Responsible Research and Innovation

A cross-cutting issue in Horizon 2020

A systemic approach to science and society

University of Aveiro
January 2018

universidade
de aveiro
gabinete de apoio
à investigação

Not a new thing...

Treaty on the EU *(art.3)*

*'The Union shall (...) work for the **sustainable development of Europe** based on **balanced economic growth and price stability**, a **highly competitive social market economy**, aiming at **full employment and social progress**, and a high level of **protection and improvement of the quality of the environment**. It shall promote **scientific and technological advance**.'*
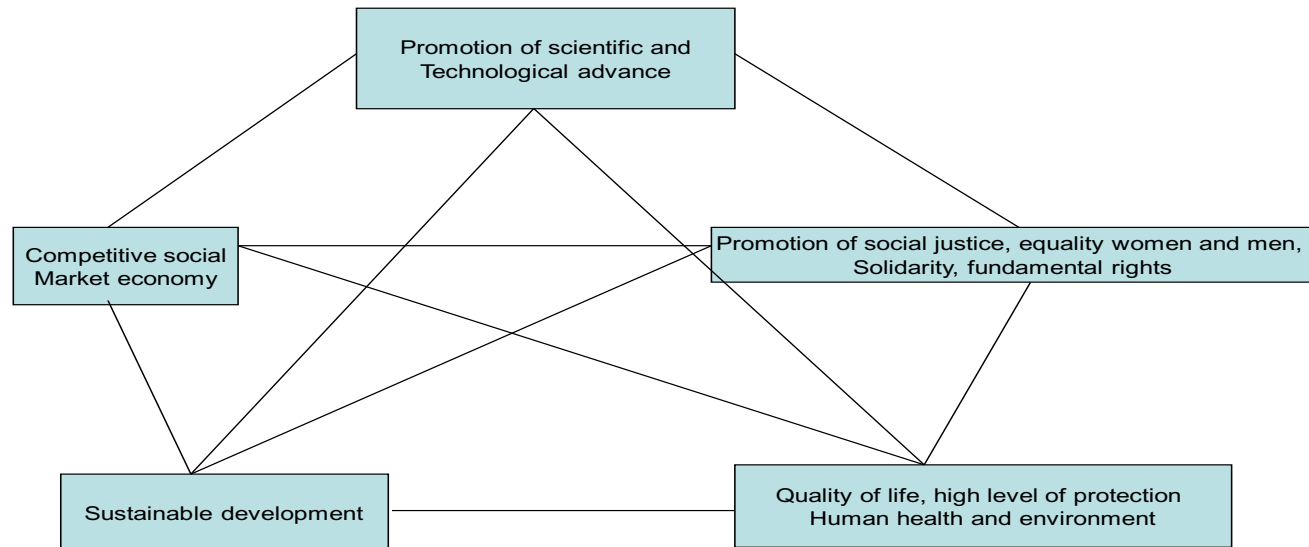
Normative Anchor points derived from the Treaty on the European Union

universidade de aveiro
gabinete de apoio
à investigação

Society is facing many challenges today…

Health, demographic change, and wellbeing	Food, agriculture and forestry, and water	Secure, clean and efficient energy	Smart, green and integrated transport

Climate action, environment, and resources

Europe in a changing world: inclusive, innovative and reflective societies

Secure societies: freedom and security of Europe and its citizens

…like these (7) identified by the European Commission

and science & technology sometimes create risks and dilemmas...

- GMOs
- Fracking (= oil and natural gas extraction)
- food safety
- affordable medication

  among others...

Society needs a new R&I approach to address present
and future controversies more efficiently.

Responsible Research and Innovation is a transparent, interactive process by which societal actors and innovators become mutually responsive to each other with a view to the (ethical) acceptability, sustainability and societal desirability of the innovation process and its (marketable) outcomes and impacts.
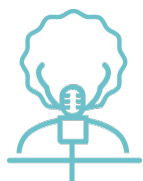
René von Schomberg, 2013

