



Deliverable 4.1

The ENJOI Engagement Methodology for target users and quadruple helix stakeholders

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ENJOI - Engagement and Journalism Innovation for Outstanding Open Science Communication

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QUALITY ASSURANCE

To ensure the quality and correctness of this deliverable, we arranged an internal review and validation process. The deliverable was drafted by the work package leader (formicablu). All partners contributed and reviewed the overall draft. Finally, the final version was submitted to the project coordinator for a final review and validation.

DISCLAIMER

This deliverable contains original, unpublished work except where clearly indicated otherwise. It builds upon the experience of the team and related work published on this topic. Acknowledgment of previously published material and others' work has been made through appropriate citation, quotation, or both.

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1. SUMMARY

Quality science journalism and communication are pivotal in today's struggle to deal with the great global challenges. **Misinformation** undermines citizens' ability to tackle their problems and, as a result, the entire democratic process. Focusing on journalism, the EU-funded SwafS-19 ENJOI project is investigating the potential of **engagement** as a crucial **innovating factor** in science communication distributed via media platforms.

In ENJOI we will **co-create and select a set of standards, principles and indicators** (SPIs) through **engagement workshops** with target users and **labs** with stakeholders, which will serve as the basis for a manifesto for **outstanding open science communication**.

In order to address the challenge of improving science communication, one of the crucial resources is the engagement between different actors. "The ENJOI Engagement Methodology for target users and quadruple helix stakeholders" (Deliverable 4.1) informs about the process of effectively engaging various target users and quadruple helix stakeholders in four countries (Belgium, Italy, Portugal and Spain) in connection with the NEWSERA Project, a SwafS-19 sister project, for mutual benefit and community sharing.

This report further provides an overall view of the engagement concept for the different targets taking into account the goals in the project. It approaches the co-design methodology for the quadruple helix model bringing together the connection between the NEWSERA project and ENJOI. There is also a section that describes possible engagement aims, incentives and channels to interact with the different participants where contains the how of the methodology. And a section that reports lessons learned from NEWSERA. Finally, the potential to increase ENJOI's impact to promote the best practices of science communication is shared.



2. PROJECT OVERVIEW

ENJOI (ENgagement and JOurnalism Innovation for Outstanding Open Science Communication) is exploring and testing engagement as a key asset of innovation in science communication distributed via media platforms, with a strong focus on journalism.

Through a combination of methodologies and in collaboration with producers, target users and stakeholders of science communication, ENJOI is co-creating and selecting a set of standards, principles and indicators (SPIs) to produce a Manifesto for an Outstanding Open Science Communication. ENJOI is deploying a series of actions via Engagement Workshops, Labs, field and participatory research, evaluation and testing phases.

It will also build an Observatory as its landmark product to make all results and outputs available to foster capacity building and collaboration of all actors in the field. ENJOI is working in four countries: Belgium, Italy, Portugal and Spain, taking into account different cultural contexts.

ENJOI's ultimate goal is that of improving science communication by making it more consistently reliable, truthful, open and engaging. Contextually, ENJOI will contribute to the active development of critical thinking, digital awareness and media literacy of all actors involved in the process.



3. INTRODUCTION

The ENJOI project is exploring engagement as a key asset of innovation in science communication with a strong focus on journalism. The way media builds and maintains relationships with communities can be a key for success in journalism.

The main engagement methodology used to achieve the ENJOI's goals is the implementation of a round of Engagement Workshops (EW) in Italy, Belgium, Spain and Portugal, where we involve target users (producers and consumers) to co-create the Standards, Principles and Indicators (SPIs) for science communication. We will also develop in the four countries a round of labs in order to involve the quadruple helix stakeholders (civil society, industry, government and academia) to explore new ways of creating, delivering and receiving contents and information on science. So both the EWs and Labs are the core of the engagement methodology in the project.

In order to co-create the Engagement Methodology focused on the EW and labs, Science for Change organized a workshop with other partners from the consortium. As most of our meetings are planned virtually, in order to promote a more collaborative environment for partners, an ad hoc Miro Board was created (Figure 1), focusing on WHY (the purpose) and WHAT (the outcome) is expected from the Engagement Methodology.



