



Grounding RRI Actions to Achieve Institutional Change in European Research Funding  
and Performing Organisations

**Grant Agreement** n. 824521

## **STATE-OF-THE-ART REVIEW OF DOCUMENTED EXPERIENCES**

*Document 2 – Collection of experiences on  
citizen engagement*

Prepared by



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## Introduction

In the framework of the Grounding RRI Actions to Achieve Institutional Change in European Research Funding and Performing Organisations (GRACE) project, under WP3 (Governance and Mutual Learning), a specific Task (T3.1) is focused on “the collection of experiences documenting RRI-documented institutional changes” and on “the elaboration of these experiences into a set of short guidance documents”.

The overall aim of the Task is that of **assisting the GRACE partners** engaged in embedding RRI in their own institute to design and implement a set of RRI-oriented Grounding Actions (GAs), to integrate these GAs with each other (developing a unitary governance system for them), to ensure their sustainability and to use them as a platform for developing a Roadmap towards RRI going beyond the GRACE project lifespan (overall 8 years).

In order to pursue this objective, a state-of-the-art of documented experiences on RRI has been developed, the results of which are presented in **seven autonomous documents**, although connected to each other, i.e.:

- Document 1 - Collection of experiences on gender equality
- Document 2 - Collection of experiences on citizen engagement
- Document 3 - Collection of experiences on science education
- Document 4 - Collection of experiences on research ethics and integrity
- Document 5 - Collection of experiences on open access
- Document 6 - Approaches to RRI implementation
- Document 7 - Basic scheme for self-assessment

All the documents have been developed by Knowledge & Innovation (K&I), which is the leader of WP3. In particular, this document has been developed by Luciano d’Andrea (K&I). They are not formal deliverables and their circulation is restricted to the GRACE project consortium members.

## This document

This is the 2<sup>nd</sup> document of the series, devoted to the **experiences related to citizen engagement in science**. Its aim is helping GRACE partners reflect on possible GAs to develop in this area during the project implementation period or in the framework of the 8-year Roadmap towards RRI. On the basis of the consulted literature, the document has been organised in **five sections**, respectively devoted to:

- Science communication
- Participatory mechanisms
- Citizen science
- Open innovation
- Governance structures for public engagement.



## **Section One – Science communication**



## 1. The issue

Science communication is usually considered as the first step of public engagement, being based, differently from the other forms of public engagement, on a one-way communication flow from scientists to the public or to other stakeholders, and not on a real interaction between them.

However, science communication is a necessary precondition for public engagement, since it serves to raise the interest of people or specific stakeholders on science and to encourage them to get involved with science and technology as well as to create in research organisations an enabling environment for more advanced forms of engagement. Moreover, science communication is also expected to enhance the image of science and to attract young people to start scientific careers. From the point of view of individual researchers, the benefits of being involved in science communication can be different, including skills development, career enhancement, higher personal and institutional profile, students recruitment, personal reward or additional funds.

It is also important not to overlook the question of what should or could be communicated about science. Usually, the main objectives pursued through science communication are transferring knowledge and skills to lay people so as to increase their “scientific literacy” and attract them to science. However, there are many other aspects which could be included in science communication which usually are not, such as: how a research organisation works, including problems and critical issues they face; the life of scientists; the political and ethical issues connected with scientific research; the changes affecting science (including increasing competition, globalisation, organisational transformations in research institutes, etc.) and the problems and opportunities they entail; the presence of forms of inequality in scientific settings grounded on, e.g., gender, sexual orientations, nationalities or personal physical conditions. This is only to say that the aims of science communication initiatives, the contents to be communicated, and the targets addressed, and the communication means used should be carefully identified.

To a certain extent, science communication may overlap with science education (see document 3 of this series).

## 2. Examples of action

Overall, three main kinds of science communication activities can be identified on the basis of the kind of medium used, i.e.:

- Traditional media
- Live or face-to-face events
- Online interactions.

### *a. Using traditional media*

The term “traditional media” substantially refers to newspapers, magazines, TV and Radio. They have some important advantages including the possibility to reach large potential audiences and to select quite accurately the targets to speak to. Another advantage is that communication is mediated or overseen by professionals. At the same time, scientists may lack control over how the media covers



their work: Moreover, this kind of communication often provides a limited or superficial view on scientific work.

Examples of possible actions to promote science communication (often already implemented by research organisations through their Communication departments) are listed below.

