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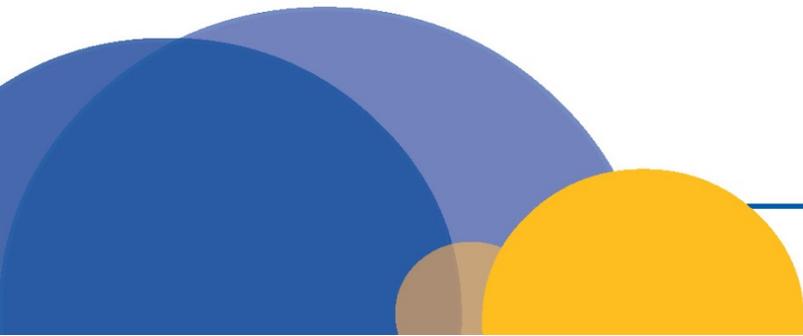


Proactive Enhancement
of Human Performance in Border Control

Ways to operationalize RRI



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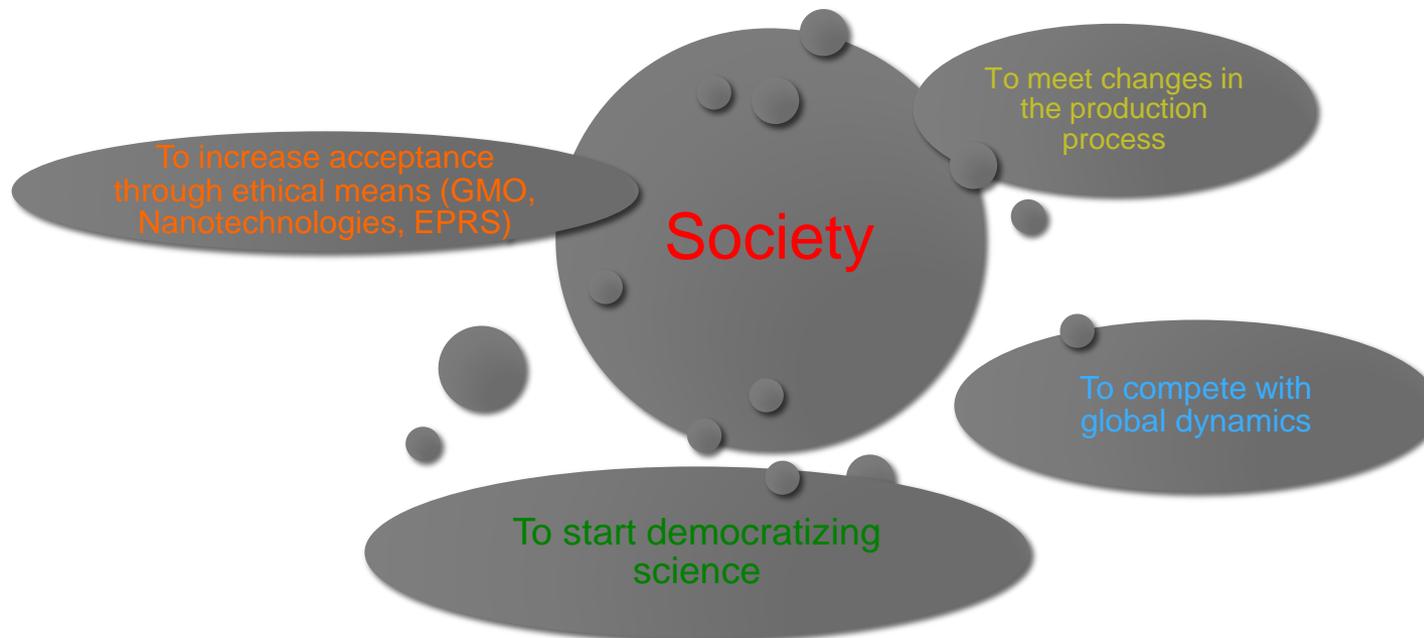
What is RRI?

