but opinions were much less favorable about including other types of societal stakeholders, such as the public or patients
• Lack of appreciation of experiential knowledge
• Interaction only when results are available

“[the interaction with society] only takes place during certain stages of your research. That you found something out, and you want to know what people think of it.”
Transparency and openness

• Much favored

• Scientists should not raise unrealistic expectations in competition for research funding or publications in prestigious journals

• Perceived duty to educate the public, especially about possibilities and limitations of technologies via the popular press

• Strong prevalence of the ‘deficit model’ among scientists with respect to public communication

We first need to educate citizens before they can participate!
Anticipation and reflection

• Many scientists thought that researchers should be aware of bias and fallacies in their decision-making
• Reflection is located predominantly downstream, towards implementation of technology
• Reflection mostly concerns technical and economic aspects
• Societal & ethical dimensions are generally not considered integral part of R&I
• Some thought it was the duty of scientists to look at more aspects of their research than technological and economic ones: ethical aspects in particular
• Not something you do in interaction with stakeholders
Responsiveness and adaptive change

• RRI mainly seen as limitation on the autonomy of science
• Shared concern of the scientists of the possibility that this notion of RI will constitute a brake on science
• There is some support for involving grassroots level practitioners in formulating research questions
• But the public is not to interfere in the process of science and try to steer science’s impacts as research benefits from serendipity (lack of appreciation of experiential knowledge)
• The public should have trust in science as an institution or the scientist as a professional

How do you expect these people, society, to have a voice in the innovation process? (...) Then money would go to sophisticated vending machines, or nicer TVs. Society couldn’t care less that we develop things that are for the benefit of medicine. RRI is the end of ‘pure’ science!!
Bottom up AND top down

- Clear mission statement
- Support (fund, train, reward, set standards)
- Showcases (visibility)

- Raise awareness
- Organize workshops
- Identify and link RRI proponents
- Attract RRI-minded researchers
- Reward RRI in career advancement

- Experiment – be reflexive and learn!!

Research

Governance for RRI

Education

Society