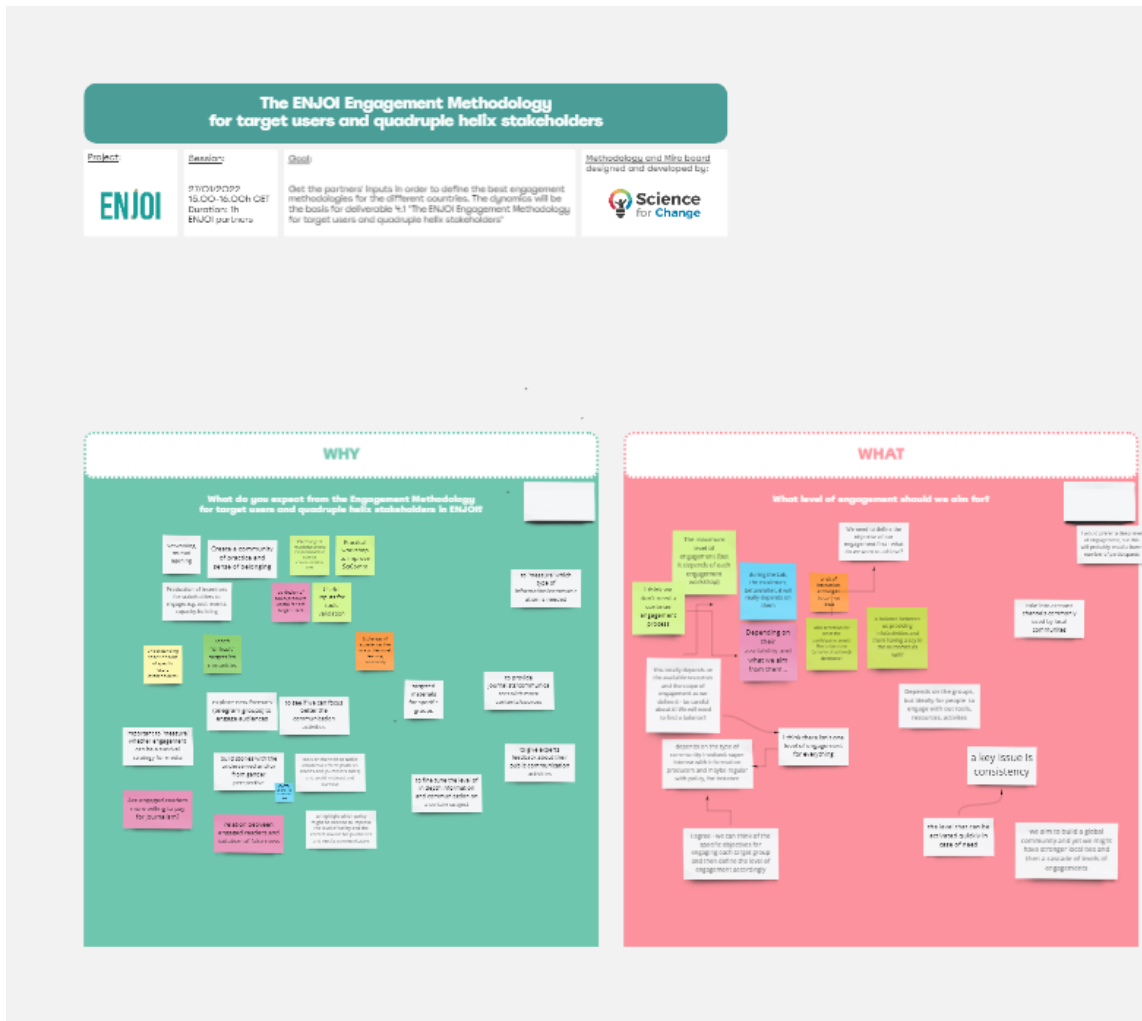


Figure 1. Miro to co-design the engagement objectives and outcomes with ENJOI's partners.

We discussed the expectations from the Engagement Methodology for target users and quadruple helix stakeholders in ENJOI. The different partner members participating highlighted the importance of creating a Community of Practice (CoP) and **fostering a sense of belonging through the promotion of mutual learning**. Other topics discussed involved the level of engagement that the consortium should aim for. A common agreement was reached, concluding that achieving a **good level of interaction and fostering bottom-up ideas** is fundamental to understanding the **specific needs** of each of the target users and stakeholders.

The EW are the activities planned for more intense engagement with target users where the CoP will interact and co-create the SPIs. The same will happen during the labs, which will be the activities designed to test and



validate the SPIs previously defined that will allow a high level of engagement with quadruple helix stakeholders. Previous and follow-up contacts will be scheduled assuring flexibility and will be discussed with the participants. The main key issues expected for the implementation of any activity that goes beyond the EW and the labs are **the appropriate balance between consistency and resources**.

