

Re-thinking Science Communication: Take-away Ideas for Citizen Science Initiatives

The relationship between science and society is evolving. Public and private institutions aim to be close to citizens in order to increase legitimacy, accountability and good governance. In parallel, science-informed decisions are also gaining momentum in advanced democracies.

These changes affect the working practices of scientists, policy makers, science communicators, journalists, and other practitioners. Such changes also impact how citizens relate to science and science communication.

WHAT

Citizen Science

Citizen engagement in science is a reality. People are involved as volunteers in the scientific process, commonly in data collection, but also in other phases, such as quality assurance, data analysis and interpretation, problem definition and the dissemination of results. The critical purpose of any citizen science project is to contribute to scientific research, but also empower citizens creating a collaborative effort between scientists and their community. It also promotes science literacy and critical thinking for an informed society, increases trust in science and contributes to defeating the fake news.

HOW

NEWSERA and the #CitSciComm Labs

The #CitSciComm Labs are the core activity of the NEWSERA project, aimed at unveiling the potential of citizen science projects as a communication mechanism for science and technology. The #CitSciComm Labs, composed of science communicators and data journalists, representatives of citizen science projects and their quadruplex-helix stakeholders, work on co-designing innovative strategies to better communicate. Each Lab is named after the addressed stakeholder and has local groups in Italy, Spain and Portugal.



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Citizen and society at large



Academic Scientists



Public sector and Policy makers



Industries and SMEs



Data and science journalists

Citizen and society at large



STAKEHOLDER

Citizens who currently participate in citizen science projects, who are interested in science or society at large, or who may benefit from citizen science projects to address socio-environmental challenges.

The Challenges

Lack of industry

Citizen science projects might not be able to engage citizens that are outside concerned groups or amateurs already interested.

Lack of understanding the real impact

It is not easy to have an idea about the impact of science communication across society. Thus, it is important to define ex post evaluation strategies to understand and then measure the effects of a project involving the citizens through specific participative methodologies. In pandemic times, focus groups could also be done online.

Lack of long term engagement

Citizens' retention strategies: rethink how to maintain the engagement and motivation of citizens over a longer period of time.

Take-Away Ideas

1. Foster Public Engagement

Public engagement makes the process of knowledge creation more open towards society.

Co-create the research project with citizens: make sure you understand what their concerns and needs are.

Intercept potential volunteers through initiatives on the territory:

- Team up with already existing groups, associations, aggregative centers (e.g. youth centers, scouts)
- Create exchange meetings where every citizen can intervene bringing their thematic needs and concerns.

2. Involve Citizens in doing science

Engage citizens as sensors, as data interpreters, up to active collaborators in identifying the research problem, setting up research questions and to even analyse data. In other words, engage and involve citizens in each step of scientific research.

Involve citizens with scientists. This alliance will develop into a mutual exchange and benefit for both.

Citizens can be involved directly in the dissemination of projects results in public events open to a broad audience: locally this may increase participation to follow-up events and further promote new volunteers enrolment.

3. Be flexible in difficult times

During COVID-19 times, make as much use as possible of social media to maintain the digital communication with citizens.

As many platforms for citizen science projects have shown, gamification approaches (namely to give rewards according to specific milestones reached) might be useful to ensure a high rate of participation and avoid turnovers.

4. Fight fake news

Citizens can be an evidence-informed network to fight against fake scientific information.

Academic scientists

STAKEHOLDER

Researchers that work in universities, research centres, science and technology parks, learned societies, technology transfer offices, units of scientific cultures and other professional interfaces.



The Challenges

Lack of initiative and motivation for academic scientists

Understand what motivates scientists to work outside their routine research but also the barriers they face in doing so (e.g., pressure to publish, workload, lack of time, among other things).

Lack of trust in citizen generated data

Citizen science can be as rigorous and trustworthy as “professional” science: promote trust among academic scientists. Improve data validation and data quality of citizen science projects (scientists need to have the evidence of data validation mechanisms).

Lack of funding

Promote new ways of communicating to get more funding (consider social media as a potential way to boost financing and attention to the research activities).

Lack of professionalization

Rethink organization culture and develop new talent at the interface of science and society. Provide training to academic scientists in citizen science matters.

Take-Away Ideas

1. Involve researchers and academics

Present citizen science projects in academic fora (conferences, journals) beyond the citizen science “bubble”.

Make communities and platforms available and open as opportunities for researchers to improve their research. Allow scientists to formulate their own questions.

2. Identify champions within the scientific community

Have citizen science ambassadors within research institutions to promote citizen science.

Engage scientists in citizen science projects that help to amplify the results’ communication at every level.

3. Be sure to communicate the science within the project

Make sure to communicate the scientific features of citizen science projects to academic scientists. This way the scientific community will understand that citizen science is real science, and hence, can create a positive spill-over effect in the community.

Make clear the scientific aims of every citizen science project by presenting quantitative and qualitative benefits of implementing this methodology.

Be sure academic scientists recognize the scientific component of citizen science projects, by also training them in using this methodology.

4. Nurture coordination among researchers involved in similar citizen science initiatives

Acknowledge the diversity of the citizen science ecosystem and make use of existing experiences and resources.

Co-create citizen science projects along with researchers involving all scientific disciplines and research fields (including social sciences and humanities).

Find relevance to research and make the bridge between the local level and the researcher’s interest. In doing so, you make sure any research answers societal interests directly.