- Establishing **stable cooperation relations** with a pool of journalists, newspapers, magazines, radio and TV channels, at a national or local level, so as to facilitate the circulation of information about the work produced by researchers or students.
- Creating a **set of communication tools** (for example, a magazine or a newsletter) devoted to the scientific work made in the research organisation.
- Developing **training courses or modules** addressed to students, PhD students or researchers on how to communicate ones' own scientific work.
- Creating an **information and advice desk** aimed at supporting students and researches to communicate to the public and stakeholders.

### *b. Using live or face-to-face events*

There is a wide range of actions falling into this kind of communication, including:

- **Public lectures and conferences**
- Participation in or organisation of **science festivals**
- Initiatives like “**open days**” or “**researchers' nights**”, allowing people to better know the Research carried out in the research organisation and how scientific knowledge is practically produced
- **Exhibitions**
- Interactive **educational activities**
- **Events** combining science and art.

Differently, from traditional media, live or face-to-face events allow scientists to keep better control over scientific contents. Moreover, communication is more direct and personal, and it can pave the way to more advanced forms of public engagement. However, this kind of communication can reach a limited audience, can be expensive and perhaps can be little attractive for those who are not already sensitive to science.

In general, science communication using live or face-to-face events rarely can be promoted by single researchers. Usually, they are directly implemented by the management of the research organisation or, in some cases, by single units (typically a research department), even though the cooperation of and often the impulse given by scientists can be necessary. Often research organisations have stable cooperation relationships with Science centres and museums to develop this kind of activities.

### *c. Using online interactions*

Online tools are increasingly used by research organisations and individual scientists for communicating science. Different types of format can be used, including:

- **Institutional websites** (of the level of research organisation, departments or single scientists)



- **Online journalism** (online magazines, online newsletters, online articles, etc.)
- Materials like **blogs, wikis** or **podcasting**
- **Social media** (Facebook, Twitter, etc.)
- **Online events** like webinars.

This kind of communication is quick, relatively cheap, and potentially can reach a wide audience. Moreover, scientists usually keep control over the contents directly uploaded even though they cannot control how the content is picked up by others. Online communication requires regular attention (for example, to foster the website, the blogs or the messages sent through social media) and specific communication skills.

Examples of possible actions to be conducted at the organisation level to promote online science communication are mentioned below.

- Creating a **user-friendly online platform** encouraging researchers to communicate their research activities online.
- Organising **training courses or modules** on online science communication for students and researchers.
- Creating a **pool of experts** supporting researchers in online communication (for example, for organising online events or activating a blog).
- Making and updating an **inventory of online communication initiatives** and timely **advertising the new ones**, so as to harness, support and coordinate all the science communication initiatives developed in the organisation.

### 3. To know more

Some sources addressing science communication are listed below.

- The toolkit “Successful Communication A Toolkit for Researchers and Civil Society Organisations”  
<https://www.odi.org/sites/odi.org.uk/files/odi-assets/publications-opinion-files/192.pdf>
- A chapter of a book authored by Karen Bultitude on “The Why and How of Science Communication”  
[https://www.scifode-foundation.org/attachments/article/38/Karen\\_Bultitude\\_-\\_Science\\_Communication\\_Why\\_and\\_How.pdf](https://www.scifode-foundation.org/attachments/article/38/Karen_Bultitude_-_Science_Communication_Why_and_How.pdf)
- The essay “Science communication – An introduction to theory and trends”  
[file:///C:/Users/User/Downloads/OSD\\_SCIENCE\\_COMMUNICATION\\_CHAPTER\\_FOR\\_DRUSSA\\_HANDBOOK\\_-\\_Web%20\(4\).pdf](file:///C:/Users/User/Downloads/OSD_SCIENCE_COMMUNICATION_CHAPTER_FOR_DRUSSA_HANDBOOK_-_Web%20(4).pdf)
- The EU Guide on science communication on video  
<https://www.youtube.com/playlist?list=PLvpwljZTs-Lhe0wu6uy8gr7JFfmv8EZuH>
- The document “An introduction to communicating science” by Richard Holliman  
[file:///C:/Users/User/Downloads/An\\_introduction\\_to\\_communicating\\_science.pdf](file:///C:/Users/User/Downloads/An_introduction_to_communicating_science.pdf)





## **Section Two – Participatory mechanisms**



## 1. The issue

This section deals with the many forms in which the communication flow comes from the public to reach scientists or, more often, in which two-way communication is activated between researchers or research institutions, on the one side, and the public or specific stakeholders, on the other side.

Therefore, while science communication does not imply people's engagement with science and innovation, participatory initiatives necessarily do it. For such a reason, communicating science is relatively easy while promoting participation in science is quite always a complex process. Complexity derives from different factors. Three can be mentioned here.