Engagement helps collect insights and evidence for constructive science and also fosters collaboration between academic scholars, journalists and citizens. In this sense, a connection between the NEWSERA and ENJOI projects represents an opportunity for mutual benefit. NEWSERA (Citizen Science as the new paradigm for science communication)¹ is one of the eight funded SwafS-19 sister projects that aims to integrate citizen science in science communication, as a tool to open up science and innovation to society and promote science literacy. In order to test the project hypothesis, NEWSERA organizes the #CitSciComm labs dedicated to each of the quadruple helix stakeholders (civil society, academia, industry and public sector), together with science communication and data journalism professionals. The #CitSciComm Labs involve 38 citizen Science pilots from Portugal, Italy and Spain, with which innovative science communication actions have been co-designed, implemented and validated together with the #CitSciComm communities of practice. The NEWSERA CoPs involve more than 100 expert representatives from each of the stakeholders aforementioned and are facilitated by the NEWSERA partners. As some of the ENJOI partners also participate in NEWSERA, which is in a more advanced phase (one year more advanced), ENJOI is both incorporating new knowledge and benefiting from the lessons learned that will be further explored in this deliverable.

Through active engagement in its workshops, ENJOI opens up channels of communication and collaboration between researchers, journalists and the different users, who not only need that information, but can contribute to generate and improve it, as it happens in many citizen science projects.

¹ <https://newsera2020.eu/>



3.1 Conceptualizing engagement

There are deliverables in the project that already established some concepts of engagement, such as **Deliverable 3.1 Developing a roadmap** that approaches how to build collaborative partnerships for the EW and **Deliverable 7.1 Digital Engagement Focus Report** that shows the track of research exploring how digital media have exploited engagement in covering science. In this Deliverable the focus is the engagement for the workshops with target users and the labs with quadruple helix stakeholders.

The need to bring issues of social relevance and impact closer to the public through science is becoming increasingly visible (Lakomy et al., 2019). At the same time, science communication is moving from the deficit model, in which the communicative process was intended as a mere transfer of scientific information to an ignorant public to be educated, to the participatory model, in which communication is bidirectional, negotiated with the background of the aware and responsible public (Bucchi, 2008).

Citizen engagement activities are a resource sometimes used in science communication, since including non-experts or experts from other fields in work processes can enhance knowledge transfer and lead to the creation of a more specialized society, as well as generate new opportunities for research, development and innovation (Coulter, 2013; Haywood & Besley, 2014). An efficient communication strategy engages new audiences, motivates participation in scientific projects, makes every phase of scientific research accessible, thus implementing shared and sustainable programs and actions (Rüfenacht et al., 2021).

In ENJOI both target users and stakeholders have the **opportunity to be part of the co-creation process and the resulting SPIs and Manifesto** are not perceived as a top-down framework proposed only by specific experts for a wider use. On the contrary, they will be the result of a bottom-up approach that should lead to a much higher rate of adoption, in line with the challenge of building a more inclusive, innovative and reflective society.

3.2 Engagement Methodology for target users



According to Deliverable 3.1 Developing a roadmap, in order to run the EWs, each country has established new collaborative partnerships. These partnerships are composed of producers and consumers of science communication. They will bring together a group of 8-20 people working in different aspects of science communication, with a good balance of practitioners and researchers (Figure 2). These people could be science and data journalists, communication and dissemination experts, citizen science practitioners, museum staff, media editors, cross-sectional experts, local activists, teachers and students and more. In order to select the participants, as well as considering the different profiles we also take into consideration a balance in gender representation.