**RRI is expected to tackle existing and emerging challenges by aligning values, needs and expectations
of all actors involved in Research and Innovation**

| POLICY MAKERS	RESEARCH COMMUNITY	EDUCATION COMMUNITY	BUSINESS & INDUSTRY	CIVIL SOCIETY ORGANISATIONS
From funders to policy officers, research centre directors and representatives of learned societies, whether at a European, national, or local scale	Researchers, innovators, research managers, public affairs and communication officers, and all those who support the diversity of the R&I system	Teachers, students, science museums' staff, families and all those concerned with education at all levels	From contractors and SMEs to large transnational companies with strong R&I activity	From individuals to organisations, NGOs and the media, civil society is crucial to shape the R&I our society needs

universidade de aveiro
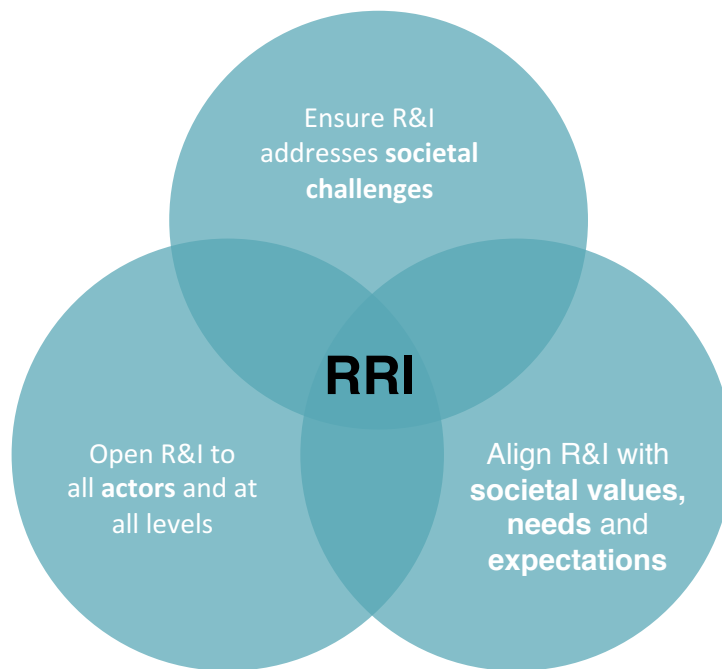gabinete de apoio
à investigação

7
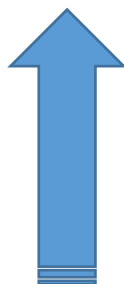
MARKET-BASED INNOVATION ⟶ RESPONSIBLE INNOVATION

- State responsibility for risks

- Macro-economic assessment: 'infinite growth'

- steer less, inherently good

- 'the faster, the better'

- Technology-oriented R&D

- State responsibility for `right' impacts of R&I

- Economic and societal impact of 'knowledge'': 'sustained growth'

- responsive to basic needs, reflect basic values

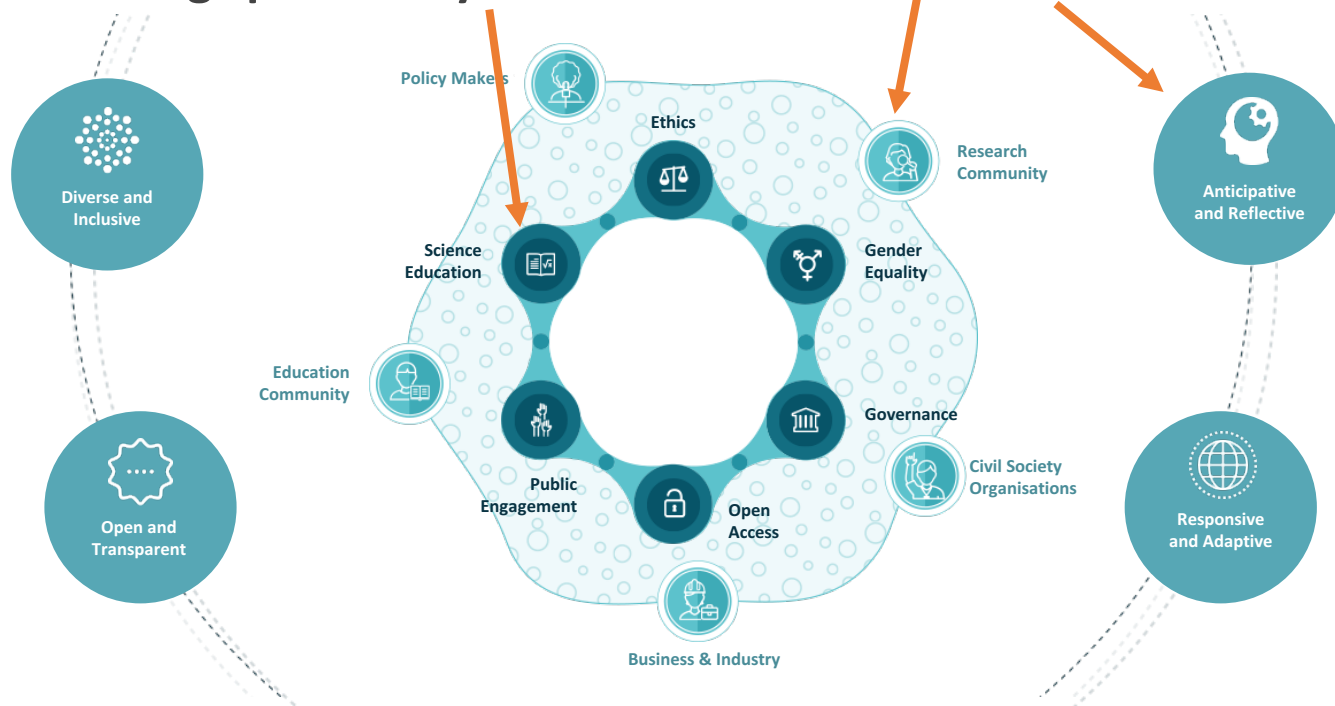- Innovation is 'managed'