- Participatory initiatives require the interaction among multiple actors and therefore among multiple interests, views, and expectations. Combining them is usually difficult. Difficulties usually depend upon variables like: the nature (lay people, "quasi-experts", stakeholders, other scientists, etc.) and number (few, many, etc.) of participants; the nature of the organisers (universities, governmental agencies, funding organisations, etc.); the issues discussed (for example, having or not actual impacts on, the research organisation, participants, local communities or other actors); above all, the objective of the initiative (activating a dialogue, taking deliberations, favouring a mutual learning and exchange, etc.).
- While science communication is increasingly part of the "culture" of researchers and research organisations, the proactive involvement of external stakeholders or the public at large it is not. Therefore, many forms of resistance can arise on the part of leaders, managers, and scientists towards participatory approaches in science and innovation.
- Another factor usually making this kind of initiatives difficult to implement concerns who manage the impacts of participatory initiatives. When people accept to get involved, usually desire to contribute to managing the impacts of their own participation (for example, the implementation of the decisions they contribute to take). If this does not happen, participation can be perceived as useless or disappointing. Hence the need to design participatory events or programmes having clear objectives and including participatory mechanisms in all phases.

## 2. Examples of action

There are many typologies of participatory approaches and mechanisms. Quite roughly, they can be seen as falling alternatively into three main categories, i.e.:

- Consultation
- Dialogue/Deliberation
- Collaboration.



### *a. Consultation*

The aim of consultations is to inform decision-makers or the leaders and managers of a research organisation about the opinions of the public or specific stakeholders on certain topics. These opinions can be sought also without activating a dialogue but through a one-way communication from citizens or stakeholders to the promoters of the consultation.

Different methods can be used for developing a consultation process, including:

- **Online consultation initiatives** (like online questionnaires or online consultation processes using a website platform)
- **Public opinion surveys**
- **Consultation events** (e.g., focus groups, meetings, users' groups, public hearings, citizens' panels, etc.)
- **Expert consultations** through different methods (e.g., Delphi groups, consultation conferences, etc.)
- **Other forms of consultation** (for example, connected to theatrical events or art performances).

Decisions about methods largely depend upon variables like the objective pursued, the topic dealt with, the quantity and types of participants, the amount of time available, and the availability of resources. In general, consultation can be extremely important to help decision makers or research leaders prevent the risk to develop research programmes, to make technological investments or to take policy decisions which the public or the concerned stakeholders consider as undesirable, ethically or socially unacceptable, or unnecessary.

### *b. Dialogue/deliberation*

Dialogue is an approach to involve citizens in decision making based on two-way communication. It does not necessarily imply forms of deliberation, but it is always explicitly aimed at taking decisions. Dialogue usually brings together a diverse mix of citizens with a range of views and values, and relevant policymakers and experts, to discuss, reflect and come to conclusions on complex and/or controversial issues.

Dialogue initiatives can be developed using **different tools and methods** which may include:

- **Different kinds of public meetings** (such as citizens juries, citizens summits, citizens hearings, or citizens advisory groups)
- **At-distance deliberative mechanisms** (for example, deliberative pooling, referendums, etc.)
- The involvement of citizens and stakeholders in a **set of activities of a different kind** included in more complex deliberative processes (as in the case, for example, of deliberative mapping, which is based on a pathway including different kinds of action, such as meetings, interviews, and specialised workshops).

Dialogue initiatives usually include other components like the organisation of **sensitization campaigns**, the activation of **online communication channels** and the development of **reports or other kinds of publication** in order to report the results of the process.

To develop effective dialogue-based programmes, it is necessary to clarify different aspects like: which are the problems/issues to face; if and to what extent launching a public dialogue and/or a deliberative



process actually produces an added value; who should be involved and how; which are the expected outputs; by whom and how they will manage.

### *c. Collaboration*

Differently from dialogue and deliberation, collaboration is aimed to **assign part or full decision-making-power to citizens** on policy issues. This implies a **long-term partnering** between research organisations or researchers and the public in each phase of the decision-making process, including, for example, the development of alternatives and the identification of the preferred solutions.

Collaboration usually entails the establishment of more or less stable collaborative structures such as collaboration platforms, agreements among different organisations, joint committees or the inclusion of external players in existing decision-making structures.

Collaboration can be limited to specific aspects or programmes (for example, allocation of some specific funds, evaluation of project proposals from the point of view of societal and economic benefits, decisions concerning specific research programmes, etc.) but it could be used more extensively by a research organisation.

Different models have been developed for showing how citizens may cooperate in the various steps of the decision-making process.

Below, **two schemes** are proposed.

