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CONTEXT.

The Directorate-General for Research and Innovation of the European Commission is determined **to bridge the gap between the scientific community and society at large.**

In 2001, the «Science and Society» Action Plan was launched to set out a common strategy to make a better connection between science and European citizens.

In 2007, under the 7th Framework Programme for Research and Technological Development (FP7), «Science and Society» became «Science **in** Society (SiS)» with the main **objective to foster public engagement and a sustained two-way dialogue between science and civil society.**

Since 2010 the focus of SiS has been to develop a concept responding to the aspirations and ambitions of European citizens: a framework for Responsible Research and Innovation (RRI). The grand societal challenges that lie before us will have a far better chance of being tackled **if all societal actors are fully engaged in the coconstruction of innovative solutions, products and services.**

2015 -- Science with and for Society (SWAFS)

Responsible Research and Innovation means that societal actors work together during the whole research and innovation process in order to better align both the process and its outcomes, with the values, needs and expectations of European society.

RRI is an ambitious challenge for the creation of a Research and Innovation policy driven by the needs of society and engaging all societal actors via inclusive participatory approaches.

CONTEXT.

- The Responsible Research and Innovation framework consists of 6 **keys**:

- 1) Science Education
- 2) Open Acces
- 3) Ethics
- 4) Engagement
- 5) Gender
- 6) Governance

Elementos de la RRI



COM S'IMPLEMENTA?

- Bàsicament a través **Science with and for Society (SWA)**
- Però ahora està integrada en altres convocatòries, es considera un “cross cutting issue”

Ejemplo de Texto RRI (WP 2016-2017):

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

Significado de Investigación e Innovación Responsable:

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) crosscutting 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.**

Topic	FETOPEN-02-2016: FET-Open Coordination and Support Actions
Key words	Engagement, Science Education
Type of Action	Coordination and support action
Deadline	11-05-2016
Link	http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/2228-fetopen-02-2016.html

FET Communication [2016]: raising the visibility and impact of FET through novel and creative approaches for reaching out to various stakeholders and well beyond the research communities. This may include, for example, collecting, aggregating and disseminating information from the entire range of FET projects and activities, and using an appropriate mix of channels and formats to engage with the target audiences, including scientists, students, media, policy makers, the business community and the general public. This subtopic should include public engagement processes as discussed in the introduction of this FET Work Programme.

Topic	NMBP-34-2017: Governing innovation of nanotechnology through enhanced societal engagement
Key words	Engagement, Responsible Research and Innovation, Science Education
Type of Action	Coordination and support action
Deadline	19-01-2017
Link	https://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/2384-nmbp-34-2017.html

technologies. Furthermore it will contribute to the concrete realisation of RRI conditions in nanotechnologies, and produce policy recommendations on how to govern research & innovation in nanotechnologies (and other emerging technologies) in a responsible way. The

Science Education

- ✓ enhancing the current education process to better equip citizens with the necessary knowledge and skills so they can participate in R&I debates
- ✓ increasing the number of researchers (promote scientific vocations)



“Creative learning fresh ideas” Europe must not only increase its number of researchers, it also needs to enhance the current education process to better equip future researchers and other societal actors with the necessary knowledge and tools to fully participate and take responsibility in the research and innovation process. There is an urgent need to boost the interest of children and youth in maths, science and technology, so they can become the researchers of tomorrow, and contribute to a science-literate society. Creative thinking calls for science education as a means to make change happen.

Science Education. Examples



Science Shops

- Normalmente ubicadas en universidades
- Invitan a entidades de la sociedad civil a sugerir temas de investigación potencial
- Estudiantes llevan a cabo las investigaciones
- 40 años de tradición en Europa y a nivel global
- Promueven la cultura de investigación
- Promueven cambio transformativo

Citizen Science

- Proyectos de investigación que invitan a la ciudadanía a aportar datos
- Investigación estructurada donde el balance entre objetivos de investigación, educación, sociales y políticos varia según el proyecto.

Fuente: La Investigación y la Innovación Responsables (RRI). Investigación más abierta e inclusiva, que responda mejor a las necesidades de la ciudadanía. Rosina Malagrida, Responsable del Living Lab de Salud de IrsiCaixa, 2017.

Science weeks, Scientific coffees, Open doors for science, etc

Open Acces



- ✓ **Social knowledge** growth through accessible science
- ✓ Breaking barriers to knowledge and **improving science collaboration for a better future**
- ✓ Enhances forms and levels of openness and transparency of R&I processes facilitating **society's participation**.



“Share results to advance” In order to be responsible, research and innovation must be both transparent and accessible. To make Open Access a reality means giving free online access to the results of publicly-funded research (publications and data). This will boost innovation and further increase the use of scientific results by all societal actors.

