

Brief Report of the

High-Level Policy Event

Citizen Science for Policy across Europe

Held on June 22nd as a satellite event of the R&I Days 2021



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1. Introduction to the event

On June 22nd 2021, the EU-Citizen.Science project and the Spanish Foundation for Science and Technology (FECYT)/Ibercivis Foundation organized the high-level policy event “Citizen Science for Policy across Europe” as a satellite event of the European Research and Innovation Days 2021. This event was organized with the support of the European Commission, the Spanish Ministry of Science and Innovation, the Portuguese Ministry of Science and Technology and Higher Education and the German Federal Ministry of Education and Research.

Representatives from ministries across Europe and at the regional and local levels were invited to engage in a discussion about citizen science and its benefits for policy making and to develop collaborations among policy makers with citizen science interests.

The event was kicked off by the EU-Citizen.Science Project coordinator and FECYT/Ibercivis. The EU-Citizen.Science project coordinator Silke Voigt-Heucke provided the content of the event, explaining the roadmap and the main goals of the EU-Citizen.Science project, whose mission is to serve as a Knowledge Hub, in aid of the mainstreaming of citizen science for science, policy and the society at large.

FECYT’s Director of Operations Cecilia Cabello spoke on behalf of both FECYT/Ibercivis, highlighting that these foundations strongly believe in the importance of strengthening and communicating this type of initiative to attract more participants and turn citizen science into a complementary scientific and informative methodology. She also stressed the importance of working hand in hand with policy makers to promote social and political change in research and innovation, a goal that can be achieved through citizen science.

The event was composed of four thematic blocks, each dedicated to discuss a citizen science topic. Each block began with a presentation given by an invited speaker, followed by an open discussion for sharing different experiences from representatives of the European Commission, Ministries of the European Member States and the participants in the event. The full list of the invited panelists and their affiliations is provided in the Acknowledgments. The event was jointly moderated by Antonella Radicchi, project manager of the EU-Citizen.Science project, and Marzia Mazzonetto, CEO of Stickydot.

The main objectives of the event were:

- Explore the current state of citizen science in Europe to enhance synergies across borders.
- Open discussions by presenting good practices and success stories about citizen science operating at different levels, highlighting the barriers that affect the development of citizen science and providing solutions to overcome them to produce a powerful policy decision making tool.
- Foster collaborations among different countries to promote citizen science, establishing common paths.



The thematic block 1 was dedicated to discuss the current state of citizen science across Europe by means of a talk given by Sven Schade, Scientific Policy Officer, Joint Research Center, European Commission, followed by a discussion with the invited panelists.

Promoting citizen science through the launch of national plans for funding citizen science projects was the focus of the thematic block 2, which hosted a talk by Carmen Castresana, General Director of Research Planning, Spanish Ministry of Science and Innovation, that was followed by a discussion with the invited panelists.

José Paulo Esperança, Vice-President of the Foundation for Science and Technology, Ministry of Science and Technology and Higher Education

opened thematic block 3 with a talk about overcoming the barriers to citizen science, which was followed by a discussion with the invited panelists.

The final thematic block was dedicated to discuss policy instruments to anchor citizen science in research and society, with a talk by Anne Overbeck, Policy Officer for Citizen Science, German Federal Ministry of Education and Research (BMBF), followed by a discussion with the invited panelists.

The event was closed by the EU-Citizen.Science Project coordinator and FECYT/Ibercivis who highlighted the importance of citizen science as a powerful tool to democratise science and involve citizens in policy making.

| Event Schedule | |
|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 11:00 - 11:05 | Welcoming and introduction to the event by the EU-Citizen.Science Project coordinator and FECYT/Ibercivis. |
| 11:05 - 11:25 | Block 1: Current state of citizen science across Europe introduced by Sven Schade, Scientific Policy Officer, Joint Research Center, European Commission , followed by a discussion. |
| 11:25 - 11:45 | Block 2: Promoting citizen science through the launch of national plans for funding citizen science projects introduced by Carmen Castresana, General Director of Research Planning, Spanish Ministry of Science and Innovation , followed by a discussion. |
| 11:45 - 12:05 | Block 3: Overcoming the barriers to citizen science introduced by José Paulo Esperança, Vice-President of the Foundation for Science and Technology, Portuguese Ministry of Science and Technology and Higher Education , followed by a discussion. |
| 12:05 - 12:25 | Block 4: Science for the people, by the people – policy instruments to anchor citizen science in research and society introduced by Anne Overbeck, Policy Officer for Citizen Science, German Federal Ministry of Education and Research , followed by a discussion. |
| 12:25 - 12:30 | Concluding remarks by the EU-Citizen.Science Project coordinator and FECYT/Ibercivis. |



Figure 1.1: Schedule of the event.