- Issue-oriented R&I

What do you do when you do RRI?

Ensure R&I addresses **societal challenges**

RRI

Open R&I to all **actors** and at all levels

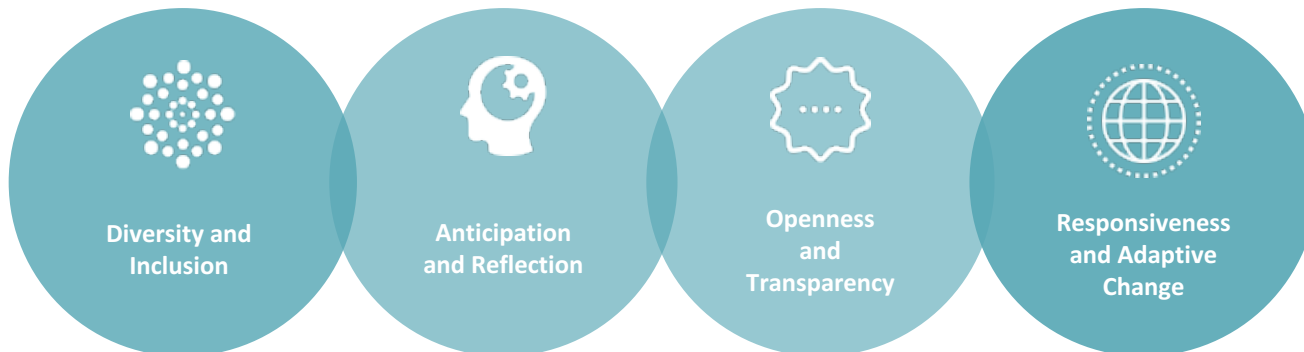Align R&I with **societal values, needs** and **expectations**

RRI seeks to **bring issues related to R&I into the open** in order to anticipate their consequences, and to **involve society** in discussing how science and technology may help us **create the world we want**.

universidade de aveiro
gabinete de apoio
à investigação

9

RRI is about: including all actors,

and considering specific key issues   and process dimensions

Implementing RRI: 4 process dimensions

Diversity and Inclusion

Anticipation and Reflection

Openness and Transparency

Responsiveness and Adaptive Change

universidade de aveiro
gabinete de apoio à investigação

These process dimensions mean

New actors need to be involved and listened to in the early stages of R&I

Be sensitive to research biases, seek originality, include diverse voices and make results beneficial to a wider community

Diversity and Inclusion

Anticipation and Reflection

R&I should care about how its own dynamic will affect the future

Think of the purposes and possible implications of your research and its results, and consider alternative methods

R&I should be open to society in a meaningful and honest way

Openness and Transparency

Responsiveness and Adaptive Change

R&I needs values and processes to adapt to emerging knowledge and needs

Share objectives, methods and results, be realistic about limits and mistakes, and inform about conflicts of interests

Be flexible to changes and external inputs, adapting your research plans to changing social values and expectations

universidade de aveiro
gabinete de apoio
à investigação

12

A normative framework for RRI: the 6 Policy Agendas

ETHICS	**GENDER EQUALITY**	**GOVERNANCE**	**OPEN ACCESS**	**PUBLIC ENGAGEMENT**	**SCIENCE EDUCATION**
Ensuring research integrity, and science & society	Promoting human resources in research for attaining gender balance	Providing instruments to foster shared responsibility in R&I practices	Guaranteeing access to scientific knowledge to boost R&I	Fostering collaborative and multi-actor processes in R&I	Increasing the knowledge and skills of citizens in order to promote scientific vocations and participation

At UA?