Open Acces. Servei de Biblioteques, Publicacions i Arxius de la UPC



Serveis que s'ofereixen als investigadors



- ✓ Open Access y Open Data. Obligacions segons mandat de la CE.
- ✓ Llistat de possibles revistes on publicar.
- ✓ Informació adicional: preus, períodes d'embargament, repositoris, [com elaborar un pla de gestió de dades](#) en projectes H2020, etc

Font: [Requerimientos de Open Access y Open Data en proyectos europeos](#), Anna Rovira, Conferència Anual de la RedOTRI 2018



Les despeses de les publicacions en obert són elegibles en projectes H2020

Ethics

- ✓ Reflecting on people's ideas and concerns about R&I
- ✓ Deliberating on the **moral issues of R&I** with a diversity of actors
- ✓ Aligning research to social values
- ✓ Sharing **responsibility** for the impacts of science



Do the right “think” and do it right. In order to adequately respond to societal challenges, research and innovation must respect fundamental rights and the highest ethical standards. Beyond the mandatory legal aspects, this aims to ensure increased **societal relevance and acceptability of research and innovation outcomes**. Ethics should not be perceived as a constraint to research and innovation, but rather as a **way of ensuring high quality results**.



Ethics. H2020 ethics review procedure and check list examples

Activity	Who?	When?
Ethics self-assessment	Applicant	Proposal phase
Ethics screening and assessment*	Ethics experts	Evaluation phase
Ethics check/audit	Ethics experts	Implementation phase

Fuente: http://ec.europa.eu/research/participants/docs/h2020-funding-guide/cross-cutting-issues/ethics_en.htm

- ✓ **Protecció de dades i privacitat:** *anonimització* de les dades, codificació, encriptació, emmagatzematge,
- ✓ **Investigació clínica.** La intervenció humana no està justificada des d'una perspectiva ètica ni pel que fa a la protecció de dades (especialment aquelles sensibles), s'ignoren els formularis de consentiment.
- ✓ **Investigació amb animals.** No es fa referència a la metodologia, si existeixen alternatives per no fer ús d'animals, etc.
- ✓ **Participació de tercers països.**
- ✓ Referència a la **normativa aplicable** d'àmbit europeu, nacional i regional.

Engagement



- “Choose together”

The first key is **Engagement** of all societal actors - researchers, industry, policymakers and civil society – and their joint participation in the research and innovation process, in accordance with the value of inclusiveness, as reflected in the Charter of Fundamental Rights of the European Union.

A sound framework for excellence in Research & Innovation entails that the societal challenges are framed on the basis of widely representative social, economic and ethical concerns and common principles.

Moreover, mutual learning and agreed practices are needed to develop **Responsible Research and Innovation** joint solutions to societal problems and opportunities, and to pre-empt possible public value failures of future innovation.

Engagement. EXAMPLES



- IMRR Project - Integrated and sustainable water management of the Vietnamese Red-Thai Binh River System in a changing climate-**
 The IMRR project aims at developing and promoting strategies for the sustainable management of the Red-Thai Binh Rivers System in Vietnam through coordinated decision-making and negotiation, supported by modelling and optimization tools and through capacity building of local authorities in the water sector.
- MalariaSpot - play the 'Crandy Crush' against malaria.** This project develops collective tele-diagnosis systems to empower citizens to collaborate in solving global health challenges
- The “mobility of care”:** a new concept and category in transportation. The project’s objective was to use a gender perspective to analyse the main Spanish transportation surveys and to propose measures for improvement

Some Comments Experts (*Evaluation Summary Report (ESR)*):

- ✓ SC1: The project includes close collaboration with patient associations
- ✓ SC6: End-users and stakeholders are considered as part of the project and networking
- ✓ SC6: Engagement with several endusers and stakeholders is proposed which is good.
- ✓ SC2: The strategy will target a variety of actors (... NGOs, young professionals, citizens and other actors involved) with dedicated communication tools.
- ✓ NMP: It is not fully explained how affordable the developed solutions will be to the end-users
- ✓ PHC: However, other elements such as enhancement of citizen participation and participatory management concepts are much less developed
- ✓ SWAFS: There is a lack of provision for two-way information exchange between scientists and society.

Gender

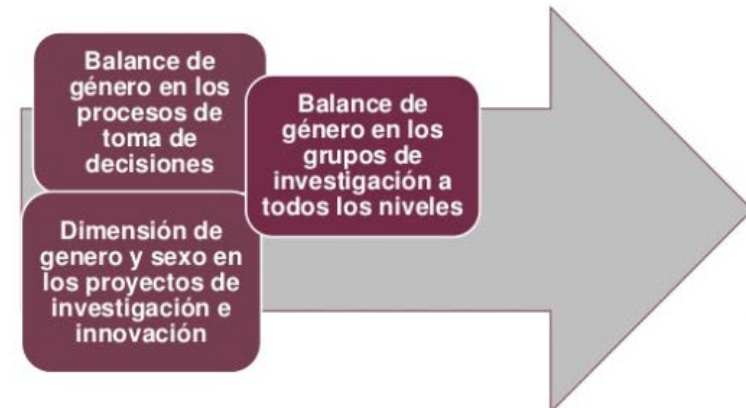


- **“Unlock the full potential”**

The second key is **Gender Equality**. Engagement means that all actors – women and men – are on board. The under-representation of women must be addressed. Research institutions, in particular their human resources management, need to be modernized. **The gender dimension must be integrated in research and innovation content**

