ECSA Annual Report 2020

ECSA headquarters

Address

c/o Museum für Naturkunde Berlin
Leibniz-Institut für Evolutions- und Biodiversitätsforschung
Bereichsleitung Wissenschaftskommunikation und Wissensforschung
Invalidenstraße 43
D-10115 Berlin

until 27.11.2020	from 28.11.2020
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Headquarters team

Barbara Carneiro
Helen Feord
Margaret Gold
Marzia Mazzonetto
Giulia Melilli
Dorte Riemenschneider
Simone Rüfenacht
Gerhard Schleenstein
Andrea Troncoso
Tim Woods
Holly Woodward

About this report

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Executive summary

Citizen science is an approach that fosters scientific literacy and the democratization of scientific expertise, in order to increase the social relevance and sustainable impact of research, and to improve the evidence base for social, environmental, biodiversity and climate protection policies, both in Europe and worldwide.

The European Citizen Science Association (ECSA) is a non-profit organization that supports the growth of the citizen science movement in Europe, and enhances the participation of the public in scientific processes. Since its establishment in 2013, its member base and support has grown, with individual and organizational members now spread across Europe and the world.

ECSA's headquarters, which is hosted by the Museum für Naturkunde (MfN) in Berlin, Germany, has a talented team dedicated to supporting and developing citizen science in practice, policy and an increasing range of scientific fields. They work passionately to expand and strengthen the citizen science network in Europe and beyond. Further, they engage with and support ECSA members and non-members through a wide range of activities, which they promote through ECSA's working groups and participation in several citizen science projects.The team is supported in this by the ECSA board, which provides strategic guidance and support for the association.

The year 2020 was a challenging one globally due to the Covid-19 pandemic, and ECSA was naturally affected. Despite this, 2020 was still an exciting and successful year, the highlight of which was our third international conference, which was held in September. This annual report provides information about this and many other achievements held during the year.

Contents

1. Organizational development

1.1 President, Chairs, Board of Directors

At the start of 2020, the ECSA board comprised Luigi Ceccaroni and Muki Haklay, who were the co-vice chairs, as well as Soledad Luna, Andrea Sforzi, Svetlana Klessova, who acted as our treasurer, Uta Wehn and Susanne Hecker. Johannes Vogel was ECSA's chairperson.

During the 2020 AGM, held online in November, a new ECSA board was elected. Susanne Hecker was appointed as the new chair, with Enrico M. Balli as vice-chair. Other board members elected were Rosa Arias, Martin Brocklehurst, Barbara Kieslinger, Gitte Kragh, Jaume Piera and Susanne Tönsmann, as well as Svetlana Klessova, who will remain as ECSA's treasurer. ECSA's members also appointed Johannes Vogel as ECSA's first president.

1.2 Project funding

ECSA is fortunate to receive support from the European Commission (EC) to fulfil its mission. In 2020, ECSA was involved in the following projects.

- **Cos4Cloud** integrates citizen science into the European Open Science Cloud (EOSC) ecosystem. It is co-designing, prototyping and implementing 11 new tools and services that address the technological challenges shared by citizen observatories, based on the experiences of existing biodiversity platforms.
- **D-NOSES** empowers citizens through responsible research and innovation (RRI), citizen science and co-creation tools to design odour-control measures at the local, national and global levels, working with civil society organizations (CSOs), non-governmental organizations (NGOs), local authorities, odour-emitting industries and universities.
- **EU-Citizen.Science** is building and establishing a central citizen science platform for Europe. This will be a place to share useful resources on citizen science, including tools and guidelines, best practices and training modules. This will make the knowledge about citizen science accessible to all and enable people to start their own citizen science activities.
- **LandSense** aggregates innovative Earth observation technologies, mobile devices, community-based environmental monitoring, data collection, interpretation and information delivery systems to empower communities to monitor and report on their environment in the context of urban landscape dynamics, agricultural land use, and forest and habitat monitoring.
- **PANELFIT** facilitates the implementation of the General Data Protection Regulation (GDPR) by developing a set of outcomes that will serve as operational standards and practical guidelines to reduce the ethical and legal issues of ICT technologies, while fostering innovation and market growth.
- **WeObserve** tackles three key challenges that citizens observatories face: awareness, acceptability and sustainability. The project improves coordination between existing citizen observatories and related regional, European and international activities. The WeObserve mission is to create a sustainable ecosystem of citizen observatories that can systematically address these identified challenges and help move citizen science into the mainstream.