-The Ethics and Deontology Council is the advisory and support body for governing bodies in matters of ethics and deontology.	- Open, transparent and gender-equal work opportunities at the University.	- UA endorsement of the principles laid down in the European Charter for Researchers and the Code of Conduct for the Recruitment of Researchers (2016).	-Creation and update of the institutional repositorium -Participation in the OpenAire project	-Promotion of r&d projects with societal actors as city hall, parishes and social institutions. -Participation of citizens in EU citizen jury projects.	-Promotion of open science days and other scientific activities with and for societies.

RRI is a way to do research that takes a long-term perspective on the type of world in which we want to live

Adopting RRI results into the following outcomes

LEARNING OUTCOMES	R&I OUTCOMES	SOLUTIONS TO SOCIETAL CHALLENGES
Engaged publics Responsible actors Responsible institutions	Ethically acceptable Sustainable Socially desirable	Seven Grand Challenges identified by the EC

RRI can empower science communities to bond with society in solving our world's challenges, providing:

⭐ A whole new framework: new thinking, new principles, new processes

⭐ A more society-centered Research and Innovation

⭐ A wealth of funds through the EC's R&I programmes (Horizon 2020…)

RRI across Horizon 2020

Choose together

Engagement (including Citizen Science)

Unlock the full potential

Gender Equality

Creative learning fresh ideas

Science Education

Do the right "think" and do it right

Ethics

Share results to advance

Open Access

Responsible Research and Innovation

SWAFS and RRI in HORIZON 2020

Three main priorities

(Part I) Excellent science,   EUR 24441 million

(Part II) Industrial leadership,   EUR 17015 million

(Part III) Societal challenges,   EUR 29679 million

Part V: Science with and for Society   EUR 462,2 million

RRI is coherent across H2020 and in line (*or overlap*) with the 3Os of EU Comissioner Carlos Moedas

Open Science
Open Innovation
Open to the World

Open Access

Ethics

Gender

Governance

Science Education

Public Engagement

RRI

universidade de aveiro
gabinete de apoio
à investigação

17
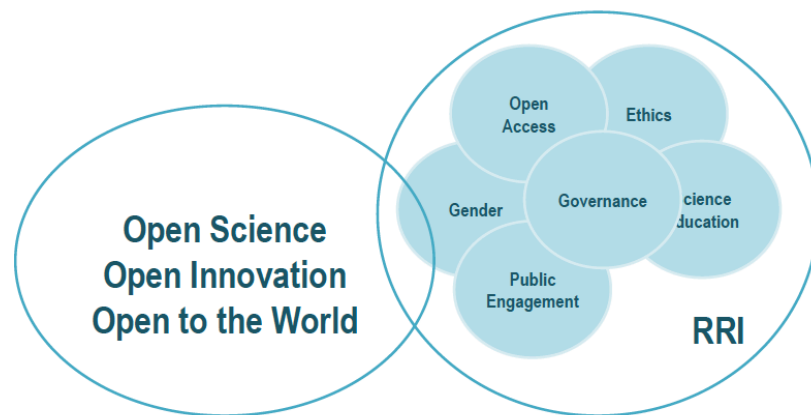
RRI in Horizon 2020 WP 2018-2020

• narratives more elaborated and calling attention to RRI – don't ignore.
• transversal and cross-cutting in the Horizon 2020 WP
• proposals shall evidence the RRI challenges, the strengths and weaknesses of each area
• relating directly to topics as necessary

Example of narrative:

14. Secure societies –Protecting freedom and security of Europe and its citizens

The calls under 'Secure societies –Protecting freedom and security of Europe and its citizens' are in line with the Horizon 2020 Responsible Research and Innovation (RRI) cross-cutting issue, engaging society on sensitive security issues, integrating the gender and ethical dimensions, ensuring the access to security research outcomes whenever possible and encouraging formal and informal science education relating to security. Activities will be multi-actor and underpinned by public engagement.

Read the call text carefully and pay attention to RRI objetives & dimensions.

universidade
de aveiro
gabinete de apoio
à investigação

H2020-SWAFS-2018-2020 – the exclusive source for RRI dimensions?