The first has been developed by the Canadian Institute of Health Research<sup>1</sup>, which proposes a model of policy cycle connected to public engagement made up of 7 different stages. The text identifies some of the possible contributions the citizens can give at each stage of the policy cycle.

Decision-making Stage	Citizens can be engaged to...
<b>1. Define the issue</b>	<ul style="list-style-type: none"> <li>- Recognize the problem/identify risk</li> <li>- Analyse the context</li> <li>- Begin to characterize the issue</li> <li>- Agree on an issue statement</li> </ul>
<b>2. Gather information</b>	<ul style="list-style-type: none"> <li>- Provide data (qualitative or quantitative, including personal stories, ideas, survey results, formal responses)</li> <li>- Clarify values and goals</li> </ul>
<b>3. Establish decision criteria</b>	<ul style="list-style-type: none"> <li>- Clarify the normative, moral commitments</li> <li>- Describe the desired results</li> <li>- Develop indicators</li> </ul>
<b>4. Develop alternatives</b>	<ul style="list-style-type: none"> <li>- Focus on goals</li> <li>- Develop a range of alternatives</li> <li>- Think broadly and outside of established norms</li> <li>- Analyse options</li> </ul>
<b>5. Evaluate alternatives</b>	<ul style="list-style-type: none"> <li>- Use tools to evaluate alternatives</li> <li>- Understand potential impacts and trade-offs</li> <li>- Recommend preferred options</li> </ul>
<b>6. Make the decision</b>	<ul style="list-style-type: none"> <li>- Make a decision or decide on options</li> <li>- Communicate the decision (within a community, etc.)</li> </ul>

<sup>1</sup> (2010) *CIHR'S Citizen Engagement Handbook*, CIHR-IRSC, [http://www.cihr-irsc.gc.ca/e/documents/ce\\_handbook\\_e.pdf](http://www.cihr-irsc.gc.ca/e/documents/ce_handbook_e.pdf)



Decision-making Stage	Citizens can be engaged to...
	- Understand success factors
<b>7. Implement the decision</b>	- Assess (community) capacity to implement the decision
	- Assign roles and responsibilities
	- Develop an evaluation framework, criteria, and indicators
	- Collect data
<b>8. Evaluate the decision</b>	- Evaluate against objectives, identified indicators, and shared learning
	- Recommend any changes required

The second scheme has been developed by the UK Central Office for Information (COI)<sup>2</sup> to be adopted in the context of public engagement initiatives proposed by governmental entities. Such a scheme includes 5 stages, as shown in the table below.

Policy cycle stages and objectives	Role of public/stakeholders
<b>1. AGENDA SETTING</b>	
- Establishing the need for new policy or changes to existing policy	- Public/stakeholders involved in developing ideas and expressing their viewpoints to help set the agenda
- Defining the issue(s) to be addressed	
- Identifying the range of people from within government, stakeholders and the public that should be involved	- Ideas become part of the public agenda and create political space for future discussion and debate
<b>2. ANALYSIS</b>	
- Defining the challenges and opportunities associated with a particular issue more clearly	- Public, stakeholders and decision-makers enabled to come together to shape possible policy options
- Producing draft policy documents for validation and development during any engagement process	- Challenges and opportunities identified and explored
<b>3. POLICY CREATION</b>	
- Ensuring a good, workable overall policy document	- Opportunities provided for public/ stakeholders to learn about and discuss the pros and cons of a range of policy options
- Producing this in appropriate forms for different target audiences	- Consultation and comment on the detail of the proposals and draft documents sought
<b>4. IMPLEMENTATION</b>	
- Developing legislation, regulation and guidance	- Public and stakeholders informed of the preliminary results
- Developing a policy delivery and implementation plan	- Engagement used to refine the selected policy
- Developing a service delivery plan	- Challenges and opportunity for implementation and service delivery debated. Revised issues/priorities may be addressed
<b>5. MONITORING</b>	
- Evaluating and reviewing the policy and service delivery in action	- Public and stakeholders provide feedback to refine implementation/ service delivery
	- Performance measured and any issues identified fed back into the policy cycle

<sup>2</sup> Central Office for Information (COI) (2009) *Effective public engagement A guide for policy-makers and communications professionals*, <https://webarchive.nationalarchives.gov.uk/20100304105135/http://www.coi.gov.uk/guidance.php?page=283>



### 3. To know more

There are many resources pertaining to participatory mechanisms. We limit ourselves to mention here a very narrow group of them.