- A fairly new framework developing Research and Innovation according to “**the values, needs and expectations of European society**”, i.e. responsibly.
- It has a close connection with past and existing tools and frameworks assessing R&I (TA, PTA, CTA, CSR, Anticipatory Governance, etc.; Fisher & Rip, 2013). It tries to learn from these but also to overcome their limits.
- It has been adopted also at the national level in some countries (Netherlands, Norway, UK)
- RRI Exemplifies the path undergone by the European Commission along with the different framework programmes.
 - Science in Society → Science for Society → Science with Society → Science with and for Society (SWAFS).
- It tries to engage society in the decision making process about R&I



Why is RRI important?

What society we want for the future?





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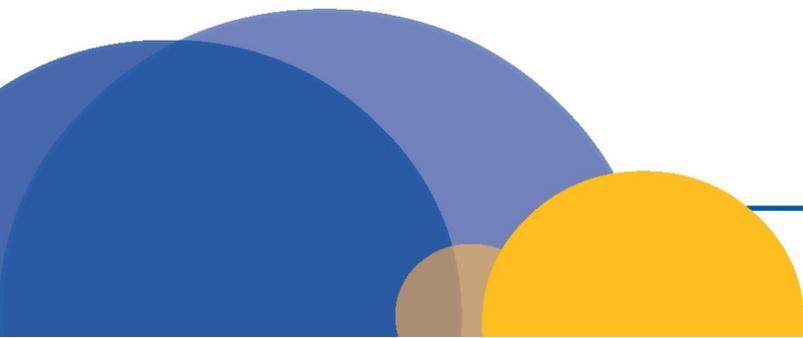


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Responsible Research and Innovation

Framework trying to integrate apparently clashing social drivers:

- Research → Knowledge → Technical Progress
- Innovation → Market → Economic Growth
- Responsibility → Values & Norms → Society



What is Innovation:

- According to Joseph Schumpeter, innovation *different employment of existing resources, in doing new things with them, without considering if these resources have increased or not* (1934)
- It can be: **Incremental** / **Disruptive**

It can concern:

- **Paradigm** (What is the underlying objective of innovation?)
- **Processes** (What are the methodologies promoting innovation?)
- **Products** (What kind of products are generated?)
- **Position** (Where are we going to introduce innovative products?)

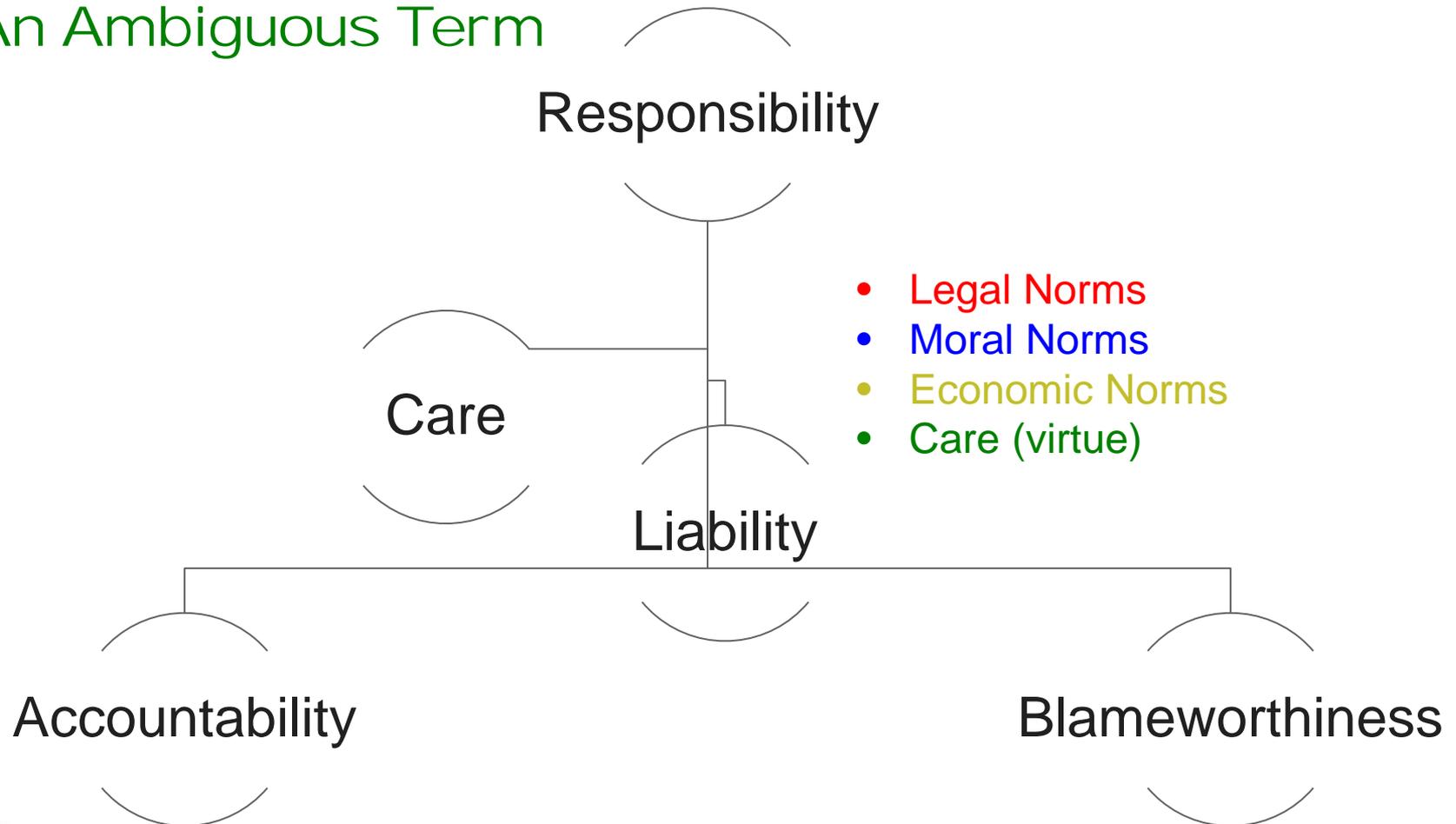
Paradigm → **Processes** → **Products** → **Position** (Bessant, 2013)