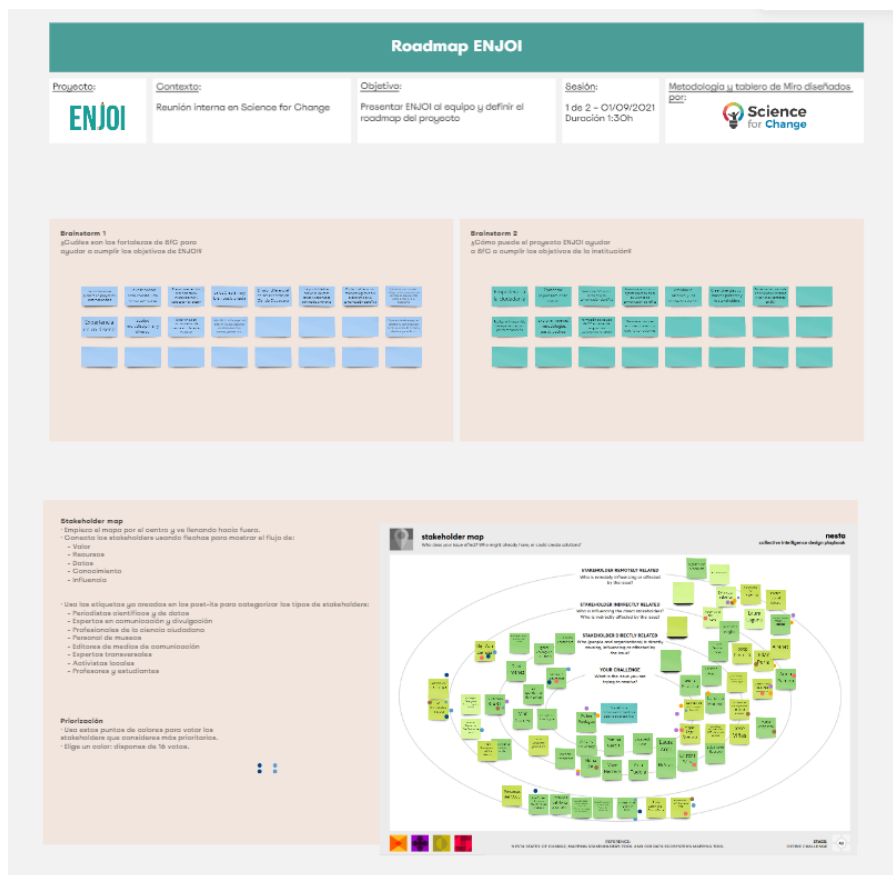


Figure 2. Miro Board used to build the Spanish roadmap for the EW.

For **building a community** it is necessary to come to a shared understanding of the issue, the goals of the initiative and how to perform and document the activities and tasks ahead. The **engagement within the participants of ENJOI** starts with the approach to present the project, inviting them for the engagement workshop and showing the **benefits** of being part of this partnership in ENJOI. The concept of the partnerships in ENJOI is based on the



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Community of Practice (CoP) approach to social learning. A CoP is a group of people who share a concern or a passion for something they do and learn how to do it better as they interact regularly (Deliverable 3.1).

A deeper interaction and engagement will happen during the EW, where for more than 5 hours the participants will co-create principles, identify standards and define indicators. To follow up with the project, we will send a survey to the participants in order to co-create with them the continuous engagement in the project. Possible options are described in this deliverable in section 3.4 "Scoping engaging aims, incentives and channels".

3.3 Engagement Methodology for quadruple helix

3.3.1 Co-design and quadruple helix concept

Co-design, also called participatory design, consists of incorporating various actors into the design process in an active manner in order to address a shared challenge. The participating actors can belong to any sector of society and, although there are many different distributions of society into sectors, the following distinction is commonly used: (1) Citizens or civil society, which includes citizens and associations such as NGOs; (2) Industry, which includes both large and small companies, clusters and, in general, the entire private sector; (3) Government, public institutions and the entire public administration; and (4) Academia, which includes universities, research centers, and other scientific and technological organizations. The engagement of these four main sectors is commonly known as the "quadruple helix engagement model" (Figure 3).



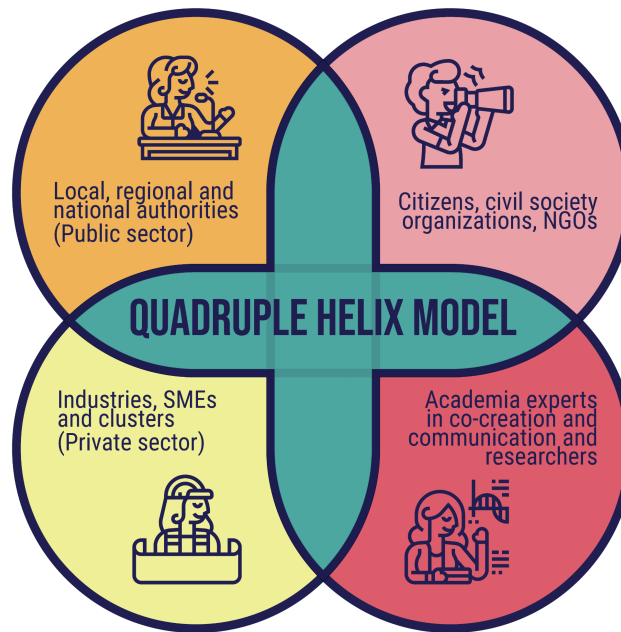


Figure 3. The quadruple helix engagement model.

By involving agents from these four sectors in one or several joint co-design activities, it is possible for all the parties involved in a common challenge to sit down and dialogue, taking into account the great variety of needs as a whole. An activity of this type therefore facilitates the interaction between multiple parties in a structured and guided way to find a solution. In this context, co-design is a very useful tool, since the methodologies used in the field of design are meant to solve problems of all kinds, and the fact of doing it together with a diverse group of actors allows that each participant contributes with their own experiences, skills, knowledge, thoughts, opinions and networks.