- The publication “Tools and instruments for a better societal engagement in Horizon 2020”, providing many examples of methods  
<http://engage2020.eu/media/D3-2-Public-Engagement-Methods-and-Tools-3.pdf>
- The booklet “What is public dialogue”, developed by the Sciencewise, the UK’s national centre for public dialogue in policy making on science and technology  
<https://participedia.net/sites/default/files/case-files/What%20is%20public%20dialogue%3F%20FAQ%20Report.pdf>
- The publication “Doing public dialogue” developed by a consortium of entities led by the Research Councils UK  
<https://www.ukri.org/files/legacy/scisoc/120727rcukresource-pdf/>
- A publication on deliberative public engagement  
<http://unpan1.un.org/intradoc/groups/public/documents/un-dpadm/unpan045154.pdf>
- The Citizens engagement handbook developed by the Canadian Institute of Health Research  
[http://www.cihr-irsc.gc.ca/e/documents/ce\\_handbook\\_e.pdf](http://www.cihr-irsc.gc.ca/e/documents/ce_handbook_e.pdf)



## Section Three – Citizen science



## 1. The issue

If the concept of collaboration mainly refers to the involvement of citizens and stakeholders in the policy cycle related to science and innovation that of citizen science refers to their involvement in the research cycle. In fact, citizen science describes the voluntary engagement in the scientific process of people who are not tied to scientific institutions and often who have not a university degree, ensuring that scientific standards are fully matched.

Forms of citizen science are traditionally performed in some research sectors, such as astronomy, archaeology or zoology. However, there is a strong tendency, in the last decades, both to enlarge the research fields where people can be involved and to enlarge the tasks and roles which people can perform. This is made more feasible now also thanks to the internet (allowing the establishment of more organised forms of scientific volunteering) and web-based technologies which can easily be managed by lay people (for example, air pollution apps for smartphones to monitor the quality of air).

There are different kinds of benefits related to citizen science. For scientists, they include, for example, the possibility to create large datasets reducing costs, to consider new views of the research topics they deal with, or to increase the public acceptance of their research results. For participants, the benefits deriving from citizen science include, for example, to contribute to scientific discoveries, to increase their understanding of complex problems, to introduce new ideas in the research process or simply to have fun. For many authors, there are also benefits for the society as a whole, in terms of democratization of science, better circulation of scientific information, increased transparency of scientific institutions and better transfer of research results into practice.

## 2. Examples of action

In the field of citizen science, the key issue to face up is to what extent citizens should or could be involved in the research process.

In this regard, the Center for Advancement of Informal Science Education (CAISE) developed a simple typology of research projects according to the levels of citizens' involvement in the research process. On such a basis, three kinds of research projects are identified:

- Contributory projects
- Collaborative projects
- Co-created projects.

### *a. Contributory projects*

Contributory projects are generally designed by scientists and for which members of the public primarily contribute by collecting data. They are therefore researcher-driven projects, dealing with questions for which answers require the **collection of large amounts of data** over wide geographic areas and/or over long spans of time.

Data are collected following protocols set up by scientists. In some cases, the public is encouraged to analyse data usually through online data visualization tools and sometimes is involved in disseminating data results.





In general, in contributory projects – which are the most common model of “citizen science” projects –, the **public has a marginal role**, since they are theoretically and methodologically fully set up and managed by scientists.

#### *b. Collaborative projects*

Collaborative projects are generally designed by scientists and for which members of the public contribute collecting data but also helping **refine project design, analyze data, or disseminate findings**.

In this case, the public does not only participate in collecting data but is actively involved in different research activities, including, e.g.:

- Analysing samples
- Designing or refining data collection protocols
- Interpreting data
- Drawing conclusions
- Presenting project results to the public, scientists or decision makers.

In collaborative projects, although scientists keep on a leading role in shaping and driving the research process, lay people have the possibility to **significantly influence both the research process and the scientific products**.

#### *c. Co-created projects*

Co-created projects are designed by scientists and members of the public working together and for which at least some of the **public participants are actively involved in most or all steps of the scientific process**.

Therefore, differently from the two kinds of project discussed above, co-created projects are not researcher-driven projects but are **co-driven by researchers and members of the public**. In addition to data collection or interpretation, lay people are usually involved also in:

- Choosing or defining questions to study
- Gathering information and resources
- Developing explanations and hypotheses
- Designing data collection methodologies
- Analysing samples and data
- Interpreting data
- Drawing conclusions.

Co-created projects are often conducted when a community concern is to be studied (typically, the creation of new infrastructure, the mapping of pollution sources, or research related to public health initiatives) and sometimes this kind of projects is labelled as “community science” or “participatory action research”.