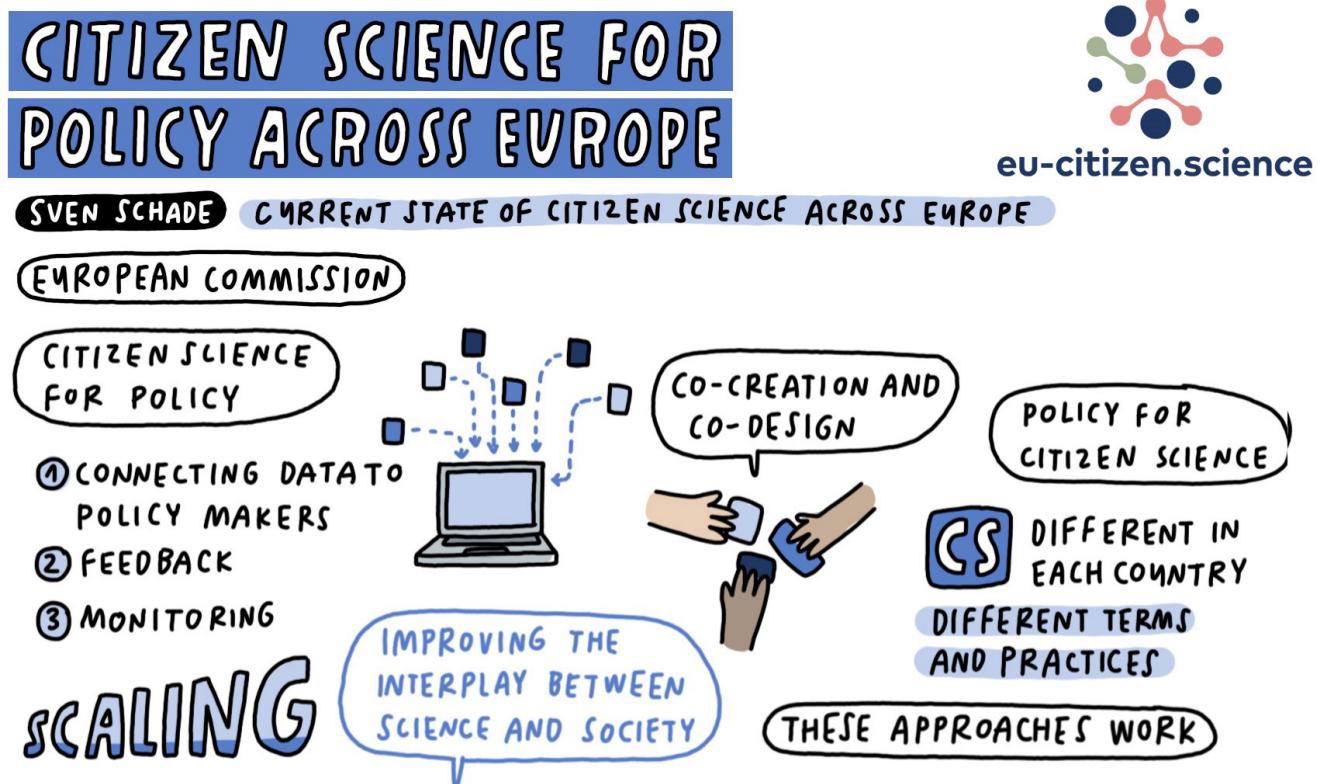


2. Thematic blocks of the event and open discussion

This section provides an overview of the four thematic blocks around which the event was structured. It contains four subsections, one subsection per thematic block, in which the input provided in each presentation and the discussion that followed are summarised.

2.1. Thematic block 1

Current state of citizen science across Europe



THIS IMAGE IS A VISUAL SUMMARY OF A PRESENTATION GIVEN AT THE EVENT "CITIZEN SCIENCE FOR POLICY ACROSS EUROPE" HELD ON 22 JUNE 2021 ORGANISED BY EU-CITIZEN.SCIENCE.

Figure 2.1: Visual summary of the presentation of Sven Schade. Credits: Zsófia Lang

Sven Schade opened the first thematic block about the current state of citizen science in Europe explaining the two perspectives of looking into citizen science and policy:

- Citizen science for policy: how can citizen science support policy-making directly with the provision of data, data analysis and interpretation, and how this data can be used as evidence for policy making by public bodies and to monitor these decisions.

- Policies that support citizen science: open science policies and research funding such as Horizon Europe.

It is important to note that citizen science is present in a lot of countries but the approaches are very different and contextualized. Sven Schade pointed out that these differences may be due to countries' cultures and how citizen science is supported within them. This highlights the importance of community tools: platforms to share data and knowledge (such as eu-citizen.science) and other organizations at the national level.

The discussion started with Marzia Mazzonetto's question: "Can you dig a bit deeper into the potential future developments of citizen science at an European level? What do you think that we should expect according to you?", which was answered simply by Sven Schade in three main points:

- Closer integration of citizen science (promoted with Horizon Europe)
- More scaling and research on citizen science (also at the local/regional level)
- Richer portfolio in terms of public administrations (more discussions on national statistical offices and public administrations on how to benefit from citizen science)

He also called attention to the importance of citizen science development, replicability and scaling: “It works and the collected data is used as evidence for policy-making; since 2013 the community is more organized and the interest in citizen science is growing, so there is a need for more citizen science projects”.

Participants in the chat were very active, so Marzia Mazzonetto dedicated time to include chat questions and topics to the conversation. One of them was about citizen science and the SDG agenda. Sven Schade explained that citizen science contributes to the

[Sustainable Development Goals, SDGs](#), monitoring (marine litter, biodiversity indicators...), it makes more knowledge available and this can be used to take action at a local level. This process is aligned with the EU Strategy on co-design and co-creation: “Think global, act local”.

How can we find ways to join forces towards better achievement was a conversation in the chat, so the panelists brought themselves to debate about that. Linden Farrer (DG Research & Innovation “Open Science” unit) talked about the undervaluation of citizen science and how it can be considered through new Open Science collaborations, Horizon Europe methodologies and Quadruple Helix actors' involvement¹. In the same vein, Luigi Ceccaroni (Earthwatch) noted the increasing Horizon Europe investment in citizen science and warned about language barriers in other countries, especially in Eastern Europe, where citizen science is gaining attention and funding opportunities are not reaching in the same way.

¹ It is a model that encourages bottom-up collaborative processes in policy making and therefore highlights the importance of society in taking an active role.

2.2. Thematic block 2

Promoting citizen science through the launch of national plans for funding citizen science projects

Carmen Castresana was in charge of introducing how citizen science can be supported by a Ministry. First, she explained that [FECYT, the Spanish Foundation for Science and Technology](#) (which depends on the Ministry) and the Ibercivis Foundation (as experts in citizen science projects management) worked on an action plan to foster citizen science. In 2016, Ibercivis, with the support of FECYT, launched an [Observatory of citizen science in Spain](#), which is currently working; eight meetings and an International Forum on citizen science to explore the citizen science state of the art were organized. Following this evaluation process, the Ministry added in its [Scientific and Innovation Culture grants](#) a specific line of action to support citizen science projects. In 2020, the number

of applications and citizen science projects funded improved and this led to the promotion of the [Spanish Strategy for Science, Technology and Innovation \(2021-2027\)](#), which will develop new activities and processes to incorporate citizen science in the regular projects that are going on in Spain.

Marzia Mazzonetto asked how these projects are evaluated and Carmen Castresana summarized the criteria in a few fundamental pillars: the quality of the project, the relevance of the scientific and technical program, its structure, the budget and the participation of the audience, with a strong focus on how it will be communicated to society.

Panelist Aurelija Povilaikė (Lithuanian Research



Council) wanted to know more about how the strategy was being implemented at the institutions and whether the Spanish Ministry of Science and Innovation has received any feedback from the institutions it has worked with and how they have taken this strategy on board. Carmen Castresana claimed in her introduction that citizens need to know about what is going on in science and innovation, so that they are part of the decision-making process, so she highlighted the importance of having a department or person working on science and research dissemination. "The rise of science communication and dissemination is a culture change", Aurelija Povilaikė commented and Carmen Castresana confirmed it: the Ministry was observing the increase of science communication units in the institutions.