1.3 Headquarters

The following people worked at ECSA headquarters in 2020:

- Barbara Carneiro, student assistant
- Helen Feord, student intern
- Margaret Gold, project coordinator
- Marzia Mazzonetto, project coordinator
- Giulia Melilli, student
- Dorte Riemenschneider, managing director
- Simone Rüfenacht, project coordinator
- Gerhard Schleenstein, project coordinator
- Andrea Troncoso, project coordinator
- Tim Woods, project coordinator
- Holly Woodward, student intern

1.4 Characteristics of citizen science

A major piece of work in 2020 was the 'Characteristics of citizen science'. Led by ECSA vice-chair Professor Muki Haklay, and involving many ECSA members, this document attempts to represent a wide range of opinions in an inclusive way, to allow for different types of citizen science projects and programmes, where context-specific criteria can be set.

The researchers identified a series of characteristics based on views expressed by researchers, practitioners, public officials and the wider public. The aim was to identify the characteristics that should be considered when setting criteria for citizen science (e.g. a funding scheme), but with a call to readers to determine which subset of the identified characteristics are relevant to their own context and aims. The characteristics build on (and refer to) the ECSA 10 principles of citizen science.

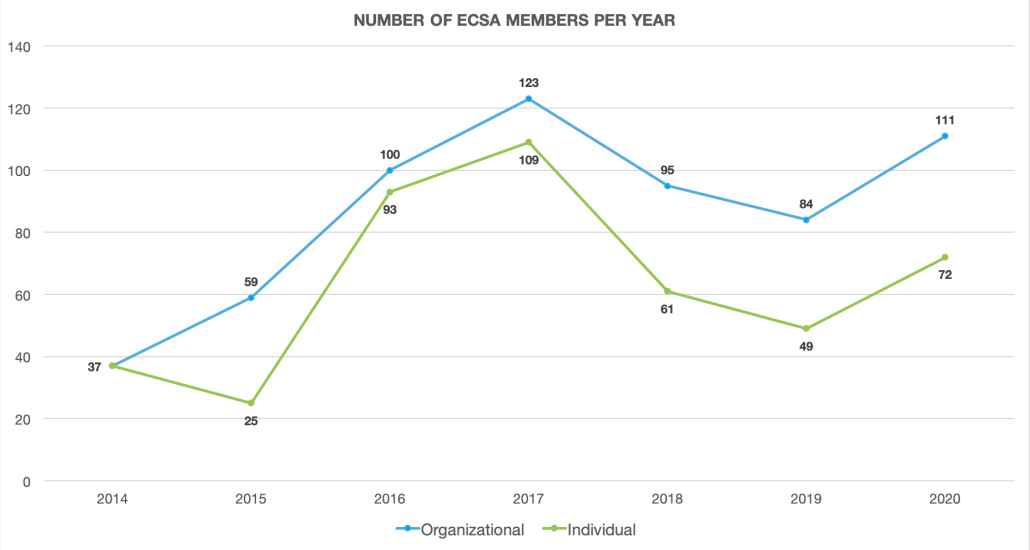
This document is already proving a key reference for the field of citizen science, with over 3,400 views and over 2,300 downloads from Zenodo.[1]

[1] As of November 2021.

2. Individual and organizational members

As of December 2020, ECSA had 183 individual and organisational members (Figure 1). These come from 21 EU countries, as well as Australia, Ecuador, Nigeria, Norway, Serbia, Switzerland, the UK and the USA. They represent a number of different sectors: NGOs, CSOs, universities and research institutes, museums, SMEs, policymakers, decision-makers - and of course practitioners and citizen scientists.