#### d. Support actions

In order to support the development of citizen science, a set of support actions are usually be conducted. Some examples are listed below.

- **Organising sensitization, education and training initiatives** for promoting the involvement of the public in research projects, also developing customised training material for specific target groups, establishing agreements with existing associations, groups or civil society organisations, collaborating with teachers and schools for attracting students or using social media for launching citizen science research projects.
- **Developing appropriate technologies and procedures** for engaging people in research processes, including online platforms, tools and procedures to offer two-way communication channels between researchers and participants, or technical procedures and technological devices for collecting data.
- **Establishing mechanisms and procedures allowing to monitor and evaluate citizen science projects**, for what concerns not only the quality and correctness of the research process but also the social outcomes and potential social impacts of the participatory mechanisms which have been taken in place.
- **Establishing procedures in order to provide for data quality assurance and comply with the basic principles of openness**, so as to make the results of the projects fully accessible to everyone.
- **Favouring mutual learning processes inside and outside the organisation** on how citizen science projects can be successfully designed and implemented and how to reinforce public participation in the research process.

### 3. To know more

Many resources are available on why and how developing citizen science initiatives. Some of them are listed below.

- An essay on public participation in scientific research developed by the Center for Advancement of Informal Science Education (CAISE)  
<http://www.birds.cornell.edu/citscitoolkit/publications/CAISE-PPSR-report-2009.pdf>
- A guide to when and how to use citizen science to monitor biodiversity and the environment, developed by the Scottish Environment Protection Agency and the Centre for Ecology and Hydrology  
[https://www.ceh.ac.uk/sites/default/files/sepa\\_choosingandusingcitizenscience\\_interactive\\_4w\\_eb\\_final\\_amended-blue1.pdf](https://www.ceh.ac.uk/sites/default/files/sepa_choosingandusingcitizenscience_interactive_4w_eb_final_amended-blue1.pdf)
- The Guide to Citizen Science published by the UK Environmental Observation Framework  
<http://www.ukeof.org.uk/documents/guide-to-citizen-science/view>
- The report by Muki Haklay on citizen science and policy in a European perspective  
[https://www.wilsoncenter.org/sites/default/files/Citizen\\_Science\\_Policy\\_European\\_Perspective\\_Haklay.pdf](https://www.wilsoncenter.org/sites/default/files/Citizen_Science_Policy_European_Perspective_Haklay.pdf)
- The White paper on citizen science for Europe, drafted by Societize for the European Commission



[http://www.socientize.eu/sites/default/files/white-paper\\_0.pdf](http://www.socientize.eu/sites/default/files/white-paper_0.pdf)

- The guide for citizen science practitioners drafted under the GEWISS project  
[https://www.buergerschaffenwissen.de/sites/default/files/assets/dokumente/handreichunga5\\_engl\\_web.pdf](https://www.buergerschaffenwissen.de/sites/default/files/assets/dokumente/handreichunga5_engl_web.pdf)



## Section Four – Open innovation



## 1. The issue

Usually Responsible Research and Innovation does not consider the role of citizens in innovation activities and, especially the relations between citizens and industry.

This is not the case for the concept of Open Science, which, on the contrary, sees citizens more and more involved in innovation, together with research organisations and industry.

The EC document “Open Science, Open Innovation, Open to the World”, in this regard, highlights the multiple role citizens and civil society organisations may play in the innovation processes, including creating new demands for innovative products and services, funding projects that are relevant to them, being active promoters of innovation through their ideas and having a say in shapes and impacts of research-based products.

However, very few research organisations are culturally prepared and organisational structured to promote forms of innovation involving citizens and other stakeholders in addition to technology developers and industrial partners, even though there is an increasing trend to ground innovation on co-working, cooperation and interchange among actors of different types.

In this section, we limit ourselves to provide some tips and ideas about how research organisations can take some steps toward innovation initiatives somehow encompassing citizens, citizens networks and other stakeholders, together with industry and governmental organisations.

## 2. Examples of action

With reference to this area, two main strategies can be identified:

- Promoting culture and skills on open innovation
- Developing eco-systems for co-creation and experimentation.

### *a. Promoting a culture and building competences on open innovation*

Open innovation is a relatively new concept and universities and research organisations adopting practices related to open innovation involving citizens are still a minority. The key idea at the basis of open innovation is that innovation is rarely an in-house process and it works much better and quicker when external actors are involved and work together. However, this shift also entails a cultural change among researchers and the building of new skills and expertise in the organisation.

Some actions can be made in regard. Some of them are listed below.