Daen Smits (Ministry of Education, Culture and Science of the Netherlands) joined the conversation, presenting examples in the Netherlands to foster citizen science at the national level. Some of them were the [Strategic Plan from the Dutch Research](#)

[Council for 2019-2022](#), where researchers can request funding for citizen science, and the [Dutch Research Agenda](#) (NWA). Adrian Pascu (Romanian Ministry of Research, Innovation and Digitalization) provided some more examples in Romania, such as the initiative [Doing Research Midnight in Romania](#) (DoReMi-RO), connected to the European Researchers Night, and the participation of the astronomical observatory in Galați, Romania, in the international project Asteroid Search Campaign organised by International [Astronomical Search Collaboration](#) (IASC, by NASA) and the "Astronomers Without Borders" Association. An interesting question emerged from the chat: "How to guarantee that they are not just one-off projects and that there is long-term support on evolution of projects?". Marjan van Meerlo (European Commission) shared the [WeObserve Roadmap](#) developed by the [WeObserve project](#), where recommendations on the sustainability of projects, gap analysis and pathways to follow can be found.



Figure 2.2: Visual summary of the presentation of Carmen Castresana. Credits: Zsófi Lang



2.3. Thematic block 3

Overcoming the barriers to citizen science

CITIZEN SCIENCE FOR POLICY ACROSS EUROPE



JOSÉ PAULO ESPERANÇA OVERCOMING THE BARRIERS TO
CITIZEN SCIENCE

PORTUGAL CS = CROWD SCIENCE

SEVERAL INITIATIVES

BIODIVERSITY



MARINE LITTER

DATA COLLECTION



① BETTER FINANCING

② MORE VISIBILITY

③ PRIZES FOR COMMITMENT

④ BETTER CITIZEN TRAINING

⑤ STRONGER CONNECTIONS TO

RESEARCH UNITS OR ACADEMIA OR RELATED

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Figure 2.3: Visual summary of the presentation of José Paulo Esperança. Credits: Zsof Lang

Citizen science is a rising movement, but countries cannot always carry out the actions easily. José Paulo Esperança laid the cards on the table and mentioned several projects which overcame economic and logistic barriers and prospered at the national and even global level: [Invasoras](#), [Lixomarinho app](#), [BioDiversity4All](#), [GelAvista](#), [aBEIRAr...](#)

COVID-19 joined the forces of scientists and citizens, and it showed that citizen science can be really important in engaging people. The pandemic made citizens more aware and interested in science, but a country needs actions at a higher political level to strengthen citizen science projects. José Paulo Esperança suggested:

- Better financing, public and private
- More visibility (conventional and social media)
- Prizes for stronger commitment

- Better citizen training, people need to be more educated
- Stronger connection to research units and infrastructures

Due to time constraints, the discussion of this block had to be shortened, so the moderator asked just one question about how the stronger connections between citizen science and its contribution to the SDGs may overcome the barriers. José Paulo Esperança answered that citizens were becoming more and more sensitive to both issues and professional scientists must listen and engage them in their results. In order to achieve this mission, he indicated: "SDGs are very precise and clear guidelines that can help both parties".



2.4. Thematic block 4

Science for the people, by the people – policy instruments to anchor citizen science in research and society

The latest topic of the event was dedicated to those countries and organizations that have established citizen science as a tool for policy. As they have done in the Netherlands, in Germany they also wanted to go out and encourage the German population to ask questions to scientists. With these data, they have created an agenda paper to develop citizen science projects around those ideas. Anne Overbeck presented the platform [Bürger schaffen Wissen](#) and the [Green Paper](#), [White Paper](#) and Funding Guidelines for citizen science ([1st Guideline](#) and [2nd Guideline](#)). These tools were the starting point for developing other established projects such as the [Citizen Science Festival](#), the [Plastic Pirates Go Europe](#) and [Expedition ERDreich Campaigns](#), and other European collaborations.

She also mentioned that they were developing a second funding guideline to empower civil society, which was going to include a variety of actors and topics. Within this, the debate began by asking whether those policies led to a stronger involvement of citizens as a way of making them feel more actors of change or initiators. The German view is that “it is a challenge”, and she believes that the second funding will reach new players in the field and step up the role of the NGOs in the research teams. Anne Overbeck gave [Plastic Pirates](#) as an example of how to engage people through immediate results with global impact. Thanks to a question from the chat she noted some other instruments that would be useful to shift or mentality change: the citizen science platform in Germany also shows the funding opportunities and acts as an advisor and trainer on how to establish citizen science projects.

Carmen Castresana also highlighted the importance of having effective communication plans in the project design, so they guarantee that all the stakeholders can be involved in them. As in thematic

block 2, another question about the sustainability of projects arose, and Anne Overbeck provided a key aspect: citizen science and the SDGs connection elevates citizen science to a level of international discourse. If citizen science gets to that level, more institutions are going to address the topic in their own policies.

Stela Derivolcov (UNECE) continued stating that National Statistical Offices can help overcome some challenges such as funding, access to some tools or open-source solutions, and this should join forces not only to achieve the SDGs but also any other goals, and thus ensure sustainability and leverage of both citizen science and the SDGs.

Other instruments proposed by Igno Notermans (DRIFT) were: establishing spaces and platforms to bring citizens and policy makers together, organizing events and experiments like this one, and fostering competencies (citizen science methodology can help policy makers find out solutions to big societal problems).

José Rubio (EEA) added to this issue the work done by the EEA, which acts as a facilitator of citizen science rather than carrying out its own citizen science activities. In this way, the institution is trying to discuss and analyze how they can actually integrate citizen science in the context of their mandate. They know that environmental indicators and data collection can be obtained through citizen science projects (and subsequent papers, reports and publications), so they are working on giving more visibility to citizen science in the context of their mandate: preparing thematic reports to inform about citizen science and its success, and creating strategies at national level to promote the knowledge of citizen science.



The EEA is part of the informal network of [Europe's Environmental Protection Agencies](#) (EPA) and they are aligned with the mission to promote citizen science. The [D-NOSES project](#) team, who were participating in the chat, wanted to know more about how to join this intergroup

and José Rubio replied that members are the experts from the EPAs. However they have guests that they invite. In that way, they can all learn from each other, show success stories and see if there are possible collaborations.

CITIZEN SCIENCE FOR POLICY ACROSS EUROPE

ANNE OVERBECK

SCIENCE FOR THE PEOPLE,
BY THE PEOPLE

GERMANY



① GREEN PAPER AND
GERMAN CITIZEN
SCIENCE PLATFORM

WORKSHOPS
FOR RESEARCHERS



CITIZEN SCIENCE
FESTIVAL

HOW TO ESTABLISH
CITIZEN SCIENCE PROJECTS

CAMPAIGN →

PLASTIC PIRATES
GO EUROPE

② DIVERSE FUNDING OPTIONS

EMPOWERMENT OF
CIVIL SOCIETY



③ SPECIFIC
FUNDING



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Figure 2.4: Visual summary of the presentation of Anne Overbeck. Credits: Zsófia Lang





3. Conclusion of the event

Francisco Sanz stressed the importance of such events, especially when we approach citizen science from a different perspective – showing the vision that policy makers from different countries have of citizen science.