If we want to steer research and innovation in a stable and acceptable way we need to act on the paradigm and modify processes so to obtain responsible products



What does it mean to be responsible?

An Ambiguous Term



How do we “become” responsible?

- Backward-looking and forward-looking perspective should be interlaced
- Responsibility as such implies all its senses, meaning that if we want to assess a responsible practice we have to look at its legal response as well as its subjective commitment to care.
- It requires three main conditions: **Knowledge** (Capacity), **Will**, **External Conditions**.
- The problem of many hands and of external influences.
 - Innovation “rarely if ever result from the actions of an individual scientist or innovator (Von Schomberg, 2007).
- Responsibilisation can be enacted by raising the awareness of actors about the different perspectives, different actors and favouring the removal of communicative barriers.



Responsible Research and Innovation

Main Definitions:

- 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” (EC 2012).
- Responsible Research and Innovation is a *transparent*, interactive process by which societal actors and innovators become mutually *responsive* to each other with a view on the (ethical) acceptability, sustainability and societal desirability of the innovation process and its marketable products (in order to allow a proper embedding of scientific and technological advances in our society) (Von Schomberg 2011).
- Responsible innovation is a collective commitment of care for the future through responsive stewardship of science and innovation in the present. (Owen et al. 2013).
- Definitions cannot exhaust the meaning and the problems concerning the application of RRI. What values, expectations and needs? The reference to the Treaty of EU is an important anchor point. RRI cannot be reduced to a box ticking exercise or legal compliance but needs to be seen as dynamic, contextual exercise.



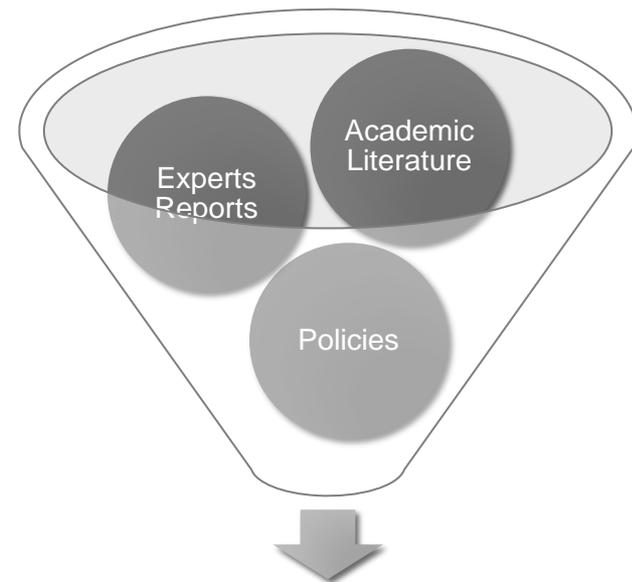
The Need for RRI: Acceptability and Acceptance of Research and Innovation

