



Driving up institutional change towards  
open and responsible research

—

Results from 3 years FIT4RRI

# The key values of responsible and open research are...



➤ Open Science and Responsible Research & Innovation can help to approach societal challenges & have huge benefits for our society

Why is there a gap between  
the **potential & actual**  
implementation  
of RRI and Open Science in RFPOs?



# Fostering Improved Training Tools for Responsible Research & Innovation

## ➤ Assumption

- Serious gap between the **potential role** RRI & Open Science could play & the **actual impact** RRI & Open Science currently have

## ➤ Objective

- Activate institutional change with **training** & **recommendations for governance settings**

3 Years project duration

2017  
Till early 2020

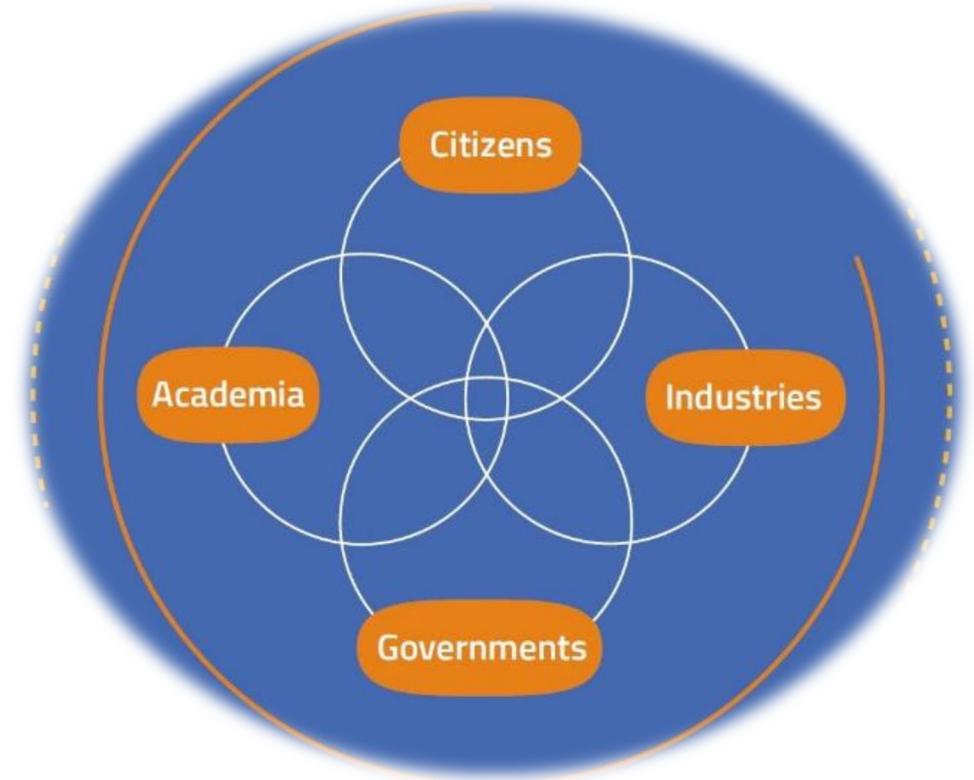
9 Countries

12 Partners



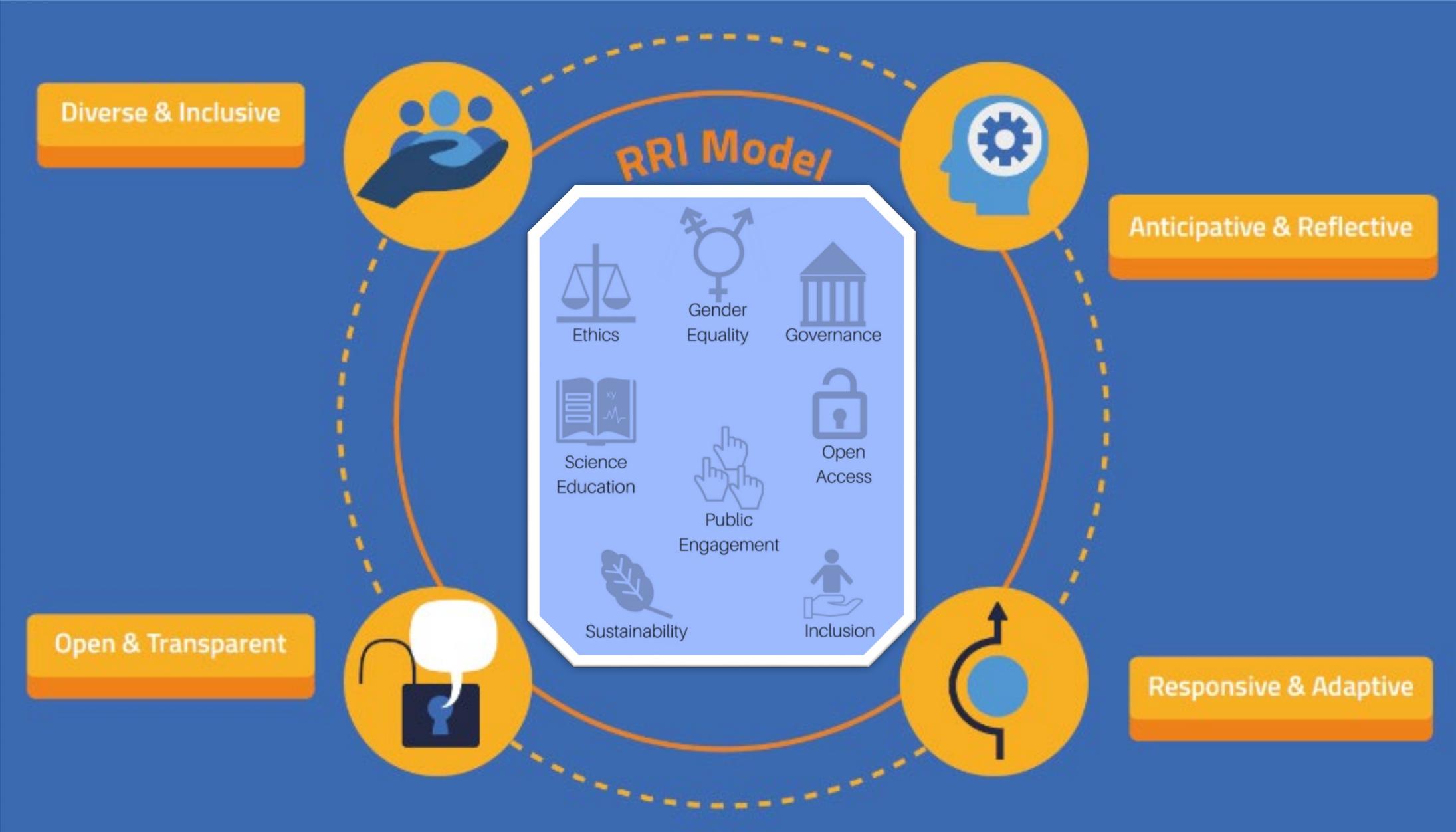
# RRI – Responsible Research & Innovation

➤ RRI seeks to bring R&I into the open to anticipate consequences & minimize potential negative impact



➤ Involving societal actors to better align processes & outcomes of R&I with values, needs & expectations of society