He also noted the use that citizen science can have as a powerful tool to take advantage of the knowledge shared in society through society's contributions. It is a way not to waste the talent that is distributed among European citizens.

Silke Voigt-Heucke insisted on the message that has been given throughout the event: citizen science is about sharing knowledge, dialogue, exchange, etc. Silke Voigt-Heucke showed EU-Citizen.Science's willingness to be a platform for such initiatives and dialogues.

RESOURCES BOX

The [event video](#) is located on the [ECSA Youtube channel](#).

Here are the links to each of the slides used to introduce each block:

- [Current state of citizen science across Europe](#) introduced by Sven Schade.
- [Promoting citizen science through the launch of national plans for funding citizen science projects](#) by Carmen Castresana.
- [Overcoming the barriers to citizen science](#) by José Paulo Esperança.
- [Science for the people, by the people – policy instruments to anchor citizen science in research and society](#) by Anne Overbeck.

Link to the [event webpage](#).

Table 3.1: Box with links to useful event resources.





4. Acknowledgments

Invited speakers (in alphabetical order)

Carmen Castresana

General Director of Research Planning, Spanish Ministry of Science and innovation

José Paulo Esperança

Vice-President of the Foundation for Science and Technology, Portuguese Ministry of Science and Technology and Higher Education

Anne Overbeck

Policy Officer for Citizen Science, German Federal Ministry of Education and Research

Sven Schade

Scientific Policy Officer, Joint Research Center, European Commission

Invited panelists (in alphabetical order)

Cecilia Cabello

Director of Operations at FECYT, the Spanish Foundation for Science and Technology

Luigi Ceccaroni

Senior innovation lead at Earthwatch

Stela Derivolcov

Associate Statistician at UNECE, Statistical Division, Environment and Multi-Domain Statistics Section

Linden Farrer

Policy Officer in the DG Research & Innovation “Open Science” unit

Claudia Iasillo

Project manager at APRE, Agency for Promotion of European Research

Svetlana Jesiljevska

Expert in smart energy at the Latvian Ministry of Education and Science

Igno Notermans

Action researcher and advisor at DRIFT (Dutch Research Institute for Transitions)

Adrian Pascu

Policy officer at the Ministry of Research, Innovation and Digitalization in Romania

Aurelija Povilaikė

National Contact Point (NCP) for the Lithuanian Research Council

Jose Miguel Rubio Iglesias

Geospatial data manager at the European Environment Agency

Daen Smits

Policy officer at the Ministry of Education, Culture and Science of the Netherlands

Marjan van Meerloo

Policy Officer in the DG Research & Innovation, Directorate Healthy Planet

Silke Voigt-Heucke

Project Coordination EU-Citizen.Science and Development of the Citizen Science Competence Centre at Museum für Naturkunde Berlin



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FECYT
Ibercivis
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(in alphabetical order)

- The European Commission

- The German Federal Ministry of
Education and Research

- The Portuguese Ministry of Science
and Technology and Higher Education

- The Spanish Ministry of Science and
Innovation





5. Appendices

5.1. List of documents, projects and links mentioned

Documents and resources

[“Best Practices in Citizen Science for Environmental Monitoring”](#)

[“Exploring Citizen Science Strategies and Initiatives in Europe”](#)

[“Roadmap for the uptake of the Citizen Observatories' knowledge base” from WeObserve](#)

[“Activity Report on Citizen Science – discoveries from a five year journey”](#)

[Strategic Plan from the Dutch Research Council for 2019–2022](#)

[Dutch National Research Agenda](#)

[German Citizen Science Strategy \(Green Paper – English version\)](#)

[White Paper Citizen Science Strategy 2030 for Germany](#)

[German 1st Funding Guideline 2018–2020 \(in German\)](#)

[German 2nd Funding Guideline 2021–2024 \(in German\)](#)

[The Science of Citizen Science \(Book\)](#)

[Mapping citizen science contributions to the UN sustainable development goals](#)

[“Imagine All the People: Citizen Science, Artificial Intelligence, and Computational Research”](#)

[Brief summary of the US citizen science policy efforts “Public Comment on Draft NOAA Citizen Science Strategy”](#)

[Special Issue "Citizen Science Projects for Environmental Challenges and Sustainable Development Goals"](#)

[Citizen Science Toolkit from the project CitieS-Health](#)

[StoryMap highlighting a project in Ghana for monitoring the SDG indicator 14.1.1b on marine litter](#)

[Data on farmland birds](#)

[How to approach the issue of sustainability: under the topic "Ensuring sustainability of Citizen Observatories"](#)

[White Paper on Citizen Science for Europe](#)

[MICINN-FECYT National Grants for Scientific and Innovation Culture](#)

[Reports from the Spanish Observatory \(in Spanish, executive summary in English\)](#)

[National strategy for Science, Technology and Innovation 2021–2027 \(Spanish\)](#)

[Guideline for legal questions “Leitfaden für rechtliche Fragestellungen in Citizen-Science-Projekten” \(in German\)](#)

[Policy brief prepared by the EU-Citizen.Science project](#)



Websites and platforms

[EU-Citizen.Science website](#)

[ECSA YouTube Channel](#)

[Open Government Partnership Explorer](#)

[German platform, Bürger schaffen Wissen](#)

[Website of the EPA Network](#)

[Spanish Observatory of Citizen Science](#)

[Ciência + Cidadã \(in Portuguese\)](#)

[Museum of Natural History and Science website](#)

Projects, initiatives and campaigns

[WeObserve](#)

[Plastic Pirates Go Europe](#)

[Pandemic Diary, project implemented by the online journal “Punctum” together with the Institute of Literature, Folklore and Art of the University of Latvia \(LULFMI\)](#)

[Asteroid Search Campaign](#)

[Citizen Drought Observatory](#)

[MakingSense project](#)

[D-NOSES project](#)

[SOLIDUS \(closed project\)](#)

[PIE News \(closed project\)](#)

[ISOOKO](#)

[EMPATIA \(closed project\)](#)

[SCOOP4C \(closed project\)](#)

[ILUCIDARE](#)

[Collecting sea level pictures](#)

[Campaign “Expedition ERDreich“](#)

[Towards a collection of the Anthropocene \(German/French project\)](#)

[Citizen science Award in Catalonia \(Ephemeral initiative - in Catalan\)](#)

[Citizen science project about invasive plants in Portugal \(in Portuguese\)](#)



[Biodiversity observations and monitoring, Biodiversity4All](#) (in Portuguese)

[Portuguese platform to collect data on marine litter](#) (in Portuguese)

[Monitoring jellyfish, GelAvista](#)

[Valorize and monitor the territory, aBEIRAR](#) (in Portuguese)

[Night butterflies](#) (in Portuguese)