- How do we balance the *efficiency* of a process with its *legitimacy*?
- What are the criteria to obtain *Acceptability*?
 - Technical knowledge, abstract moral principles, interests
- What are the strategies to obtain *Acceptance*?
- Marketing strategies and responsibility washing do not guarantee the result (Randles et al. 2016) (CSR, GMO, Nanos, EPRS)



Operationalize RRI: a Regulatory Crossroad between Academia, Experts, Policies and (CSO?)

- 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". Six Keys (EC, 2012)
- RRI should be: Anticipatory, Reflective, Deliberative, Responsive (Owen et al. 2013)
- Indicators for developing and assessing RRI (Experts Report, Spaapen et al., 2015)



FP7/H2020 Projects

EC Path: Projects Developing RRI

The Notion of RRI)

Responsibility

Great; Res-Agora; Progress;

Responsible Industry

RRI Tools

Training Tools and Practices)

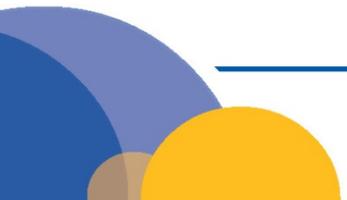
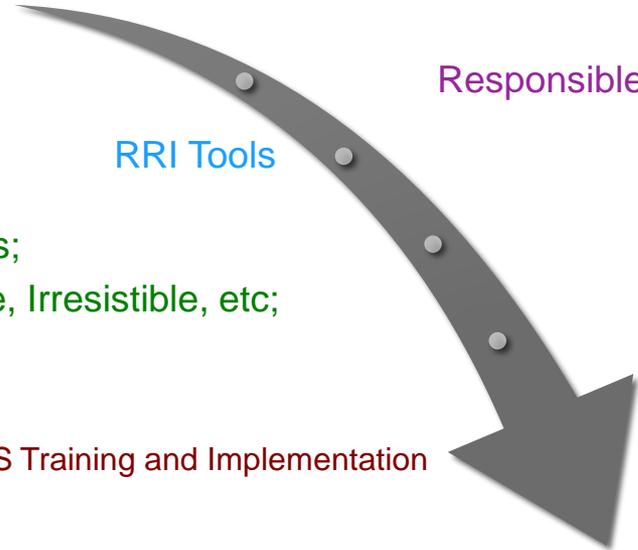
Heirri; Fottris;

RRI Practice, Irresistible, etc;

SWAFS Training and Implementation

The Application of RRI)

