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SUPPORTING HIGH-QUALITY SCIENCE JOURNALISM AND COMMUNICATION

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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). ENJOI partners contributed and reviewed the overall draft. Finally, the final version was submitted.

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This deliverable contains original, unpublished work except where clearly indicated otherwise.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. The views and opinions expressed in this publication are the authors' sole responsibility and do not necessarily reflect the views of the European Commission and the Research Executive Agency (REA), that are not responsible for any use that may be made of the information here contained.



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1. PROJECT OVERVIEW

ENJOI (ENGagement and JOurnalism Innovation for Outstanding Open Science Communication) explored and tested 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 co-created and selected a set of **standards, principles and indicators** (SPIs) as a guide for journalists and science communicators, to enable them to perform their work with the highest quality and to meet the needs of users. The SPIs have been condensed into the **Manifesto** for Outstanding Open Science Communication (OOSC), and their definition has also been followed by the development of specific **tools** for journalists and content producers to assist them practically in their work. These result from a series of actions via Engagement Workshops (**EWs**), **Labs**, field and participatory research, evaluation and testing phases. ENJOI worked in four countries: Belgium, Italy, Portugal and Spain, considering different cultural contexts.

ENJOI has also built 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. The ENJOI Observatory aims to provide valuable insights, resources and tools to support science and generalist journalists in their work. The virtual platform has a very practical structure: Networking, where you can get all the information about the possibilities of networking (such as conferences or workshops) but also possibilities of fostering the birth of collaborative activities; Reference, a collection of all the literature and resources that can be useful for professionals in the world of science communication; and Toolbox, with the ENJOI tools, some of them are being validated and will be available soon, but we are also scavenging the world for useful tools that our colleagues can use. The Observatory, currently hosted within the project website, will evolve into an independent product bound to remain online and actively nurtured well beyond the project end. Furthermore, the ENJOI Observatory will be part of the [COALESCE](#) project, funded under the Horizon Europe scheme to build the European Competence Centre for Science Communication.



2. INTRODUCTION

How can policy shape great science communication, empowering citizens and various stakeholders to be informed on the latest scientific findings contributing to our daily life and economic, social, cultural and even political development? Reliable, transparent, continuous, and compelling information is the basis for creating a society engaged in scientific issues and contrasting mistrust of science. While it is reasonable to assume that the responsibility for this task belongs to journalists and communicators, who must find the most effective way of interacting with the scientific community of researchers to disseminate complex scientific issues, it is essential to create conditions that facilitate this work.

The media producers' lack of specialisation and professionalisation in science communication often contributes to misinformation and confusion rather than serving as a reliable reference point. This situation can sometimes generate a distrust of science, with severe consequences for society as a whole. Beyond the obvious example of the infodemic associated with the COVID-19 pandemic, there are other relevant and recent cases, such as the resurgence of climate denialism in front of the commitments required to ensure a proper green transition or the alarm generated by the idea that a general AI is already here and that computers and machines might overpower the human ability to decide and act. Often, these alarms are fuelled by conspiracy theories aimed at distracting people and even leaders, rulers, and economic players from more relevant problems, such as those, for instance, related to how to foster proper climate mitigation without failing to work in the direction of climate justice and adequate compensation. Or, to mention another example, how to regulate the AI compartment to prevent big tech companies from becoming the only actual global decision-makers and rulers.

In the past three years, the European project ENJOI worked to define a set of Standards, Principles and Indicators (SPIs) of high-quality science communication and journalism. The ENJOI SPIs are the product of different actions - such as Engagement Workshops, Labs, field and participatory research, scientific literature review, evaluation and testing phases - that also led to the creation of the ENJOI Manifesto for an Outstanding Open Science Communication and to the design and creation of the ENJOI Observatory.



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The definition of the SPIs, as well as of all ENJOI's outputs, is not only aimed at science communication producers but also readers and users. In the ENJOI framework, producers are journalists, communicators, social media content producers, institutional communicators, activists, trainers or teachers. In other words, anyone who uses a media platform to reach their audiences. The key aspect here is mediated communication, which is hugely different from any communication during events or in museums. At the same time, the project also aims to reach and support people who consume information and who have the need to see how to navigate and sieve high-quality information through the overwhelming amount of content produced daily. To better serve these diverse stakeholders, the ENJOI project has worked to define **a series of recommendations** to be shared with policymakers, regulators, funders, other experts, and key players who might be involved at different stages of supporting journalism and science communication.