5. Promote Open Science

Sharing information might benefit scientists and their research. Following the European Commission recommendations, open science is a policy priority and the standard method of working under its research and innovation funding programmes. It improves the quality, efficiency, and responsiveness of any research.

Public sector and policy makers



STAKEHOLDER

Members of a government department, legislature, or other organization who are responsible for making rules at the local, regional, national, and European level. Officers and public sector officials who create ideas, plans, and policies carried out by a specific government.

The Challenges

Lack of awareness

Nowadays, it is clear that citizen science initiatives can be catalysts of innovation: their inputs can lead to more informed and accountable outcomes in the policy and science agendas. By merging both agendas, we can expand the evidence towards a citizen-based policy making.

The policy ecosystem is complex and dynamic

There is a need to adopt a flexible mindset, and concrete coordination through the appointment of a suitable organization structure at a horizontal level willing to involve as many ideologies as possible, so changes in governments will not affect citizen science initiatives and its communications.

There is also a need to build standardized communication messages and potential barriers and mitigation strategies to overcome issues quickly.

Lack of trust

Tensions are still evident between traditional lobby and the innovative way of bringing citizens at the forefront of policy-making in science. Nonetheless, from a citizens' perspective, calls for more openness and accountability in policy-making are a real issue, together with a profound interest and eagerness from legislators to better appeal to public opinions' and knowledge.

Lack of training

Promote specialized citizen science workshops among governmental policy makers at the European Union, state members, regions and local governments levels. Enhance better coordination among territorial levels of government in order to avoid overlaps and to extract mutual learning experiences.

Lack of funding

Find resources for policy agenda and cost of participatory processes, and lobby for an increase in the budget for citizen science initiatives.

Take-Away Ideas

1. Build alliances with policy makers

Engage the citizen science community to work together with the public administration at any level: from the local, regional, national, European or even international. Partner with policymakers in joint endeavours, and avoid unnecessary conflicts.

Policymakers are also trying to find new ways to connect with citizens and improve administration popularity, and this is something that we all can take advantage of (mutual interest).

Do not think as a scientist! They are interested in solutions to their problems, not in scientific results or research questions.

2. Do your work

Understand which level local, regional, national or supranational and type of policy maker is of interest to the project. One of the main challenges at the EU or international level comes from the diversity of cultures and legislation. A previous research on how and whom a territory is governed is of utmost importance to better understand how citizen science projects can be integrated in the political sphere.

3. Timing

Connect to the policy agendas timings. It is also important to find the right moment to collaborate.

4. Support evidence-informed public policies

Check out if your citizen science project can address any issue in the political agenda to be useful for decision-making.

Co-create the research project with policy makers. Contribute with data and research outputs to more evidence-informed public policies. Create specific materials to policy makers that offer solutions to public issues based on your research.

Convey to government agencies and departments science-informed messages and recommendations based on your data.

5. Have a direct and concrete message

Adjust your message to a stakeholder which is usually extremely busy and solving urgent matters all the time. Have a clear idea of what you want to transmit before meeting them.

Simplify communication with usable products and maintain first "informal" conversations with technicians/policy makers available before presenting the project.

6. Team up with other organizations and let them see what you have in common

Coordinate across governance levels: Think globally, act locally. Work together with complementary citizen science projects. Make the case for citizen science as an innovative method to policies planning to help to give consistency to public policies.

Industries and SMEs



STAKEHOLDER

Industry, private companies, which can be multi-national organisations as well as SMEs and Start-Ups.

Entrepreneurs, R&D, R&I.

The Challenges

Lack of trust

Private sector may be sometimes reluctant to share data with citizen science projects. In order to avoid this, citizen science should be part of the research and innovation ecosystem, and therefore, the private sector would also benefit from this practice in the short and long term.

Lack of mutual knowledge and understanding

Acknowledge citizen science as a key asset for the company's image and reputation. Find a common agenda (for instance, showing them the connection between agriculture, livestock and biodiversity).

Lack of common language

Find a common language between projects and private sector stakeholders.

For that purpose, it's important to facilitate communication channels and exchange interfaces among researchers, citizens and private sector stakeholders.

Lack of funding

Support research by providing funds from international research projects.



Take-Away Ideas

1. Involve industry and SMEs

Including the private sector in the entire process of the project's design can benefit the project in many aspects: new perspectives and research questions, funding opportunities, further outreach and many others.

Try to engage with the vision and mission of industries with a potential interest in your project.

Industries are also exploring better ways to engage with citizens: use that common objective to work together on joint initiatives.

2. Network with sister citizen science projects

Build up a social capital network to gain credibility and to ensure social impact.

Shape a service for the industry to create a win-win situation.

3. One size does not fit all

Identify the right industry. Industry is not a homogeneous category, not only because they may be different for their sectors but even because they might differ in size, scale of their business, ownership and so on. The same strategy could not be adapted for all.

4. Embrace new business models

Fight stereotypes. Convince the industry that Responsible Research and Innovation (RRI) and Corporate Social Responsibility (CSR) dimensions are important aspects of today's industry. Help industry to adopt "greener" and "more social" models.

Contribute to rethink organization culture and develop new talent at the interphase of science and society.

5. Your data is valuable. Be proactive

Call attention to the added value of the data generated by your citizen science project.

Show that data and citizen science can help them in multiple ways: (1) to improve their products/services/processes, (2) to improve their social and environmental capital, and (3) to change the background narratives.

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.

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!