RRI in H2020 Projects



Main strategies to achieve Acceptability / Acceptance and some related issues

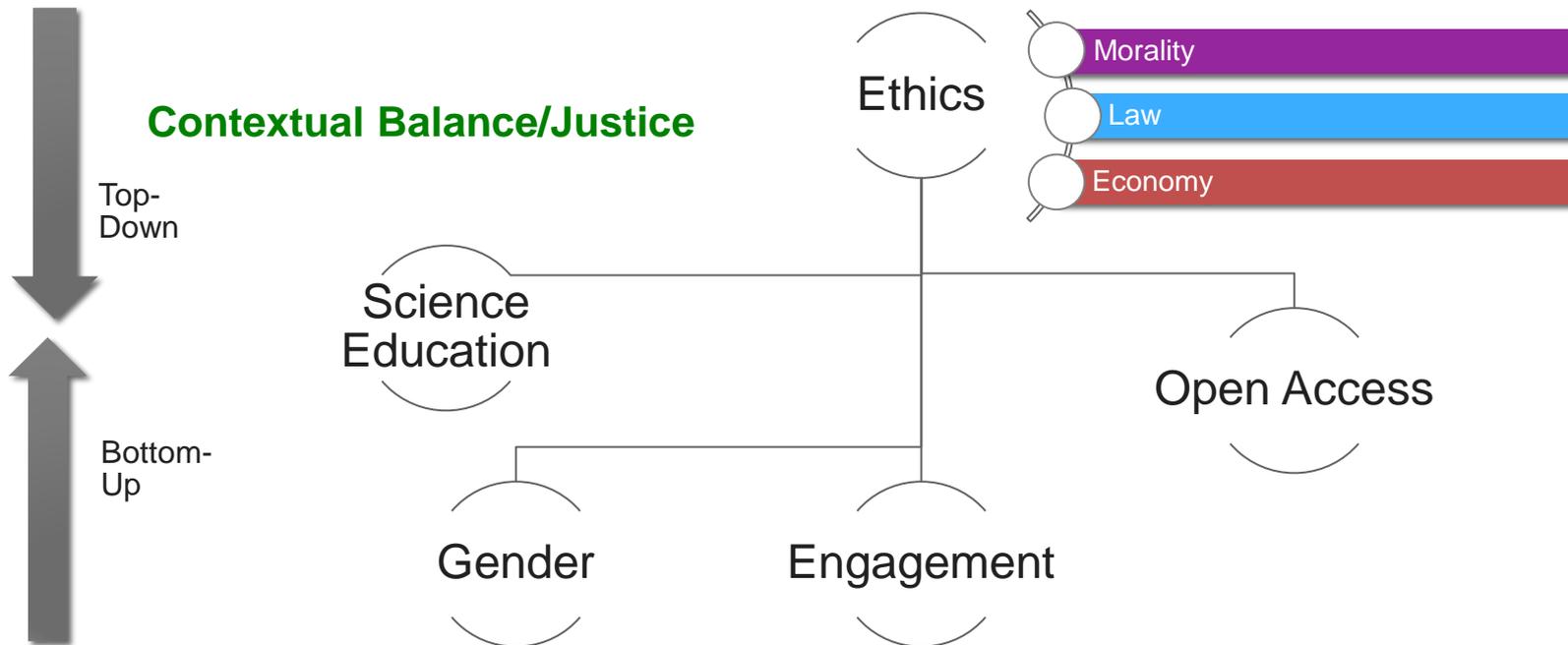
- Participation:
 - Inclusion of a different range of stakeholders in order to design the direction of R&I. Who? How many?
 - Different levels of participation (Spectators-Decision-Makers)
- Reflexivity:
 - Self-reflection for individuals
 - Common reflection over a common issue
 - 2nd Order Reflexivity:
- Deliberation:
 - How do we reach a decision? Is it efficient? What is the balance with participation?



How does the EC implement RRI in practice?

Six EC keys actions for implementing RRI

Governance Co-construction



“Being responsible means responding to the guaranteed freedoms as a recognized moral agent of a given society, having the aim of preserving such freedoms and at the same time implementing them through concrete institutional arrangements”
(Gianni 2016)