Thus, co-design converts hierarchical or vertical processes into collaborative and horizontal ones. In addition, it can be applied in any part of the problem-solving process, from the definition of the challenge to its resolution, and from more abstract processes of conceptualization to more specific processes of definition and/or testing. By merging different people and thus different areas of specialization and experience, innovative results are generated from an interdisciplinary point of view – which would not be possible if each actor tackled the challenge on their own. This is the added value that co-design provides when used with the quadruple helix model.



3.3.2 NEWSERA project methodology

As aforementioned, NEWSERA is a Swafs-2019 sister project that creates communities of practices involving specifically quadruple helix stakeholders: citizens, industry & SMEs, career scientists and policy makers, as well as science communication and data journalism professionals (Figure 4)². The methodology of the project is based on what is called #CitSciComm Labs (Citizen Science Communication Labs). In this section we briefly explain the NEWSERA methodology in order to align it with the activities that will be developed in ENJOI.

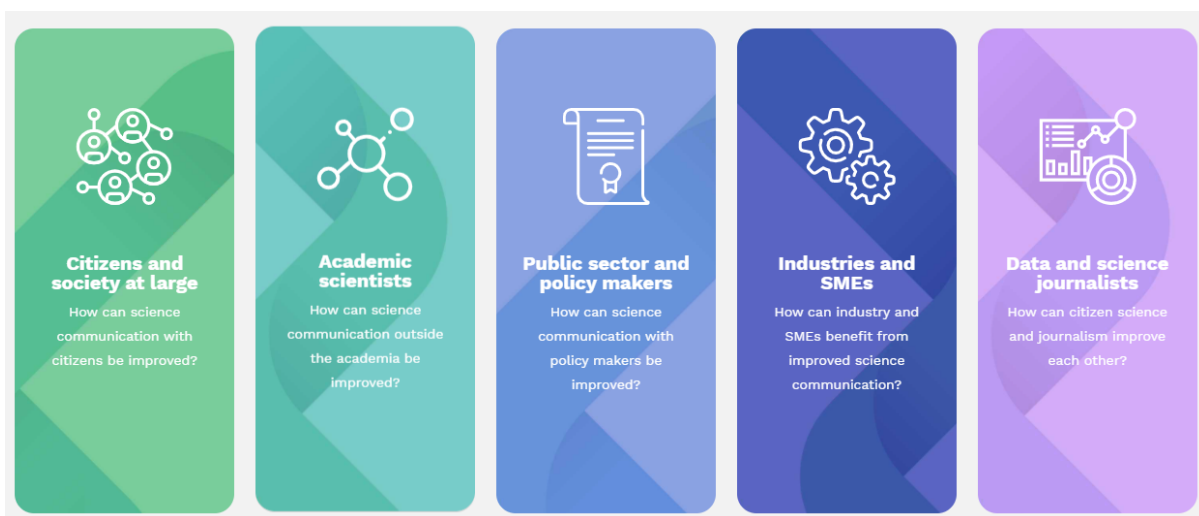


Figure 4. Scheme of the NEWSERA #CitSciCommLabs addressed to stakeholders of the quadruple helix and data and science journalists.

The #CitSciComm Labs involve small groups of citizen science practitioners from 38 ongoing citizen science initiatives, the NEWSERA “Pilots” (selected from the NEWSERA [survey](#) and interviews), representatives from different stakeholders groups and science communication experts: together they collaborate on new and improved strategies of communication addressed to quadruple helix stakeholders and journalists.

The presence of representatives of citizens and society in general, academic scientists, industries and SMEs, policy makers and journalists is crucial for the Labs: they have an active role in voicing their interests and needs to co-create innovative science communication strategies that they are using and testing in

² NEWSERA - Re-thinking Science Communication: Take-away Ideas for Citizen Science Initiatives (Deliverable 5.5). DOI: 10.5281/zenodo.4837245



their CS projects to reach their target stakeholder audiences. These has already allowed to detect and define common challenges and opportunities, published in the first policy brief from the project - "[Re-thinking Science Communication: Take-away Ideas for Citizen Science Initiatives](#)" (Elorza *et al.*, 2022), available in English, Italian, Portuguese and Spanish.

Each Lab consists of a series of three co-creation workshops that are held online and with different groups for each country involved in the project (Spain, Portugal and Italy). While the co-creation workshops are held within each group and in local languages, all groups come together in common sessions to share their work and findings, in what has been designated as the "NEWSERA FRIDAYS", which are held in English.