[EXPLORATOR – Exploring the world of plants](#)

[Insect collection at the Museum of Natural History and Science in Lisbon](#)

[Scientific drawings](#) (Museum of Natural History and Science in Lisbon)

Events and other resources

[Citizen Science Festival](#) (Bürger schaffen Wissen) (in German)

Citizen Science SDG Conference “[Knowledge for Change: A Decade of Citizen Science \(2020–2030\) in Support of the SDGs](#)”

[ACTION Policy Masterclasses](#)

[European Research and Innovation Days](#)

[Workshop working group on Information Systems in Museums](#) (in Portuguese)

The Citizen Science Cost Action working group 3 "[Improve society-science-policy interface](#)"

[Horizon Europe](#)

[Programme dedicated to citizen science from the Dutch Health Research funding body](#)

5.2. Infographic

The following infographic titled “Citizen Science and Evidence-Based Policies across Europe” was produced by the EU-Citizen.Science project for this event. The infographic illustrates how citizen science contributes to the development of evidence-based policies through civic engagement and provides information about citizen science’s scientific, social, economic and political impact while highlighting some figures.

A high resolution version of this infography is available [here](#).



Citizen Science and Evidence-Based Policies across Europe

How citizen science contributes to the development of evidence-based policies through civic engagement

What is Citizen Science?

Citizen Science refers to the general public engagement in scientific research activities when citizens actively contribute to science, either with their intellectual effort or surrounding knowledge or with their tools and resources.

Source: White Paper on Citizen Science (2014).

WHITE PAPER
ON CITIZEN SCIENCE FOR EUROPE

There are **multiple forms of participation** associated with the different stages of the research cycle, where citizens - particularly, but not only, those affected by a social challenge - can play a very relevant role:

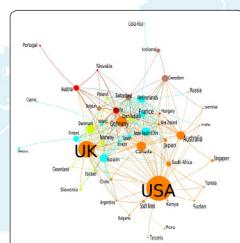
- PROBLEM DETECTION
- RESEARCH PLANIFICATION
- DATA COLLECTION AND ANALYSIS
- CO-CREATION OF METHODOLOGIES
- CARRYING OUT EXPERIMENTS
- INTERPRETATION OF RESULTS
- SOLUTION PROPOSAL
- TECHNOLOGY DEVELOPMENT
- APPLICATION DEVELOPMENT
- PUBLICATION OF RESULTS

SCIENTIFIC IMPACT

Citizen science is an important vehicle for democratizing science and promoting the goal of **universal and equitable access to scientific data and information.**

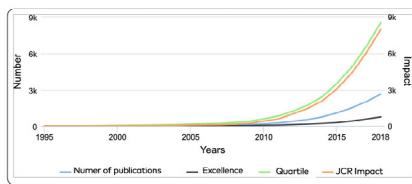
Research collaborations between countries

More and more scientific projects are using the citizen science methodology to obtain results and professionals from various countries are joining forces to carry out their research together with citizens.



Sources: Pelacho, M., Ruiz, G., Sanz, F., et al. (2021). Analysis of the evolution and collaboration networks of citizen science scientific publications. *Scientometrics* 126, pp. 225-257.

Evolution of the scientific publications that include citizen science methodologies



We can observe a spectacular growth rate, particularly after 2010, of papers that mention citizen science methodologies in their studies.

The same thing happens when we consider qualitative metrics, such as the quartile in JCR (Journal Citation Reports), and the JCR impact.

Source: Pelacho, M., Ruiz, G., Sanz, F., et al. (2021). Analysis of the evolution and collaboration networks of citizen science scientific publications. *Scientometrics* 126, pp. 225-257.

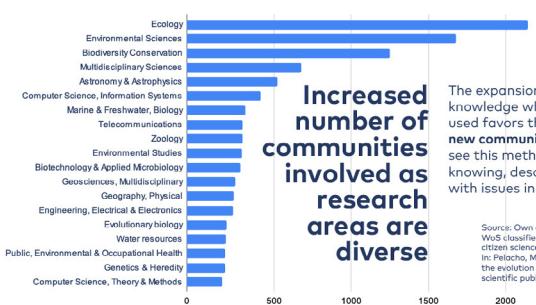
Scientists across the continent have proven that **citizen science can deliver good quality data.**

"Citizen science activities offer an **under-used, cost-efficient additional source of knowledge** and feedback in the monitoring of the environment and the implementation of environment policies." European Commission, 2020.

Source: European Commission (2020). Best practices in citizen science for environmental monitoring. European Commission, Brussels. Pg. 17.

SOCIAL IMPACT

Scientists and communities tend to consider **citizen science as action, strengthening its ability to create social change** and understanding participation as a process of individual or collective transformation.



Increased number of communities involved as research areas are diverse

The expansion of the areas of knowledge where citizen science is used favors the incorporation of new communities of citizens who see this methodology as a way of knowing, describing and dealing with issues in their environment.

Source: Own elaboration based on Table 3 Top-20 areas in WoS classified by the number of publications including citizen science. In: Pelacho, M., Ruiz, G., Sanz, F., et al. (2021). Analysis of the evolution and collaboration networks of citizen science scientific publications. *Scientometrics* 126, pp. 225-257.

388
388 Citizen
Science
biodiversity
projects around
the world
provide:



1,3 to 2,3 million
citizen science participants

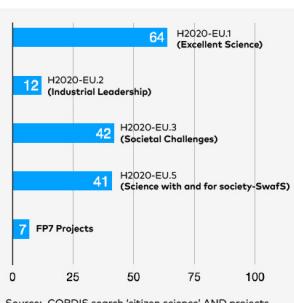
Up to \$2,5 billion
of economic value per year
(more than €2,000 million per year)

Source: E. J. Theobald, A.K. Ettinger, H.K. Burgess et al. (2015). Global citizen science and local solutions: Tapping the unrealized potential of citizen science for biodiversity research. *Biological Conservation*, 181, pp. 236-244.

ECONOMIC IMPACT

Citizen science **increases social and technological innovation**, budget savings and budget availability to tackle additional issues of public concern.

165 citizen science projects funded under different topics in the FP7 and Horizon 2020 research and innovation programmes



European funding for citizen science projects is not only limited to SWAFS, but its **proposals are accommodated in other lines of funding**, proving its quality as a research tool in every field.

In Spain, up to November 2020 **77 citizen science projects** have meant a **return of €51,740,092** to national, regional and local institutions.



Source: CORDIS search 'citizen science' AND projects AND Spain. Accessed 1 November 2020.

The French Administration saves between **€678,523 and €4,415,251 per year** thanks to the participation of volunteers in biodiversity monitoring programmes.



