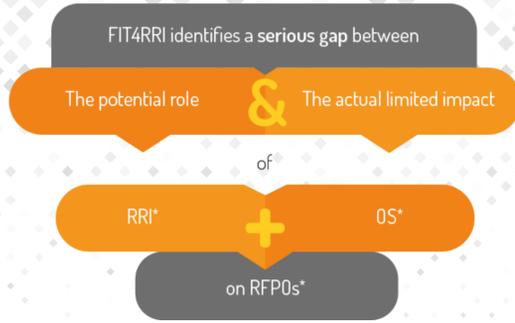




## Fostering Improved Training Tools for Responsible Research & Innovation

# Critical trends shaping science



## Objectives

- 1 RRI & Open Science training
- 2 Advanced governance settings

FIT4RRI's extensive literature review identified trends, drivers, barriers, values and interests of the diffusion and embedment of RRI practices and approaches in RFP0s.

- Hyper-competition
- Acceleration of the research process
- Increasing pressure on assessment systems
- Task diversification
- Increasing openness to external actors



- Shrinking of research funds
- Increasing segmentation
- Increasing staffing
- Increasing mobility
- Critical dynamics affecting quality of research products
- Governance shift

## Barriers

**Related to awareness**  
People are not aware of RRI.

**Cultural attitudes of players**

- Resistance to change
- RRI perceived as a risk or as limiting academic freedom
- Self-referentiality of RIs
- Priority given to short-term processes
- Specialisation or value systems marginalising societal issues
- University training approaches

**Interaction between actors**

- Stereotypes on other actors
- Lack of collaborative culture
- Diverging visions of societal benefits
- Conflicts between local, national & international cultures

**Related to relevance**  
RRI is not perceived relevant for problems and is not capable to mobilise stakeholders.

**Dynamics of RRI incentives**

- Lack of material incentives & scientific recognition
- RRI as disincentive for scientific recognition
- Unclear benefits of RRI

**Related to sustainability**  
RRI is not perceived as sustainable in the long run.

**Related to effectiveness**  
RRI is not perceived as effective to solve problems.

**Uncertainty**

- About concept, promoters, process and impacts of RRI

**Requirements & conditions**

- Lack of resources, skill & training opportunities and communication channels to implement RRI

**Specific technical issues intrinsically connected to implementation**

- Management of public participation
- Turning RRI outputs into policies

### Economic

Innovation policies increasingly embedding RRI in their mission, resulting in development of better products, services, employment and economic growth.

### Political

Governmental and international funding programmes enhancing interaction among social actors and interdisciplinarity.

### Technological

RRI providing new tools for co-creation, knowledge sharing between different stakeholders and involvement of end-users in innovation process.

## Drivers

### Environmental

Increasing investments on environmental issues also favouring RRI understood as fostering environmentally and socially sustainable research.

### Social

Increasing demands for social inclusiveness and management of conflicting interests which RRI could address; increasing role of social sciences & university teaching in raising awareness on RRI.

## Values & interests

### Opportunity

RRI may help researchers and RIs to seize opportunities otherwise precluded to them in terms of funding, networks, careers and skills. >>>>

### Management- of-the-future

RRI may help to anticipate R&I risks and benefits, so as to prevent the former and maximise the latter. >>>>

### Quality

RRI may help researchers and RIs to improve the quality of R&I processes. >>>>

### Democracy

RRI may help citizens and stakeholders to contribute to R&I (decision) making process. >>>>

### Alignment

RRI may help to align science and innovation with societal needs, values, interests and expectations. >>>>

### Self-protection

RRI may help researchers and RIs to protect themselves from risks deriving from changing science-society relations (decreasing public trust & authority of science, risks of conflicts & litigation). >>>>

### Communication

RRI may help to communicate science to public and enhance communication among researchers. >>>>

The analysis of the literature allowed to identify seven interpretative frames about RRI and Open Science which are recurrently used to mobilised researchers and research organisations.