As with all ENJOI activities, the recommendations result from a process of engagement of various experts and stakeholders in the four countries that are the project's core focus: Italy, Spain, Portugal and Belgium. ENJOI was looking with particular interest at the situation of the Southern European countries because, a perception confirmed by ENJOI findings, these are countries that do not have the same access to resources, the same independence and the same possibilities in the media and in general, in the information environment of Northern countries. In ENJOI, Belgium was considered a benchmark of a Northern European situation, one where journalism is granted more resources and a high degree of independence. In this region, journalistic standards are generally stronger and more easily respected. However, ENJOI research shows that the Belgian situation is quite complex and understudied; even in that country, science journalism is quite struggling.

A circular cascade validation process has ensured integration and continuous adjustments up to a final distillation that has been presented and discussed within a dedicated ENJOI Policy Event in Brussels at the BIP Meeting Centre on the 4th of October, as detailed in D8.6. This Policy Brief, thus, includes suggestions, observations and ideas shared, discussed, validated and summarised during a series of meetings.



Furthermore, these recommendations have been reassessed through a participatory session with the participants of the ENJOI Policy Event. Therefore, all participants **should be considered contributors** to this Policy Brief. Their names and attributions are detailed in the table below and will be specified in the final graphic layout of the Policy brief that is currently being designed:

First name	Surname	Institution/Organisation/Foundation
Kim	Barbé	Research Foundation Flanders - FWO
Ingrid	van Marion	ULB
Gian-Paolo	Accardo	Voxeurop
Alexandre	Torres	Stickydot
Vitalba	Crivello	European Parliament
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Joana	Magalhaes	Science for change
Federico	Bastarolo	ProMIS (Mattone Internazionale IT)
Iwan	Groeneveld	Science Europe
Alexander	Halksworth	Science Europe
Liesbeth	Delvax	FWO
Ahmed	Ghareeb	Smart dots foundation NGO
Irina	Tiron	Research Executive Agency
Stefano	Spinaci	European Parliament
Senne	Starckx	Sciencejournalist.be / EFSJ
Aleksandra	Hebda	European Commission
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Elisa	Nelissen	KU Leuven
Jason	Pridmore	Erasmus University Rotterdam
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3. THE KEY INGREDIENTS OF ENJOI RECOMMENDATIONS

The recommendations presented and shared during the ENJOI Policy event, and finally integrated with suggestions and insights from the participants, are organised in five thematic areas:

- Engagement, Inclusion and diversity
- Open science and open access
- Training and capacity building
- Sustainability
- Engagement
- Local communities

3.1 Engagement, inclusion and diversity

Diversity is the best peaceful weapon against polarisation and discrimination. Diversity is a fundamental theme and has become a need on several levels. The media should respond to the requests from the **diverse communities and cultures** within their audience and bring them **into the content production process**. They should listen to their readers or listeners and **apply diversity as a guiding principle** and **engagement strategy** in the **whole life cycle of information**. This way, the engagement wouldn't be intended only as a make-up strategy but as an additional value to be intertwined within the entire process of design, craft and delivery of the science communication outputs.

One of the ways to do this is by adopting the lens of **intersectionality**, becoming aware of the increased difficulty and disadvantages some people experience when accessing information and, in general, science education and science communication due to the overlapping of different discriminating and unequal determinants, be their gender, socio-economic origin, cultural or racial discrimination and so on. Furthermore, in recent years, a much stronger reflection has finally started to take place within the scientific community concerning the **colonial contribution** to the set-up of the contemporary scientific system. Recognising the European colonial past and working towards a genuine discussion of the consequences and the possible compensations and/or measures to overcome it is just an initial crucial step. Younger generations of European citizens are very vocal about this and reject a portrait of the science ecosystem as a very neutral one, while it actually has a long and, in some cases, controversial history that needs to be recognised.



Furthermore, **real engagement** can add value and substance to the communication outputs. Science journalism could take inspiration from the field of investigative journalism, where the need to test hypotheses or verify facts has led to a much stronger involvement and engagement of communities of readers and listeners, who are sometimes pivotal to confirming information at a local level.

In synthesis, support and particular attention should be given to communication initiatives, projects and activities that respect some or all of **these six criteria**:

- are based on requests from diverse communities and cultures (responsiveness)
- apply diversity as a guiding principle (sources, contents, distribution model)
- engagement strategy in the whole life-cycle of information
- adopt the lens of intersectionality
- deal with the impact of colonialism on scientific ecosystem
- explore more solutions/approaches enabling people to act

3.2 Open science and open access

Transparency and accessibility of scientific data and results are values that we can no longer do without. The entire **scientific process** must be made open and accessible, and open data should be **the rule** in any institution.