- **Collecting data and information on the innovation practices** developed in the organisation so as to identify actors, cases, and opportunities for launching open innovation initiatives involving citizens and stakeholders.
- Introducing **open innovation principles** and **practices** in university curricula.
- Developing training **courses and modules on open innovation** for researchers and managers.



- Engaging students and researchers in **co-creation and co-working activities** with the involvement of citizens and stakeholders.
- Introducing **monetary and non-monetary incentives** and **rewards** for supporting the development of knowledge-based open innovation projects.
- Supporting researchers through **networking actions** aiming at favouring them in adopting open innovation practices.

### *b. Developing eco-systems for co-creation and experimentation*

Universities and research organisations are increasingly involved in creating new eco-systems supporting co-creation and experimentation open to staff and students as well as external stakeholders, firms and to the public at large. This implies investments which, in some cases, could be also relatively limited. Different structures and practices can be developed.

- **Living Labs.** This concept is used to refer to co-creation experiences characterised by some basic features, including: the engagement of users; the involvement of a plurality of stakeholders; the adoption of a real-life setting; the adoption of an approach combining different methods; the focus on co-creation.
- **Makerspaces.** Makerspaces (often referred to as fab labs or hobby shops) are physical spaces containing specialised tools and equipment (like 3D printers, laser cutters, computer-controlled embroidery machines) and equipped for co-working activities favouring the creation of new projects or prototyping activities. They also serve as the physical basis for developing a community of people usually coming from different experiences and bearing different competence interested in working together. Makerspaces are used for encouraging interdisciplinarity, entrepreneurship, co-creation, creativity, and experiential learning.
- **Innovation labs.** Innovation labs are physical spaces that allow for collaboration among the private sector, academia and civil society, with the aim of facing and solving a specific problem through innovative solutions. Innovation labs are based on a set of protocols identifying the way in which the activities should be conducted. They are often referred to as “Social innovation labs” emphasizing the social dimension of the innovative solutions to be developed.
- **Crowdsourcing innovation.** Crowdsourcing innovation refers to an approach aimed at taking a job usually done by a few designated agents and outsourcing it by involving a generally very large group of people by using an online crowdsourcing platform. The approach is based on the use of an open call for participation addressed to a large set of people with different backgrounds to find innovative solutions to a given problem.

## 3. To know more

Among the many sources available on open innovation and especially on the involvement of citizen in innovation processes, the following can be mentioned.

- The EC document “Open innovation, Open Science, Open to the World. A vision for Europe”  
[file:///C:/Users/User/Downloads/Openinnovationbook%20\(1\).pdf](file:///C:/Users/User/Downloads/Openinnovationbook%20(1).pdf)



- Two handbooks on how to develop a living lab  
[https://www.ltu.se/cms\\_fs/1.101555!/file/LivingLabsMethodologyBook\\_web.pdf](https://www.ltu.se/cms_fs/1.101555!/file/LivingLabsMethodologyBook_web.pdf)  
[https://u4iot.eu/pdf/U4IoT\\_LivingLabMethodology\\_Handbook.pdf](https://u4iot.eu/pdf/U4IoT_LivingLabMethodology_Handbook.pdf)
- A guide on innovation labs published by UNICEF  
[https://www.unicef.org/videoaudio/PDFs/Innovation\\_Labs\\_A\\_Do-It-Yourself\\_Guide.pdf](https://www.unicef.org/videoaudio/PDFs/Innovation_Labs_A_Do-It-Yourself_Guide.pdf)
- A practical guidance for developing a social innovation lab  
[https://www.ccednet-rcdec.ca/sites/ccednet-rcdec.ca/files/social\\_innovation\\_lab\\_field\\_guide.pdf](https://www.ccednet-rcdec.ca/sites/ccednet-rcdec.ca/files/social_innovation_lab_field_guide.pdf)
- The contents of an introductory teaching module on civic open innovation  
[file:///C:/Users/User/Downloads/Part%203.5.%20Civic%20O%20\(1\).pdf](file:///C:/Users/User/Downloads/Part%203.5.%20Civic%20O%20(1).pdf)
- An article on the university-based makerspaces  
<https://www.ingentaconnect.com/content/nai/ti/2017/00000019/00000001/art00005?crawler=true&mimetype=application/pdf>



## **Section Five – Governance structures for public engagement**





## 1. The issue

The many initiatives promoted so far in Europe on public engagement have had many impacts on science and technology. However, public engagement still meets some resistances in research organisations. For example, getting involved in public engagement is not recognised for career advancements and it can even damage their scientific career. There are no incentives for public engagement. In general, leaders and heads of department consider public engagement as a marginal aspect in the life of the organisation and sometimes they see it simply as a waste of time. This is also the reason why researchers in the majority of cases limit their public engagement actions to science communication which is less complex to develop and usually more recognised and supported in the research organisation.