- **Género en H2020, 3 objetivos:**

*Reglamento Horizon
2020, Art. 14*



Gender. EXAMPLE

- Política d'igualtat de la UPC. Línea estratègica 8. <https://igualtat.upc.edu/ca>

8. Projectes de recerca amb perspectiva de gènere

Fomentar la inclusió de la perspectiva de gènere en els projectes de recerca i impulsar la participació de la UPC en projectes de recerca relacionats amb la igualtat de gènere.

- La UPC està adherida al Charter and Code. . Concretament art 37 es dedica a l'equilibri entre els 2 sexes <http://www.upc.edu/euresearch/en/news/human-resources-strategy-for-researchers>
- Referent a l'estratègia de la **HRS4R**, l'acció número 6 es concentra en temes de gènere.

Action number
Title
Details

- Formació de Gabinet de Sostenibilitat i d'Igualtat d'Oportunitats (GSIO).** Organitza: Gabinet de sostenibilitat i d'Igualtat d'Oportunitats <https://www.upc.edu/igualtat/recursos-i-formacio>

Títol
La Igualtat i la Universitat
Com introduir la perspectiva de gènere en els projectes d'investigació
Taller programa de mentoria M2m UPC.
La perspectiva de gènere en la redacció científicotècnica en anglès: orientacions pràctiques



- **“Design science for and with society”**

The last dimension is the umbrella for all the others: it is **Governance**.

Policymakers also have a responsibility to prevent harmful or unethical developments in research and innovation.

Through this key we will develop harmonious models for Responsible Research and Innovation that integrate public engagement, gender equality, science education, open access and ethics.

Governance. Examples

RUNIN – The Role of Universities in Innovation and Regional Development

The aim of the RUNIN network program is to train researchers on how universities contribute to innovation and economic growth in their regions through research seeking to examine how universities fulfill their third mission in relation to regional industry and explore the range of university engagement with regional firms and institutions.

The network program focuses on how universities can contribute to innovation and regional development through four main themes:

- › People and Networks
- › Policies and Interventions
- › Places and Territories
- › Practices and Governance.



Topic: **AMIF-2017-AG-INTE-02: Community Building at local level for integration including through volunteering activities**

Closed

Publication date: 26 October 2017

Types of action: AMIF-AG AMIF Action Grant

DeadlineModel: single-stage

Opening date: 21 November 2017

Deadline: 01 March 2018 17:00:00

Time Zone : (Brussels time)

IMPACTE SOCIAL

Impacte social (long term) és la millora que s'obté a partir dels coneixements creats (short term), la transferència (mid term) dels resultats i la disseminació d'aquests

Com es pot valorar l'impacte social?

- % de millora respecte la posició inicial , p.ex: valorats per la ciutadania. Alineació amb els objectius globals de desenvolupament sostenible <https://sustainabledevelopment.un.org/>
- “replicabilitat” de l'impacte
- Publicació de l'impacte social no només per organismes governamentals
- Sostenibilitat en el temps més enllà del projecte

Referències. Documents i links

- [RRI Oportunities in H2020](#)
- [RRI toolkit](#)
- [RRI leaflet](#)
- [Informe sobre la Educación Científica, para promover el concepto de Investigación e Innovación Responsable \(RRI\) en la Sociedad europea](#)
- [Scientix es la comunidad para la enseñanza de las ciencias en Europa](#)
- [Towards better access to scientific information: Boosting the benefits of public investments in research](#)
- [Open access means video](#)
- [UPC access obert](#)
- [Horizon 2020 - Regulation of Establishment: Ethical principles \(Article 19\)](#)



<https://twitter.com/RRITools>

Who are the main actors in R&I processes?



POLICY MAKERS

From funders to policy officers, research centre directors and representatives of learned societies, whether at a European, national, or local scale



RESEARCH COMMUNITY

Researchers, innovators, research managers, public affairs and communication officers, and all those who support the diversity of the R&I system



EDUCATION COMMUNITY

Teachers, students, science museums' staff, families and all those concerned with education at all levels



BUSINESS & INDUSTRY

From contractors and SMEs to large transnational companies with strong R&I activity



CIVIL SOCIETY ORGANISATIONS

From individuals to organisations, NGOs and the media, civil society is crucial to shape the R&I our society needs