The issue of Open Access to data and publications is an area in which the European Commission has already shown interest and commitment, taking a first step with the creation of the **Open Research Europe** (ORE) platform. The platform currently hosts results and publications related to European projects (Horizon 2020 or Horizon Europe), for which it has implemented a **completely transparent and accessible peer-reviewed** publishing system. It is also possible to publish results after the funding is finished. Every publication has **an associated index** to facilitate the evaluation of researchers and their publications.

Enough **risks and damages** are related to the lack of openness and transparency. When institutions do not make data publicly accessible, they leave room for the **creation of false news, false interpretations**, and, above all, distrust of science itself. It's vital to keep working on transparency and maybe even force it by asking all the platforms to have a code for transparency or to make sure they describe their process.

In summary, there are **three actions** that policymakers and funders should enact:



- making open data the rule for every institution
- rewarding a fully open and transparent science communication process
- adopting a code for transparency to be used by all platforms and media

3.3 Training and capacity building

Interestingly, this section is the one that **raised the most interest** and gained more contributions during the ENJOI Policy event in Brussels with many suggestions coming from the participants.

Training is defined as **the core of high-quality science communication** and science journalism, and it is also crucial to developing critical thinking. However, at the same time, it is currently a fundamental weakness in the journalism sector. Many **generalist journalists** are sent to cover science topics, particularly during crises and emergencies. But their training in scientific subjects and science-making processes is very scarce. There is a **certified need for journalists who understand science** and can interact with scientists.

A starting point should be establishing **a connection with journalism schools**, most of which lack science training in most countries. It is also crucial to provide lifelong, high-quality training for journalists. At times when the advent of innovative environments and new technologies is an ongoing challenge, content and information producers need to learn how to deal with them at any stage of their career. Recent new challenges are also taking the stage, such as the **emerging role of AI tools** and how they can integrate and support journalists' roles rather than substituting them.

It is essential to support **mutual collaboration** between journalists and researchers to help them realise that they need each other to continue doing their jobs in the best possible way. For this to happen, the role of policy is to **foster training and collaboration** between all interested parties. Universities and research institutions should bring on board journalists who can be critical towards science, and researchers should be more open and responsive to societal needs and expectations, fostering a mutual trust with the citizens, also through the aid of journalists. Journalists can bring and share societal issues with scientists to make them more aware of people's needs and views. Collaborative schemes between scientists and journalists also require recognising the communication efforts in the scientists' career advancements.



That is where policy could be a critical game-changer. Both in **promoting training** and even in **supporting the recruitment of science journalists** in the newsroom of non-specialized media. And establish mechanisms to recognise and evaluate scientists' communication work.

Finally, science journalists should be involved in **defining the funding grant schemes** to ensure proper consideration and attention are given to the project communication activities and societal information needs.

In synthesis, six recommendations are suggested to support the growing capabilities of present and future journalists:

- science journalism to be included in every journalism school
- institutions to employ trained science communicators
- lifelong high-quality training to be made available for journalists
- recognition of value of communication in scientists' career advancement
- setting up visiting programs, in-residence fellowships
- fostering collaborative long-term projects involving scientists and journalists

3.4 Local communities

A special attention, within the recommendations, is deserved by **local communities**. However, there is at least an apparent clash between this need and that of describing the future impact of a communication plan. Private investors and even public funders demand impact be measured **quantitatively** through numeric indicators. Particularly in digital communications, this requirement is often translated **into numbers** of people reached, impressions, shares, etc.

Many small communities **will never make big numbers**, yet they need someone to produce information for them. Therefore, there should be alternative and more sensible ways to measure impacts when working for small, marginalised communities. In this respect, the ENJOI final recommendation is to look at **scaling replicability with a cautious eye**.

Also, an important point that relates both to local communities and the inclusivity and diversity aspect is that there is no universal approach to innovation and communication. As was strongly highlighted during the ENJOI Policy event, what is innovative in one environment might be far from attainable in another. Although specific standards might seem to be the same everywhere, in reality, the lack of



funding, the enormous differences in infrastructure among urban and rural areas as well as among countries even within the European region, and the way the media system is organised and the role it plays in the public arena make it very difficult for many journalists and communicators to apply the same standards and to be measured by the same indicators.

Therefore, three concrete measures should be taken to support access to high-quality scientific information for local communities:

- adopt measures of impact based (also) on qualitative indicators
- make scientific information fully accessible to non-educated, hesitant or disadvantaged people and groups, regardless of their quantitative relevance
- test a different approach to scaling and replicability

3.5 Sustainability

Making a project economically feasible and sustainable is one of the biggest issues all content and information producers have to deal with. After the training issue, economic sustainability was the most discussed by the participants at the ENJOI Policy event in Brussels. It has to do with policy, economics, and culture, and it directly affects the quality of the content produced. The need for economic support concerns all realities.