Source: Lebel, H., Fontaine, B., Henry, P., et al. (2010). Balancing state and volunteer investment in biodiversity monitoring for the implementation of CBD indicators: A French example. *Ecological Economics*, 69(7), pp.1580-1586.

POLITICAL IMPACT

"Citizen science projects can change the political agenda by spurring political involvement of citizens, which can eventually lead to policy change".

Jurre Honkoop.



Useful policy briefs can be found in the resource section of the EU-Citizen.Science platform categorised under the resource type "Policy brief",



"Interaction between citizens, scientists and policy makers is essential to enrich research and innovation, and reinforce trust of society in science."

I am proud of the hundreds of thousands involved citizens that already contributed to research and innovation and look forward to continue opening up research towards society and the world".

Mariya Gabriel

Commissioner for Innovation, Research, Culture, Education and Youth.

Source: European Commission (2020). Citizen science elevating Research & Innovation through Societal Engagement. Available at:



This infographic is an output of the **EU-Citizen.Science** project, which has received funding from the European Union's Horizon 2020 Framework Programme for Research and Innovation under Grant Agreement No. 824580.

Figure 5.1: Infographic titled "Citizen Science and Evidence-Based Policies across Europe" prepared for the event.

5.3. Questionnaire and results of the survey distributed among the participants after the conclusion of the event

5.3.1. Questionnaire

A questionnaire was distributed among event participants once the event had finished to help the EU-Citizen.Science project get a broader picture of the role of citizen science for policy making.

The table below contains the questions included in the questionnaire and the results are presented in the next subsection organised per question.

Citizen science for policy makers event

Please provide your feedback on the following 6 questions, which will help us to get a broader picture about the role of citizen science for policy making.

Please tell us which stakeholder group you represent: *
Government / Academia / Civil Society & NGOs / Industry

In your opinion, how important is citizen science in your national research agenda? *
Likert-scale from 1 - Not important at all to 7 - Very important.

Are you aware of any planned support measures for citizen science within your national research agenda? If yes, could you please name them? *

Yes / No

The support measure is:

Is citizen science already applied as a political decision making tool in your country? *
Likert-scale from 1 - Not at all to 7 - Very much.

Are you aware of a citizen science project that successfully supports planning and/or policy-making processes? If yes, could you please name it? *

No / Yes

The name of the project is:

Do you have any suggestions on how EU-Citizen.Science can help to establish citizen science as a widely accepted research methodology in your country?

How satisfied are you with the "Citizen Science for Policy" event?

Likert-scale from 1 - Not at all satisfied to 7 - Very much satisfied.

Thank you for your participation!

Table 5.1: Questionnaire distributed among event participants after the conclusion of the event.



5.3.2. Results of the questionnaire

The questionnaire was filled in by 23 participants of the event. According to their responses to question 1, they belonged to: **governmental organisations** (2), **industry** (2), **NGOs & civil society organisations** (5), **academia** (14).

Only two respondents belong to governmental organisations, which provides limited insight into the interests and experiences of the policy level.

Responses to question 2

In your opinion, how important is citizen science in your national research agenda?

Reply options: Not important at all (1) - Very important (7)

Government: One respondent thought that citizen science was very important in their national research agenda (they chose 7 on a 7-point-likert scale from 1=“not important at all” to 7=“very important”). The other respondent said that it was rather not important (3 on the 7-point likert scale).

Industry: Both respondents thought that citizen science is important in their national research agendas (they both selected 5 on a 7-point likert scale).

NGOs & Civil society organisations: Three respondents answered that citizen science was very important (7 on the 7-point likert scale), two respondents selected the middle range (3 and 4 on the 7-point likert scale).

Academia: This question was seen as rather diverse, but still more respondents thought that citizen science was important in their national research agendas (see next figure):

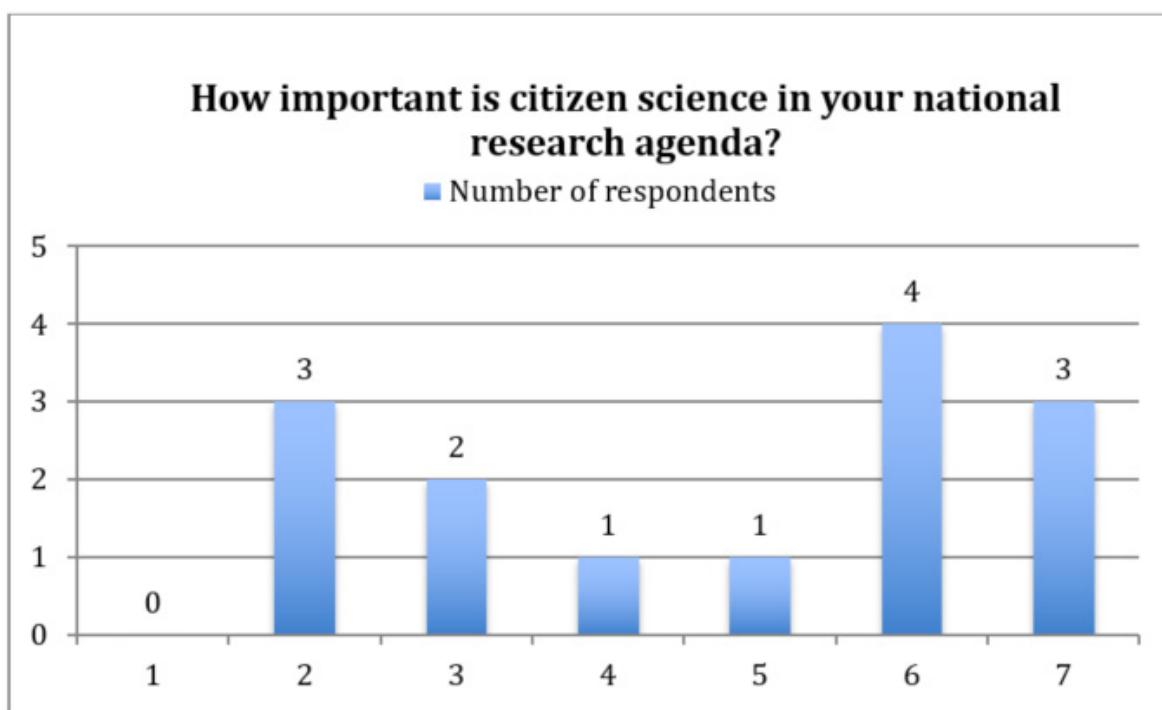


Figure 5.2: Answers from academia to question 2 of the survey

Responses to question 3

Are you aware of any planned support measures for citizen science within your national research agenda? If yes, could you please name them

Reply options: dual scale: Yes or no, and open entry

Government: One respondent was not aware of any planned support measures; the other one mentioned “a forum of citizen science”.