3.3.3 ENJOI and NEWSERA connection

The CoPs created within the NEWSERA #CitSciComm will maximize the outreach of both ENJOI and NEWSERA projects. The labs in ENJOI can be beneficial for the citizen projects at NEWSERA because the ones interested in the best practices of science communication will be interacting with the SPIs and this will give them an opportunity to increase the critical thinking and digital awareness of its projects. At the same time, the Labs at ENJOI will conduct a process of validation of ideas, connecting the ideation phase developed along the engagement workshops, with a concrete phase, where the SPIs will take shape and will be tested, facilitating the creation of pathways for Outstanding Open Science Communication (OOSC) for Scientists, Journalists, Teachers, Policy Makers and Entrepreneurs.

The Labs will be composed of specific stakeholders, making the assessment of the Manifesto more respondent to the needs, expectations, skills and knowledge of that specific type of stakeholder.

The stakeholders involved will be:

- **Academia:** career scientists that operate within the same scientific field can actively add value and knowledge to the project. They can also focus on their interest, incentives and disincentives towards a direct involvement in science communication through the media.
- **Citizens, communities:** active citizens groups such as citizen scientists and activists at local level. Their role evolves from mere data providers to active participants within the process where they are encouraged to



express views openly, frame the problem or research questions, give feedback, contribute to action, etc. The project gets enriched and a bottom-up approach is deployed.

- **Government, public institutions:** the policy makers who are interested in taking advantage of very rigorous and understandable data and science facts to be applied to political decisions from the local to international level based on scientific evidence. In addition, they have the need of an Outstanding Open Science Communication to engage with their audience.
- **Industries and SMEs:** the media industry, with a strong focus on media startups which are the most innovative actors in the media field, and those that are mostly experimenting innovation at different levels. They can contribute by bringing up the private sector view.

As aforementioned, in ENJOI we have partners that are part of NEWSERA and will organize the labs in Portugal, Spain and Italy. Belgium is the only country that does not count with a representative of the NEWSERA project, although the latest has been already involved with citizen science initiatives from Belgium in activities related to science communication (see [here](#)) and the aim will be to build a roadmap and to involve key actors at the European level.

Taking advantage of the experience and learnings of NEWSERA, and their citizen science communication Labs approach, run in 3 different countries, it is recommended that each country focuses on one of the quadruple helix stakeholders for the labs. So Italy will focus on civil society, Portugal on academia, Spain on the media industry and Belgium on policymakers.

Below is suggested the structure of the participants for the labs:

- **Citizen Science projects representatives:** up to 4 citizen science initiatives of the NEWSERA pilots per lab and per country;
- **Stakeholder representatives:** from t 4 to 8 representatives per country that should reflect main societal stakeholders: a citizen or community champion already participating in the citizen science projects; a representative of the private media sector; a researcher and a policy maker.



- **Communicator expert:** at least 1 science communicator expert per country and lab (ideally, one per CS project) that will provide his/her expertise. It can be one of the target users that participated in the EW.
- **ENJOI Lab Leaders:** at least three representatives from ENJOI project to moderate the lab in the specific country.

Overall criteria to select the stakeholders representatives

Considering the methodology developed by WP3 on D3.1 “Developing a roadmap”, the ENJOI experts will work on stakeholder mapping exercises and stakeholder prioritisation in order to choose the best representatives. The following criteria will be considered:

- Gender balance;
- Regional diversity;
- Professional background (needs to be related to the field of the stakeholder lab in the country: academia, civil society, media industry or policymaker)
- Availability of being present in the lab.

Overall criteria to select the Citizen Science project representatives

There are 38 citizen science projects that are part of NEWSERA. In order to choose the ones that will be offered to participate in ENJOI’s lab, it is suggested to organize a meeting with the project manager from NEWSERA and the project members responsible for the NEWSERA labs in each specific country. The aim will be to find out possible actors that might have a direct interest in the best practices of science communication. The selection criterias suggested are:

- Project active in NEWSERA: since the beginning of NEWSERA, there are projects more active than others so is important that the project to be in the ENJOI Lab is on the Data Journalism round of NEWSERA.
- Role in the project (project coordinator, scientific coordinator, data manager, researcher, or communication manager).
- If the project has a specific communication manager.
- Interest in the best practices of science communication.
- Availability to be present in person in the day of the implementation of the lab.

3.4 Scoping engagement aims, incentives and channels



This section contains the HOW of the methodology explaining the aims, the incentives and the channels that can be used to put it into practice. Target users and quadruple helix stakeholders are being involved at co-creation and validation phases. In the four countries, a core of common values and ground will be shared to provide uniformity, yet the actions are flexible enough to allow adaptations to the local context.

AIMS OF THE ENGAGEMENT

- Create a **sense of community** between participants and maintain a sense of belonging. It can happen on a national and international level.
- Development of **awareness** about science communication and journalism.
- The **engagement** will contribute to the ENJOI Observatory and it can help to **validate the tools**.
- Tackle **infodemic** effects (both on readers and journalists sides) to avoid mistrust and burnout.