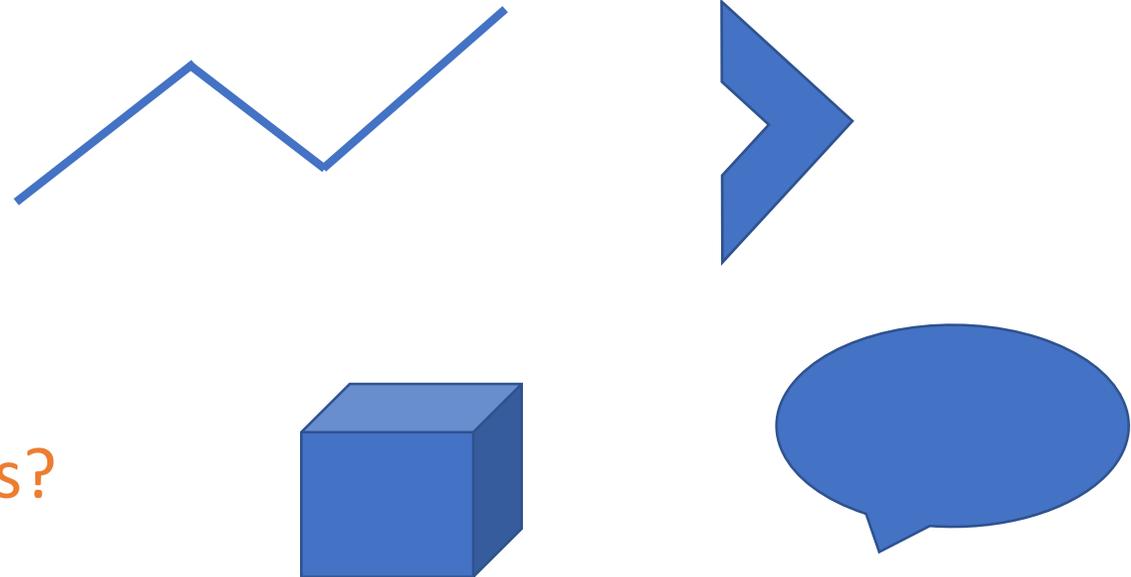


# 1 Understanding the current situation

➤ Why are RRI & OS not implemented as much as they could be? (literature review)

➤ What are

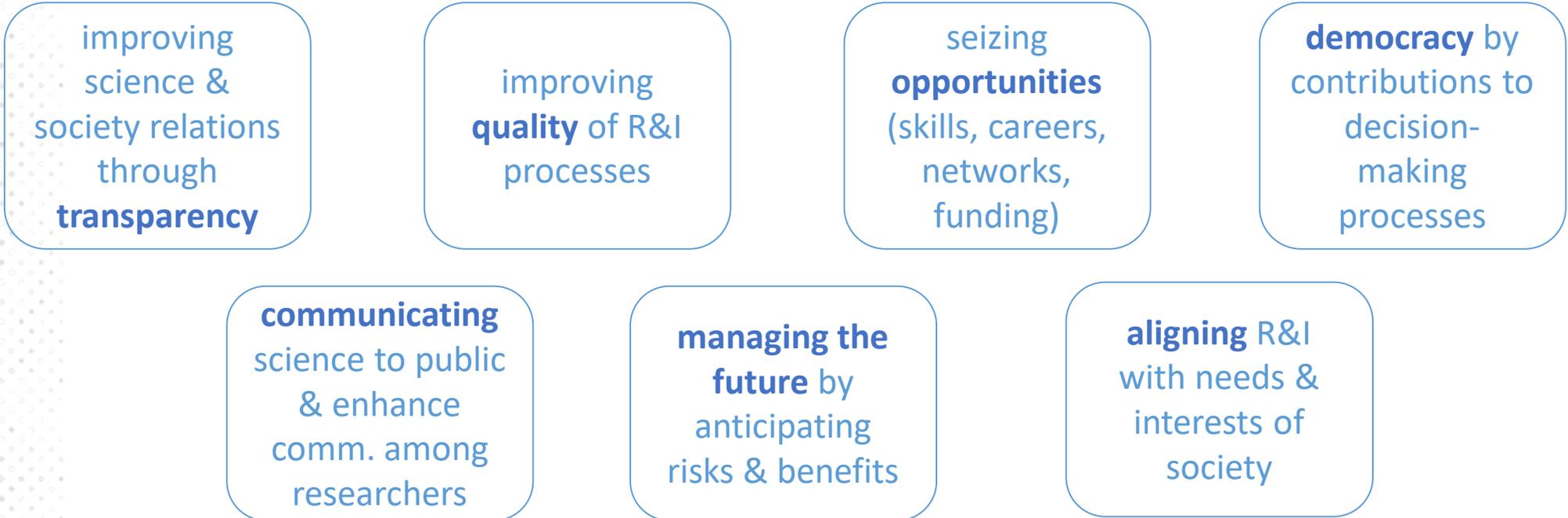
- trends,
- barriers,
- drivers,
- values & interests?



# Values & Interests



- Identification of 7 interpretative frames about RRI & Open Science that are
  - Used to mobilize researchers & RFPOs
  - Explaining why RRI and Open Science should be adopted
- RRI & OS may help...



# Analysis of main drivers

➤ What drives implementation of RRI/Open Science?