Industry: When asked about the support measures for citizen science one respondent referred to the “FECYT funding call” and the other one to “CS in the Parliament (In Catalonia and Spain)”.

NGOs & Civil society organisations: Three respondents were not aware of any concrete support measures in their countries, one came from Germany and referred to: National Funding, some structural measures in the 3. National Action Plan Open Government Partnership Germany. And the respondent from Spain answered: Funding lines for citizen science projects through FECYT and the ministry itself.

Academia: When asked about concrete support measures nine respondents were not aware of any. There was again the reference to the work of FECYT (2 respondents), one respondent mentioned that “Generalitat de Catalunya is already including citizen science practices in most recent societal challenges (covid) grants” and two respondents referred more generally to funding and calls such as “national-based programmes and research project calls” and “Engagement with end users is a criteria in many calls such as <https://forte.se/en/proposal/annual-open-call-for-proposals-2021-step-2/>”

Responses to question 4

Is citizen science already applied as a political decision making tool in your country?

Reply options: Not at all (1) - Very much (7)

Government: One respondent said that citizen science is not at all applied as a political decision making tool in their country (1 on the 7-point likert scale), the other one said that it is rather not applied (3 on a 7-point likert scale).

Industry: Here both respondents answered that citizen science was rather not applied as a political decision making tool yet, they chose 2 and 3 on the 7-point likert scale.

NGOs & Civil society organisations: The respondents selected 1, 2, 3 and 4 on the 7-point likert scale and thus thought that citizen science was rather not or not at all applied as a political decision making tool in their countries.

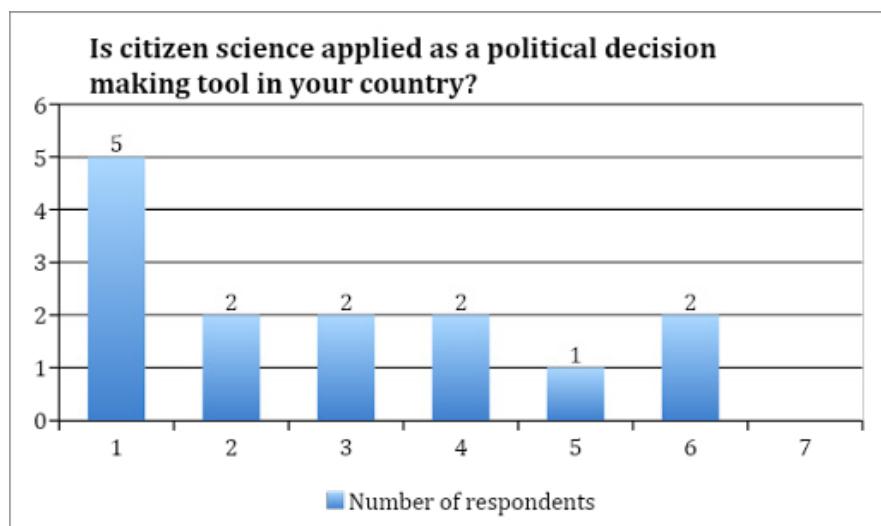


Figure 5.3: Answers from academia to question 4 of the survey

Academia: Again the set of answers was rather diverse but this time the majority thought that it was not really applied yet.



Responses to question 5

Are you aware of a citizen science project that successfully supports planning and/or policy-making processes? If yes, could you please name it?

Reply options: dual scale: Yes or no, and open entry

Government: One respondent referred to the project <https://hess.copernicus.org/preprints/hess-2019-627/> (this is a citizen observatory for flood risk reduction in the Brenta-Bacchiglione); the other one was not aware of any project.

Industry: Both respondents mentioned the D-NOSES project, and one the Transform project. Awareness for a successful project: D-NOSES (2 mentions; <https://dnoses.eu/>) and Transform (<https://www.transform-project.eu>).

NGOs & Civil society organisations: Only one respondent mentioned the D-NOSES project, the others were not aware of any concrete project.

Academia: When asked about concrete projects that support political decision making, 10 respondents were not aware of any. Others mentioned the “Ibercivis projects”, “GBIF related projects, Mosquito Alert, RIU...” and “CommunityDrive (<https://www.communitydrive.aau.dk/>)”

Responses to question 6

Do you have a suggestion how EU-Citizen.Science can help to establish citizen science as a widely accepted research methodology in your country?

Reply option: open entry.

Government: When asked how the EU-Citizen.Science could support establishing citizen science as a decision making tool, one respondent suggested the following points: Promotion, engagement with EU authorities, best practices and guidelines, ambassadors, community of practice.

Industry: The following suggestions were made with regard to the supporting role of EU-Citizen.Science:

- Facilitate communication and match-making between the community, learn from successful initiatives, organize more common webinars, organize working groups for example between countries to create national networks in countries that do not exist, etc.
- Training on how to effectively approach policymakers (at different levels and different ideological views). Politicians are the most hard-to-get actors in our current times.

NGOs & Civil society organisations: The following suggestions were made with regard to the role of EU-Citizen.Science:

- Highlighting/attributing political impact of projects and impact on democracy as well as impact on European way of development. Identify citizen science projects/processes at European border regions as labs for cross-border citizen science development (e.g. in data standards, open government data) and for European cohesion.
 - <https://www.fondscitoyen.eu/actualites/interview-open-government-oliver-rack>, involve Media Companies and Data journalists in citizen science projects.
- With events like that, ensuring participation of all the actors involved in citizen science (participants, researchers, institutions and industry).

Academia: The suggestions for EU-Citizen.Science were:



- Establishment of national networks (even regional) with links to the EU networks.
- Yes, through research policies that incentivise citizen science through merits, and through language policies that support multilingual science communication online to reach both global and local citizens.
- Send to my country the different successful stories worldwide, Invite the country to organise a discussion group (inclusive one) with the research community.
- The improvement of science education in school.
- Gather and present great case studies of how it's done in other countries (to show how far behind Denmark is on the national political level in relation to citizen science! :))
- While methodology, theory and ethics all have their own nomenclatures within academia, there is not (yet) such a nomenclature for collaborology. <https://doi.org/10.1080/02691728.2021.1913769>

Satisfaction with the event

How satisfied are you with the "Citizen Science for Policy" event?

Reply options: Not at all satisfied (1) - Very much satisfied (7)

Government: Satisfaction levels were rather in the middle range with 3 and 4 on the 7-point likert scale, where 1="not at all satisfied" to 7="very much satisfied".

Industry: The respondents did not answer this question.

NGOs & Civil society organisations: This question was only answered by one respondent, selecting 5 on the 7-point likert scale.

Academia: 12 respondents from Academia answered this question and the answers were positive, as eight respondents chose 7 on a 7-point likert scale, three respondents 5 and only one 3 on the 7-point likert scale.