INCENTIVES TO BE PART OF THIS COP

- **Capacity building** - access to new knowledge.
- **Networking** - exchanges of experiences in a professional learning community.
- Receive at first **hand the results** of the workshops and the tools.
- Be part of an exclusive **community**.
- **Discussion space** - interchange of knowledge among the participants in the science communication area.
- Up-to-date **news coverage**.
- It can be a **place to start** collaborative **projects**.
- Science and data journalists can be provided with more **contents and sources**.

CHANNELS

Below there is a suggestion of potential actions that can be developed in the project. All these channels and actions will depend on the interest and availability of the people involved in the community. In order to engage with the participants in ENJOI, we will take into account first the form that will be replied by them about how they want to keep being part of the community. Some of the channels mentioned are already implemented and are contributing to the



engagement of multiple audiences, such as Twitter, LinkedIn and the website.

ENJOI's Observatory

The ENJOI Observatory for Outstanding Open Science Communication (OOSC) will be a place to make all results and outputs available fostering capacity building and collaboration of all actors in the field.

Form

In order to ask participants how they want to receive information, the frequency they want to be reached out and how they want to keep being part of ENJOI.

Newsletter

It can contain important news and updates to make the audience aware of the actions of the project.

Webinar

An online event to promote networking between the participants of the EW in the four countries and share the experiences of discussing the best practices of science communication.

LinkedIn group

A tool to encourage participants to share their expertise and provide a sense of belonging.

Twitter

A tool to reach and interact with a wide audience.

Whatsapp/Telegram

A channel to share information through instant messages.

Capacity building events

A way to access new knowledge and promote synergy between the participants.

Slack

An online tool that connects people and allows the creation of different channels to disseminate resources, events and news. It can also be a tool to encourage discussions about the best practices.

Email

Open channel to receive inputs from the participants and people that are interested in ENJOI.

ENJOI'S Website

Build an online presence that allows people to know more about the project and find out interests.

Recognition on ENJOI'S Website

A recognition section with the names of the participants that contributed to improve the best practices in science communication.



4. LESSONS LEARNED FROM NEWSERA

The NEWSERA project has been running since the 1st of January 2020 and will end in December 2022. From the 38 initially enrolled citizen science initiatives, the majority of the projects have maintained engaged in the offered activities. Nonetheless, as the 3 rounds of labs spread over 3 years, and the fact that due to the pandemic face to face labs had to take place virtually, NEWSERA partners have detected the need to set periodic meetings. As an unexpected consequence, periodic meetings have evolved to support coaching group sessions focusing on different aspects of the implementation of the work plan of each pilot (social media impact tracking, indicators, ethics and misinformation, funding opportunities, among others).

Moreover, the challenges and opportunities found during the data journalism Lab, and published under the NEWSERA Policy Brief, also constitute a valuable resource for the ENJOI Community (Figure 5).

Data and science journalists

STAKEHOLDER
Science journalists, who are specialized in information about science, and data journalists, who use data as one of the main sources of reporting. They publish scientific or data content in generalist and specialized media: digital or not digital.

The Challenges

Lack of trust
Select and share only verified and relevant information based on factual data and scientific knowledge. Develop a science communication that is balanced, evidence-informed and up-front.

Lack of training
Promote specialized citizen science workshops among reporters and media professionals.

The infographic features a purple and blue background with a stylized graphic of a hand holding a data visualization (bar chart, line graph, and target) on the right side.





Take-Away Ideas

1. Build alliances with data journalists

Citizen science projects can be an amazing source of information. Engage the community to work together with data journalists.

Partner with data journalists in joint endeavours (scientific issues can become a hot topic). They can push your project forward and improve visibility.

2. Share data and support evidence-informed public media

Engage with media in order to encourage them to convey science-informed messages and news. Citizen science can be very helpful with framing the data collection and fighting misinformation. Be aware that journalists always look for other voices and should always verify your data (they should maintain their journalistic accountability).

Create specific materials for journalists that offer solutions to public issues based on your research.

3. Tell the story behind the data

Promote storytelling and “don’t call it data”. Journalists tell stories and therefore there has to be an angle, a story and a solution that comes with the data.

Scientific data can be visualized and narrated through data journalism, but be patient! A long time is needed to have enough data to publish (1-2 years).

Prepare materials for journalists: video, tables with data, pictures, etc. A press kit is a good idea!

Figure 5. NEWSERA Policy Brief 1 - Data Journalists. ³

³ <https://zenodo.org/record/5533911#.YkOOHefMJPY>



5. SYNERGIES AND POTENTIAL INTERACTIONS FOR ENJOI

Improving science communication and journalism by making them more consistently, reliable, truthful, open, engaging and useful is one of ENJOI's goals. The actions that are currently being developed to achieve this goal have synergy with other projects.