Having adequate financial support is vital to guarantee the correct process behind content production. Smaller or independent journalistic projects often lack structural funding and thus struggle. The risk in this case is that they end up looking for money in the private sector, where they have to deal with conflicts of interest, which, in turn, penalise transparency.

Writing or talking about science topics is not a one-directional process that goes from scientists to journalists to society but needs a few back-and-forth interactions, which are expensive and time-consuming. This process is too often sacrificed and simplified to allow for a coarser production of content prioritising quantity over quality: that's where (political and economic) support for independent journalism can make the difference.

Among the most common solutions for sustainability, **membership** is one of the most cited. In general, a community involved in producing content for a media outlet might also be happy to support that particular media economically. There are several cases in which engagement was crucial in the survival of some investigative journalism outlets,



and the same could happen for science journalism. However, it is not always a feasible strategy, particularly when serving low-income communities of readers/listeners.

Other solutions already in place are the syndication with other media (that is, produce content for one's outlet but also sell it, sometimes revisited in different formats, to others) and the production of content for third parties such as white papers and reports that contain information in a non-journalistic format, translations or copy editing. At the same time, many big media outlets and legacy media tend to make intensive use of pre-produced materials, such as press releases and other press kit products, without adding any additional work. This practice, prevalent when covering science topics, translates into an offer of scientific information that is never crafted in response to the needs of a community and is, often enough, merely focusing on news, results, and curiosity-driven facts.

Funders and experts participating in the ENJOI Policy event highlighted that the solution that would probably grant more independence and the ability to work in-depth on a science story is to get funds from public money, either through the European funding schemes or those established by national foundations.

Another route to explore and implement is having funds directly from strong and well-supported scientific institutions. Recognising the need for high-quality science communication might convert into initiatives supporting journalists' work. An exciting project exploring the possibility of supporting journalists and at the same time contributing to their training and understanding of the science system is the ERC recently funded Frontiers project, which offers the science journalist community in Europe the opportunity to have fellowships and spend quite a significant amount of time (from three to six months) in a Lab to have an in-depth knowledge of a specific scientific field. The focus is on the most complicated sciences, the ones more difficult to explain, such as basic science, which is farthest from a practical application. The idea behind the project is also that of a cross-pollination to see if having a journalist in a laboratory also influences the way scientists work.

Finally, there is a recognised need to inform policy-makers about the media and independent content producers' situation. With the massive crisis in the media sector, there are no longer independent editors. Hence, a significant portion of the content published in daily newspapers is paid by private entities who might have an interest, for instance, in greenwashing or social washing.



The four final indications for policymakers and funders are the following ones:

- projects based on engaged communities
- public funding for structural development - avoiding the need to rely on funding from private sources
- provide infrastructural resources to communities that are not attractive enough for market players (rural, non-urban, etc)
- support small-scale and flexible projects testing new approaches



4. CONCLUSIONS

The involvement and active participation of policymakers, funders, regulators and leaders of international institutions in the validation and integration of the policy recommendations has allowed the ENJOI consortium to come up with some new and relevant indications that might be applied in future policies and the design of grant schemes.

The most relevant and innovative recommendations regard the issues of strongly fostering the engagement of the users, audiences and local communities in the entire process of communication. Engagement, inclusiveness and diversity should never be used just as flags but as significant approaches to craft a science communication action that might impact people's lives.

A pretty innovative aspect that emerged from the ENJOI process was calling the European scientific community for recognition of its position of relative power due to historical reasons that have their roots in the colonial past. Throughout the project, there has been a request to craft a new discourse about possible changes to be implemented in the future regarding the consideration of non-European perspectives that need to be involved in the discourse about science. If this is not merely a communication problem, it is undeniably also an issue that must be considered in any communication strategy and development.

Although there are more and more opportunities for journalists to become acquainted with the scientific world, there is still an enormous need for training at any level, from young journalists in schools to mid- and advanced career journalists who need to be constantly updated both on the results and the new frontiers of the scientific enterprise and on the technologies and tools that are shaping the communication environment.

However, the most complex and critical challenge seems to be the resources. The economic aspects remain complicated and insecure, and particularly when looking into independent media and content producers and Southern European ecosystems, the need for support remains the absolute priority. Innovative approaches should be designed and taken at the institutional level to grant an existence and a future to a healthy, transparent and reliable communication ecosystem.