**Political  
drivers**

**Economic  
drivers**

**Social  
drivers**

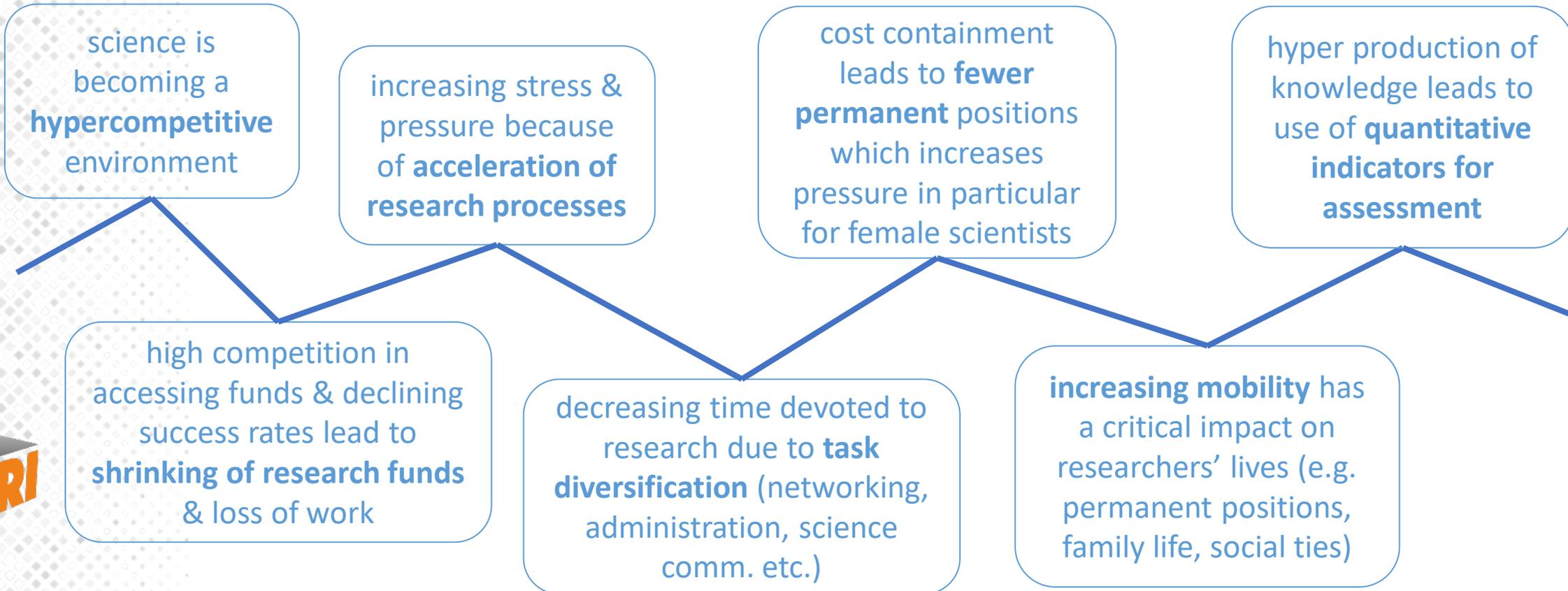
**Technological  
drivers**

**Environmental  
drivers**



# Critical trends shaping science

## ➤ Identification of critical issues pertaining to RRI & Open Science for RFPOs



# 4 main groups of barriers

## (1) Barriers related to **awareness**

- **Cultural attitudes of players** (e.g. resistance to change, RRI = risk, limitation of academic freedom)
- **Interaction between actors** (e.g. stereotypes on other actors, lack of collaborative culture)

## (2) Barriers related to **relevance**

- **Existing priority schemes** (pressure to publish, Open Access vs. IP/patenting, creating growth / making profit)
- **Dynamics of incentives** (lack of material incentives & scientific recognition, unclear benefits of RRI)

# 4 main groups of barriers

## (3) Barriers related to **effectiveness**

- **Uncertainty** about concept/process/impact
- **Requirements & Conditions** (lack of resources, skills, training)
- **Specific technical issues** (management of public participation, turning RRI output into policies)

## (4) Barriers related to **sustainability**

- Lack of investments, resistance & institutional barriers, inadequate policy framework, lack of evidence & data about RRI

## 2 Testing RRI & Open Science in institutional settings

- Co-creation experiments at 4 partner institutions



### ISQ RRI model

Develop an ISQ RRI model & implement it in R&D unit



### Photonics (Optical Monitoring)

Embed RRI principles into current ethics & science education practices



### Material Science

Implement a responsible governance in a new research center



SAPIENZA  
UNIVERSITÀ DI ROMA



### Text & Data Mining

Investigate machine accessibility of non-open access publications



# 3 Sharing what we have learnt

- New training tools
- RRI toolkit on FOSTER platform extending OS toolkit

RRI toolkit



Introduction to RRI  
Engaging the Public

Ethics in RRI  
RRI for Companies



[www.fosteropenscience.eu/rritoolkit](http://www.fosteropenscience.eu/rritoolkit)