The eight SwafS-19 sister projects (RETHINK, QUEST, ENJOI, NEWSERA, CONCISE, GlobalScape, PARCOS and TRESKA) have constituted a Working Group having periodic meetings every other month in order to promote mutual learning, share and optimize resources, tools and knowledge, as well as exchange opportunities for future sustainability and find common funding opportunities (Figure 6).

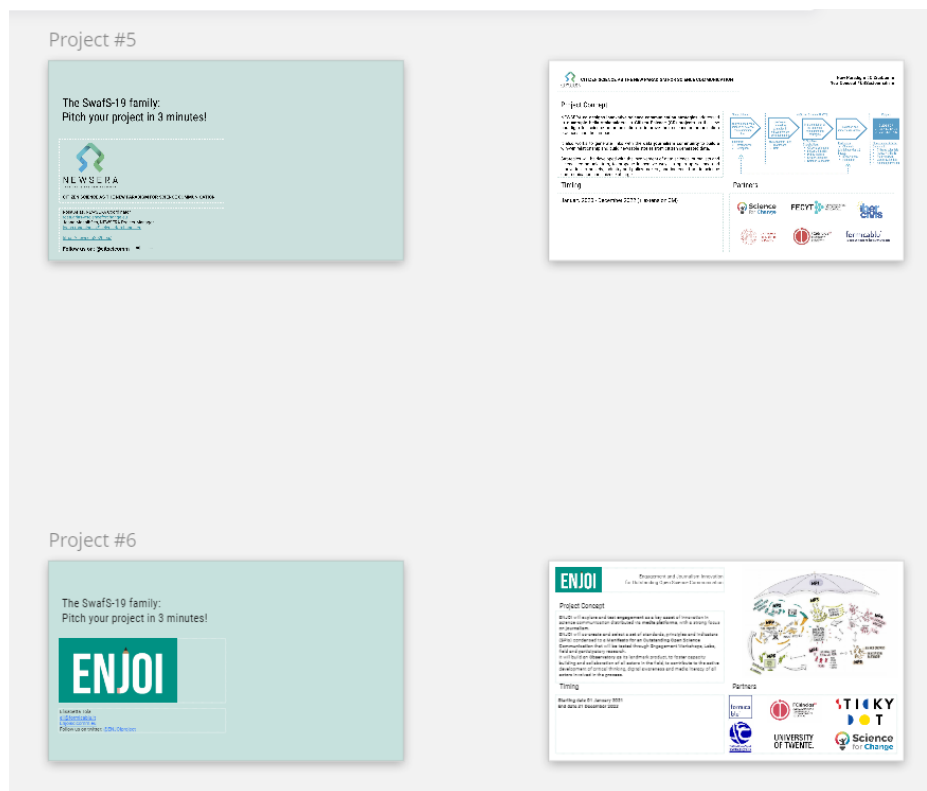


Figure 6. Section of Miro board used in SwafS-19 Working Group periodic Meetings.

So far, the collaboration between all SwafS-19 has originated a publication: Roche J, Arias R, Bell L, Boscolo M, Fornetti A, Knutas A, Kupper F, Magalhães J, Mannino I, Mendoza I, Moreno-Castro C, Murphy K, Pridmore J, Smyth F, Tola E, Tulin M, Weitkamp E and Wolff A (2021) Taking Stock and Re-Examining the Role of Science Communication. *Front. Environ. Sci.* 9:734081. doi: 10.3389/fenvs.2021.734081.



The synergy also happens in events, such as the “[RETHINK-TRESCA Final Event: Connections, Conversations and Science Communication](#)”, where Elisabetta Tola from Formicablu (coordinator of ENJOI) participated in the panel “Transformation and reflection: how can reflective practice help us adapt to current complexities?”. The ENJOI Annual Meeting also counted with the virtual presence of Alessandra Fornetti from QUEST, she shared the lessons learned in the project considering the tools developed, engagement with the participants and the indicators achieved in the different actions in QUEST.

Another important step of interaction between the projects was the acceptance of a hybrid poster “Public engagement and science communication for tackling misinformation and promoting trust in science”, co-authored by Joana Magalhães (NEWSERA), Elisabetta Tola (ENJOI), Jason Pridmore (TRESCA), Alessandra Fornetti (QUEST), Rosa Arias (NEWSERA) at the [EuroScience Open Forum \(ESOF2022\)](#).

The potential between the projects is enormous and the needs they tackle are meaningful to society. Hopefully more fruitful achievements will come, contributing directly to **outstanding open science communication**.



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