Science with and for society will help citizens, organisations and territories to open a new chapter of their development through joint research and innovation activities in five strategic orientations. It will contribute to the implementation of Responsible Research and Innovation through institutional governance changes in Research Performing (RPOs) and Funding Organisations (RFOs), focusing on developing new partnerships and involving researchers, policy makers, citizens and industry.

Strategic orientation 1. Accelerating and catalysing processes of institutional change

Strategic orientation 2. Stepping up support to Gender Equality in Research & Innovation policy

Strategic orientation 3. Building the territorial dimension of SwafS partnerships

Strategic orientation 4. Exploring and supporting citizen science

Strategic orientation 5. Building the knowledge base for SwafS

Research participant portal

Search by:

- Topics with a RRI dimension

- Date: 12th January 2018

- [48 results](#) for open calls

- [104 results](#) for open and forthcoming calls

Topics with a Responsible Research & Innovation Dimension

Responsible Research and Innovation (RRI) means societal actors (researchers, citizens, policy makers, businesses, third sector organisations, etc.) working together during the whole research and innovation process to align the processes and outcomes with the values, needs and expectations of society. In practice, RRI is implemented as a package that includes public engagement in research and innovation, e.g. citizen science, enabling easier access to scientific results, the take-up of the gender dimension and ethics in the research and innovation content and process, and formal and informal science education.

104 Results

Status ☑Forthcoming ☑Open ☐Closed

Sort by ○(Planned) opening date ○Deadline ○Topic title ●Topic identifier

Topic: SwafS-21-2018: Advancing the Monitoring of the Evolution and Benefits of Responsible Research and Innovation   **Open**
Publication date: 27 October 2017

Types of action: RIA Research and Innovation action
DeadlineModel: single-stage
Opening date: 05 December 2017   **Deadline:** 10 April 2018 17:00:00

Time Zone : (Brussels time)

Topic: SwafS-20-2018-2019: Building the SwafS knowledge base   **Open**
Publication date: 27 October 2017

Types of action: RIA Research and Innovation action
DeadlineModel: two-stage   **Deadline:** 10 April 2018 17:00:00
Opening date: 05 December 2017   **2nd stage Deadline:** 13 November 2018 17:00:00

Time Zone : (Brussels time)

Topic: SwafS-19-2018-2019: Taking stock and re-examining the role of science communication   **Open**
Publication date: 27 October 2017

Types of action: RIA Research and Innovation action
DeadlineModel: single-stage
Opening date: 05 December 2017   **Deadline:** 10 April 2018 17:00:00

Time Zone : (Brussels time)

Topic: SwafS-18-2018: Taking stock of the application of the precautionary principle in R&I   **Open**
Publication date: 27 October 2017

Types of action: RIA Research and Innovation action
DeadlineModel: single-stage
Opening date: 05 December 2017   **Deadline:** 10 April 2018 17:00:00

Time Zone : (Brussels time)

universidade de aveiro
gabinete de apoio
à investigação

20

Not only Swafs…

SC9- Sustainable Food Security

Cross-cutting Priorities:
RRI
Gender
Socio-economic science and humanities
Blue Growth

Topic: DT-SFS-14-2018: Personalized Nutrition	Open
Publication date: 27 October 2017	
Focus area: Digitising and transforming European industry and services (DT)	
Types of action: IA Innovation action	
DeadlineModel: single-stage	
Opening date: 31 October 2017 **Deadline:** 13 February 2018 17:00:00	
	Time Zone : (Brussels time)

SC9- Sustainable Food Security

Cross-cutting Priorities:
International cooperation
Blue Growth
RRI
Gender
Socio-economic science and humanities

Topic: LC-SFS-03-2018: Microbiome applications for sustainable food systems	Open
Publication date: 27 October 2017	
Focus area: Building a low-carbon, climate resilient future (LC)	
Types of action: IA Innovation action	
DeadlineModel: single-stage	
Opening date: 31 October 2017 **Deadline:** 13 February 2018 17:00:00	
	Time Zone : (Brussels time)

SC9- Sustainable Food Security

Cross-cutting Priorities:
Blue Growth
Socio-economic science and humanities
RRI

Topic: CE-RUR-08-2018-2019-2020: Closing nutrient cycles	Open
Publication date: 27 October 2017	
Focus area: Connecting economic and environmental gains - the Circular Economy (CE)	
Types of action: RIA Research and Innovation action	
DeadlineModel: two-stage **Deadline:** 13 February 2018 17:00:00	
Opening date: 31 October 2017 **2nd stage Deadline:** 11 September 2018 17:00:00	
	Time Zone : (Brussels time)

universidade de aveiro
gabinete de apoio
à investigação

21

Regarding Health and biomedicine...
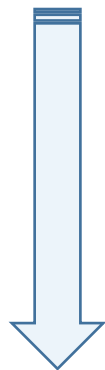
Personal, predictive, and preventive

Stakeholders in research priority setting

In sum:

RRI enables a broader way of defining researchers and their role in society, helping both science and society to consider long-term issues.