In this framework, the need to embed public engagement in research institutions clearly emerges, so as to make it a permanent function of the organisation, by activating governance structures able to go beyond a dispersed and occasional approach to public engagement.

## 2. Examples of action

Two main strategies can be identified:

- Supporting researchers and staff to promote public engagement activities
- Establishing new structures, norms, and services.

### *a. Supporting researchers and staff to implement public engagement*

The first strategy is aimed at supporting researchers to autonomously implement public engagement actions in their research, teaching and innovation activities as well as staff and managers to test public engagement practices within the organisation.

Some of the possible actions to be developed are listed below.

- **Gathering information** on aspects like past or ongoing public engagement activities within the organisation, on attitudes of researchers and staff about public engagement (through surveys, interviews, focus groups, or other consultation initiatives), or on best practices which can be transferred into the organisation.
- **Promoting awareness-raising events and communication activities** such as workshops, social events, online blogs, webpages, and meetings of any sort on public engagement.
- **Creating internal networks or groups** of informal or formal nature focused on public engagement, involving different units or departments.
- **Establishing forms of reward and recognition** (such as awards, mentioning in the organisation's media, funds and scholarships) making visible and supporting those who are already involved in public engagement initiatives.



- **Drafting and disseminating guidance packages on public engagement**, including guidelines, templates or other practical tools.
- **Developing training schemes and capacity building initiatives** with the aim of enhancing researchers' and students' skills in public engagement.

#### *b. Establishing new structures, norms and services*

The second strategy, which is usually connected to the previous one, is creating new structures, norms, and services, with the aim of progressively ensuring an institutional embedment and mainstreaming of public engagement in the organisation. Some of the possible actions which can be conducted are listed below.

- **Creating new internal structures** devoted to public engagement, such as a public engagement office (this is a solution often adopted by universities), a new department, an officer, a member of the Board or a specific team in charge of public engagement or entrusting new tasks on public engagement to existing units (such as the communication department).
- **Establishing a pool of internal or external experts** providing researchers, leaders and students with advice and consultancy services on public engagement at different levels (administrative guidance, technical support, strategic support, etc.).
- **Developing annual or multi-annual public engagement plans**, defining objectives, implementing structures and procedures, actions, and monitoring and evaluation systems.
- **Creating funding schemes and scholarships** for researchers, research groups and students to promote public engagement initiatives connected to research programmes.
- **Establishing new regulations, standards and procedures** in order to facilitate the development of public engagement initiatives and approaches within the organisation concerning, e.g. teaching activities and curricula, research projects, cooperation activities with external entities, innovation and technology development, annual reporting activities, internal information and communication duties.
- **Establishing partnership agreements** with external stakeholders on the development of public engagement initiatives and programmes, including local communities, science centres, local or national authorities, other research organisations, schools, NGOs and community-based organisations, industrial associations, and private firms.

### 3. To know more

A list of resources concerning the development of governance structures pertaining to public engagement is given below.

- A toolkit developed by Beacon for public engagement at the University College of London [https://www.ucl.ac.uk/culture/sites/culture/files/final\\_ucl\\_beacon\\_for\\_public\\_engagement\\_website\\_ver.pdf](https://www.ucl.ac.uk/culture/sites/culture/files/final_ucl_beacon_for_public_engagement_website_ver.pdf)



- A document on how to support public engagement developed by the UK National Co-ordinating Centre for Public Engagement  
[http://www.publicengagement.ac.uk/sites/default/files/publication/learning\\_resource\\_pack.pdf](http://www.publicengagement.ac.uk/sites/default/files/publication/learning_resource_pack.pdf)
- The Concordat for Engaging the Public with Research developed by Research Councils UK where a set of principles concerning public engagement are established  
<https://www.ukri.org/files/legacy/scisoc/concordatforengagingthepublicwithresearch-pdf/>
- The public engagement strategic plan at the University of Oxford  
[http://www.ox.ac.uk/sites/files/oxford/media\\_wysiwyg/University%20of%20Oxford%20-%20Public%20Engagement%20with%20Research%20Strategic%20Plan.pdf](http://www.ox.ac.uk/sites/files/oxford/media_wysiwyg/University%20of%20Oxford%20-%20Public%20Engagement%20with%20Research%20Strategic%20Plan.pdf)

A wide range of resources on public engagement is available at the UK National Co-ordinating Centre for Public Engagement website (<http://www.publicengagement.ac.uk/resources>).