<p><b>What is Open Science?</b></p> <p>Search version available</p> <p>This course introduces you to the idea of what open science is and how it can be used to improve your research.</p> 	<p><b>Best Practices</b></p> <p>Search version available</p> <p>This course introduces you to the best practices in your research and how to use them to improve your research.</p> 	<p><b>Managing and Sharing Research Data</b></p> <p>Search version available</p> <p>In this course you'll learn how to manage your data and how you can get the most out of it.</p> 	<p><b>OSS and Workflows</b></p> <p>Search version available</p> <p>This course introduces you to Open Source Software (OSS) and how it can be used to improve your research.</p> 
<p><b>Data Protection and Ethics</b></p> <p>Search version available</p> <p>This course introduces you to the best practices in your research and how to use them to improve your research.</p> 	<p><b>Open Licensing</b></p> <p>Search version available</p> <p>This course introduces you to the best practices in your research and how to use them to improve your research.</p> 	<p><b>Open Access Publishing</b></p> <p>Search version available</p> <p>This course introduces you to the best practices in your research and how to use them to improve your research.</p> 	<p><b>Sharing Preprints</b></p> <p>Search version available</p> <p>This course introduces you to the best practices in your research and how to use them to improve your research.</p> 

[www.fosteropenscience.eu/toolkit](http://www.fosteropenscience.eu/toolkit)



# 3 Sharing what we have learnt

- Guidelines on governance settings to activate institutional change



# Recommendations for **Interpretation**

- Part I – provides orientation for interpreting the changes affecting one's research organisation

**1**

**Changes affecting Science**

**2**

**A responsible & open Science**

# Recommendations for **Interpretation**

1. **Map main trends** of change affecting your organization
2. **Foster internal debate** on changes occurring + measures to address them
3. **Establish tools** for monitoring & anticipating trends
4. **Make an inventory** of actions & measures already in place/ planned
5. **Identify people & resources** already involved with RRI & OS
6. **Raise awareness & disseminate** RRI & OS knowledge among staff



# Recommendations for **Decision**

- Part II – focuses on the decisions to be made for activating the governance setting process

**3**

**Defining a tailored RRI/OS profile**

**4**

**Choosing the governance setting**



# Recommendations for **Decision**

7. **Define RRI/OS profile** for your organization through an open decision-making process
8. **Document decision-making process** & results openly accessible
9. **Keep a process-like view** of the RRI/OS profile and following an open and step-by-step approach
10. **Choose governance setting model** primarily on the basis of feasibility
11. **Scrutinize external resources** to learn from
12. **Test the governance setting** before starting the process



# Recommendations for **Action**

- Part III – deals with the actions to be carried out in the context of the governance setting process

**5**  
Activating the  
governance setting  
process

**6**  
Implementing the  
governance setting  
process

**7**  
Completing the  
governance setting  
process



# Recommendations for **Action**

13. **Establish a team** capable to activate the process
14. **Ensure transparency, inclusiveness & visibility** of process
15. **Make RRI & OS part of “core business”** from the beginning
16. **Activate negotiation processes** within organization aimed at modifying current practices, rules, and views
17. **Look for external backing** to enhance the process
18. **Adopt an iterative approach** in implementing the process
19. **Carefully plan & implement changeover** to organizational structures
20. **Include RRI & OS in organizational standards/practices** (mainstreaming approach)
21. **Create social & communication procedures** for participation





# Helene Brinken



GEORG-AUGUST-UNIVERSITÄT  
GÖTTINGEN

Project Officer FIT4RRI

[brinken@sub.uni-goettingen.de](mailto:brinken@sub.uni-goettingen.de)



[fit4rii.eu](http://fit4rii.eu)



[@fit4rriEU](https://twitter.com/fit4rriEU)



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 741477.

# References

- Luciano D'Andrea, Federico Luigi Marta, Nina Khama, & Susanna Vase. (2017, December 31). FIT4RRI D1.1 - Report on the Literature Review. Zenodo. <http://doi.org/10.5281/zenodo.1434349>
- Harro Van Lente, Zahar Koretsky, & Ragna Zeiss. (2018, June 21). FIT4RRI D2.2 - WP2 Summary Report. Zenodo. <http://doi.org/10.5281/zenodo.1434358>
- Luciano d'Andrea and Federico Marta, (2019, August 31). FIT4RRI 5.1 - Guidelines on governance settings for RRI.