Engaging all actors in research according to RRI values can yield results better suited to societal needs.

Paying attention to RRI orientations will strengthen research projects by emphasizing openness, transparency, diversity, inclusiveness and adaption to changes. Evaluators will check it.

Need help?

The RRI Toolkit: A wealth of resources to help you implement RRI

TOOLS
Use manuals, guidelines, and 'how tos' to implement RRI.

INSPIRING PRACTICES
Find inspiration in RRI success stories across Europe.

PROJECTS
Get to know other projects on RRI and find potential partners.

LIBRARY
Learn of RRI from articles, reports, cross-analyses, and more.

HOW TOs
Get concrete examples on how to put RRI into practice in different contexts.

SELF-REFLECTION TOOL
Reflect on how RRI your own professional practice is.

TRAINING MATERIALS
Organise trainings in RRI using showcases and presentations.

COMMUNICATION MATERIALS
Spread the word on RRI with videos and presentations.

Get concrete examples on how to put RRI into practice

How Tos offer guidance and concrete examples on the use of specific resources from the Toolkit to address common challenges faced by the Research Community in its daily work, such as:

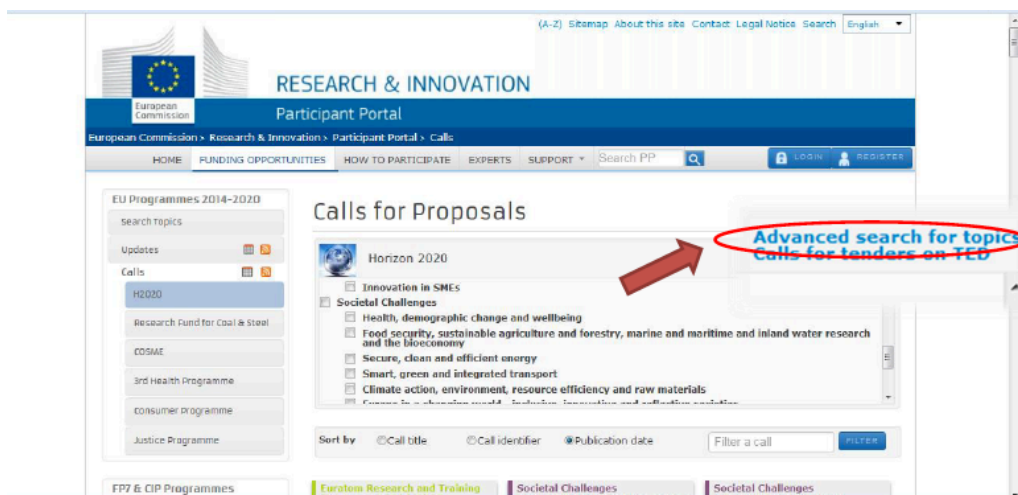| How to incorporate RRI in policy/funding institutions | How to incorporate RRI in higher education institutions | How to set up a participatory research agenda | How to incorporate the RRI principles in a funding call | How to design a RRI-oriented project proposal | How to co-create community-based participatory research | How to embed RRI in citizen science |

How Tos in detail

By clicking on a How To you will access the **complete guideline** for its implementation

universidade de aveiro
gabinete de apoio
à investigação

26

Where to identify RRI opportunities?

3 0'S

RRI

Some useful links:

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

https://www.rri-tools.eu/

http://www.sisnetwork.eu/rri/

https://res-agora.eu/rri-resources

Thank You & Contact Us!!!

Research Support Office – research@ua.pt

Luísa Fernandes Sal - luisa.fernandes@ua.pt
Phone: (+351) 234370848, ext. 52113
Fax: (+351) 234370089

Tatiana Lima Costa - tatiana.costa@ua.pt
Phone: (+351) 234247190, ext. 22016
Fax: (+351) 234370089

Vera Fernandes - verafernandes@ua.pt
Phone: (+351) 234401571, ext. 22098
Fax: (+351) 234370089

universidade
de aveiro
gabinete de apoio
à investigação