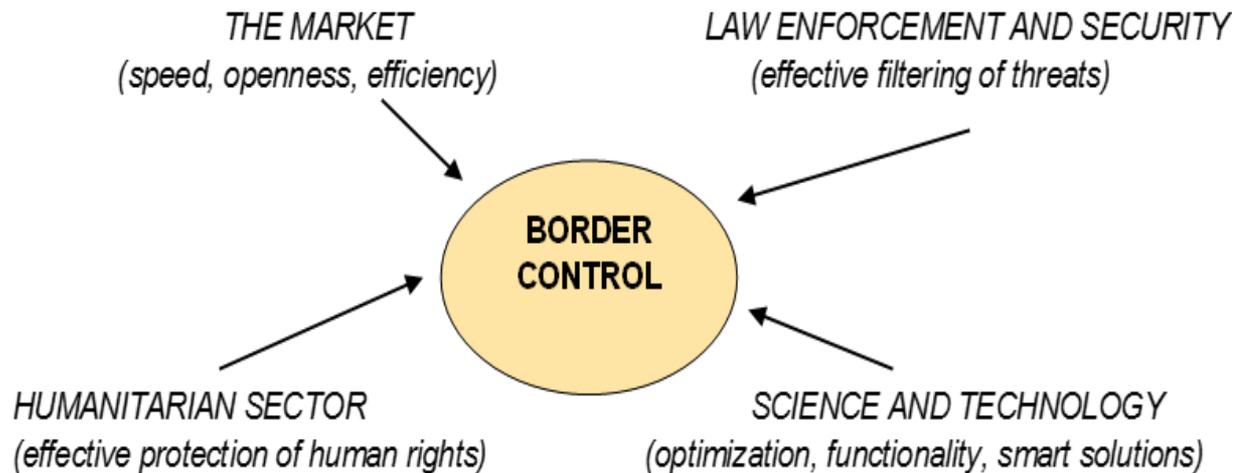


The Example of Security Border Controls and RRI The relation human/machine

- **BODEGA** - "BOrdDErGuArd - Proactive Enhancement of Human Performance in Border Control"
- BODEGA project is **investigating and modeling** Human Factors in border control to provide **innovative socio-technical solutions** for **enhancing border guards' performance of critical tasks, support border management decision-making, and optimize travellers' border crossing experience.** It is the first EU project applying the RRI framework to security.



The border – a point of conflicting normative appeals



Border Controls: Objectives

Improving the performance to achieve efficacy (Efficiency + Legitimacy). A functional process needs to incorporate also legitimate choices in order to be acceptable.

- Three drivers for Border Controls aimed at protecting and enhancing freedom in a balanced way:

—————→ Security

—————→ Speed

—————→ **Fairness** Fairness is a matter of “social cooperation guided by publicly recognized rules and procedures which those cooperating accept as appropriate to regulate their conduct” (Rawls, 2001)





Bodega: Embedding RRI keys in Border Controls

Knowledge, Will, External Conditions

- **Engagement** (Understand, Reflect and Influence)
- **Gender** (Legal, Moral, Social Requirements; cultural and religious differences)
- **Open Access** (Frontex, Human Rights, Regulations)
- **Science Education** (Technologies, Security, Procedures)
- **Ethics** (Contextual translation of principles; balanced relation between security, speed and fairness; working conditions; EU values)
- **Governance** (Co-determining processes to identify issues)
- Overall issues (Language, Publicity of Rights, Privacy)



H2020 Breakdown:

Is it always possible to implement RRI?

New HoRRizons Project

- **I Excellent science:**
 - 1. **European Research Council (ERC)**
 - 2. Future and Emerging Technologies (FET)
 - 3. Marie Skłodowska-Curie actions
 - 4. Research infrastructures
- **II Industrial leadership:**
 - 1. Leadership in enabling and industrial technologies
 - 2. Access to risk finance
 - 3. Innovation in SMEs
- **III Societal challenges:**
 - 1. Health, demographic change and well-being
 - 2. Food security, sustainable agriculture and forestry, marine, maritime and inland water research, and the bioeconomy
 - 3. Secure, clean, and efficient energy
 - 4. Smart, green, and integrated transport
 - 5. Climate action, environment, resource efficiency, and raw materials
 - 6. Europe in a changing world – Inclusive, innovative, and reflective societies
 - 7. Secure societies – Protecting freedom and security of Europe and its citizens
- **IV Spreading excellence and widening participation**
- **V Science with and for society**
- **VI Non-nuclear direct actions of the Joint Research Centre (JRC)**
- **VII The European Institute of Innovation and Technology (EIT)**

(Source: European Union 2015 Breakdown H2020)



Engage and Reflect

- **Engagement** (How to engage stakeholders in order to increase the level of knowledge and acceptability?)
- **Gender** (Legal, Moral, Social and Material Requirements)
- **Open Access** (Do stakeholders have access to information?)
- **Science Education** (Are there trainings, courses, etc.?)
- **Ethics** (Analysis of the equilibrium between different parties; Cross point between abstract rules and contextual situations. Do you find any reflexive process facilitating such operation?)
- **Governance** (How do you co-determine processes in order to identify issues and remove communicative barriers?)



Imagining a Responsible Future...