5.4. Participants

Invited speakers (in alphabetical order)



Carmen Castresana

Dr. Carmen Castresana is Director General for Research Planning at the Spanish Ministry of Science and Innovation since February 2020. She is Full Professor at the Spanish National Research Council (CSIC) and has developed most of her research career in the field of Plant Molecular Biology at the National Center for Biotechnology, where she acted as Director from 2013 to 2015.



José Paulo Esperança

He is the Vice President of the Portuguese Foundation for Science and Technology (FCT). He is full professor of Finance and former Dean of the ISCTE Business School as well as former Pro-Rector for International Relations and Entrepreneurship at ISCTE-IUL. He co-founded AUDAX-ISCTE, an associated centre focused on entrepreneurship and family business and BGI, a new ventures accelerator. He is an associated member of several associations aimed at promoting biodiversity in his home region of Beira Interior.



Anne Overbeck

Anne Overbeck is Policy Officer at the German Federal Ministry of Education and Research focusing on Citizen Science and other participatory approaches in science and research. Prior to her position at the ministry, Anne Overbeck has been working as a museum curator concentrating on participation in the knowledge creation process in (digital) exhibitions.



Sven Schade

He works at the European Commission's in-house scientific and knowledge management service, the Joint Research Centre (JRC), where he leads the research on digital transformation and the modernisation of the public sector for recovery. His research interests include digital governance, multi-disciplinary interoperability, and public participation in science for policy.

Invited panelists (in alphabetical order)



Cecilia
Cabello

Cecilia Cabello is the Director of Operations at FECYT. She has a degree in Food Science and Technology from Michigan State University and a Master's degree in Science, Technology and Society from Universidad Autonoma de Madrid (UAM). Since 2002 she has developed her professional career at FECYT managing and supervising several departments in the areas of science outreach and communication, R&D metrics and indicators, scientific information management, open science, researchers' career development and mobility, science diplomacy, international projects and support to the internationalization of science.



Luigi
Ceccaroni

Luigi manages innovation and strategic research at Earthwatch, an independent research organisation in Oxford, UK. He is the principal investigator and leader of the European Commission's project "MICS" (2019-2021) to evaluate citizen-science impacts. He also leads the awareness raising and engagement efforts in EU-Citizen.Science. Luigi is the author of more than 100 publications on citizen science, the environment, artificial intelligence and personalised medicine, topics he is passionate about. He was the vice-chair of the European Citizen Science Association in 2019-2020.



Stela
Derivolcov

Stela Derivolcov works as Associate Statistician at UNECE, Statistical Division, Environment and Multi-Domain Statistics Section, responsible for SDGs area. Secretary of CES Steering Group on Statistics for SDGs its 3 task teams on capacity development, communication and data transmission. Prior to joining UNECE, worked at the National Bureau of Statistics of Moldova.



Linden
Farrer

Linden Farrer is Policy Officer in the DG Research & Innovation "Open Science" unit, where he is involved in mainstreaming Responsible Research Innovation and developing citizen science policy. Before joining the Commission, he worked on research projects for civil society in Brussels, and for local government in England on employment and skills. His background is in the social sciences and humanities.





Claudia Iasillo

Claudia Iasillo works as project manager in APRE (Agency for Promotion of European Research) since 2018. She holds a PhD in Molecular Biology and afterwards she started working on science communication and public engagement in science activities. In APRE she focuses on projects on science and society relationship, including science communication, citizen science, stakeholder and public engagement, community building and capacity building. Currently she is in the coordinating team of TIME4CS, an H2020 project that aims at facilitating a way in which the scientific ecosystem could better take societal views into consideration by supporting Research Performing Organisations in defining and implementing institutional changes that can lead to a better and more effective engagement of citizens in research and innovation.



Svetlana Jesilevska

Dr. oec. Svetlana Jesilevska is an expert in smart energy at the Latvian Ministry of Education and Science, the author of several scientific publications, books and publications in the mass-media devoted to innovation and R&D. Work experience as data analyst in the Central Statistical Bureau and the State Chancellery of Latvia.



Igno Notermans

Igno Notermans works for DRIFT (Dutch Research Institute For Transitions) as an action researcher and advisor. He has transition expertise on themes such as energy, participation, and behaviour. For the ACTION project he organizes and facilitates policy masterclasses throughout Europe, each aimed at mainstreaming citizen science in policy.



Adrian Pascu

Mr. Adrian Pascu works at the Ministry of Research, Innovation and Digitalization in Romania, as a policy officer preparing the participation to the EU Council meetings in research and to the ERAC. He has a relevant experience in the development of ERA in Romania and in the participation to the EU R&I framework programmes, as well as in related supporting activities.



Aurelija Povilaikė

Aurelija Povilaikė works as a National Contact Point (NCP) for Lithuanian Research Council, and is responsible for Widening participation and ERA, ERC programmes in Horizon Europe. Previously, Aurelija was developing research policy and management strategies at the UK universities. In her capacity as NCP, she is informing the research community about the key policies related to framework programmes, such as, of citizen science.





**Jose Miguel
Rubio Iglesias**

Jose Miguel Rubio Iglesias works as a geospatial data manager at the European Environment Agency since 2017. Since 2018 he is the co-chair of the EPA Network Interest Group on Citizen Science, a group of representatives of European Environmental Protection Agencies working with or interested in citizen science activities for environmental monitoring. He has been involved in the drafting of the European Commission's Best Practices in Citizen Science for Environmental monitoring as well as in several articles related to citizen science and environmental policies.



Daen is a policy officer and works for the ministry of Education, Culture and Science of the Netherlands. He is involved in the National Programme on Open Science (NPOS). In NPOS, the science community of the Netherlands aims to accelerate the transition towards Open Access, FAIR Data and Citizen Science.

**Daen
Smits**



In 2017, Marjan started as a Second National Expert in environmental observation within DG Research and Innovation – European Commission, after fulfilling positions in several ministries in the Netherlands. She is involved in files related to the Group on Earth Observations, EuroGEO and Horizon 2020/Horizon Europe, with a particular interest in citizen observations.

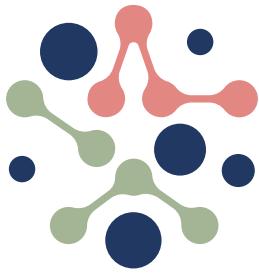
**Marjan
Van Meerloo**



**Silke Voigt-
Heucke**

Silke joined the Museum für Naturkunde Berlin in 2018, where she is currently in charge of developing a Citizen Science Competence Center. She is the project coordinator for the EU Citizen.Science project and was responsible for organizing the Citizen Science SDG Conference held in October 2020 as part of the German EU Presidency.





eu-citizen.science