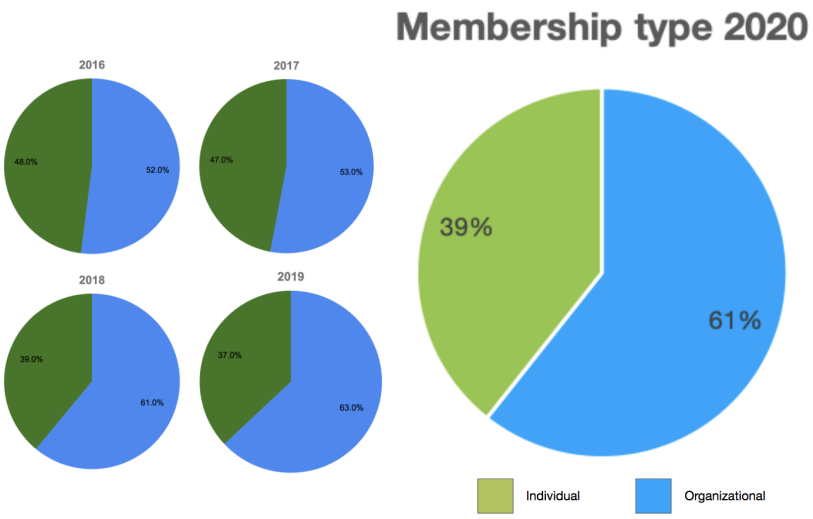
Figure 1. ECSA membership, 2014-2020



ECSA saw a 38% increase in members in 2020 (from 133 in 2019). Much of this increase can be attributed to the third international conference, for which ECSA members received a discount on fees; many lapsed members rejoined ahead of this event. One of the challenges going forward will be to find new ways to retain and increase our membership, while still being an inclusive association in which everyone is able to take part in activities.

Organizational members continue to form the majority of our members (61%; see Figure 2).

Figure 2. Membership by type, 2016-2020



3. Communication

In 2020 we focused on two main communications outlets: social media (Twitter and Facebook) and our bi-monthly newsletter. We also launched our new website and started a series of webinars.

3.1 ECSA website

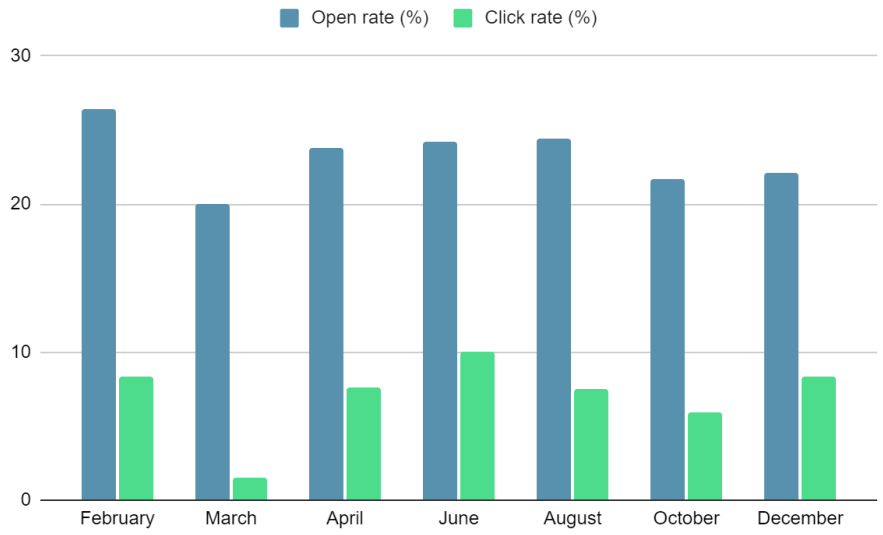
The new ECSA website was completed in August 2020 and is a significant upgrade in terms of appearance. There were some initial delays with uploading and managing content, due to shifting from Drupal to WordPress, and because of the Covid-19 pandemic, which affected the web design company. These delays prevented us from holding an official launch event for the new website, which was planned to be held before our conference. However, overall feedback has been generally positive.

3.2 Newsletter

ECSA sent out seven newsletters during 2020: one every second month, and a bonus edition to announce our conference shifting to an online format. Subscribers rose by 6% (from 1,825 in January to 1,932 in December: see Figure 4) . However, the number of people opening the newsletter fell to 23% (from 27% in 2019); the average click rate[2] also fell to 7% (from 10% in 2019).

In 2022, we will survey readers about our newsletter: which items they are most interested in, and how often they want to receive it. This will give us useful insights ahead of the likely merging of communications outlets with those of the EU-Citizen.Science platform, which ECSA will inherit in 2022. This will also be necessary from a budgeting perspective, as our newsletter service provider, MailChimp, requires payment once subscribers exceed 2,000.

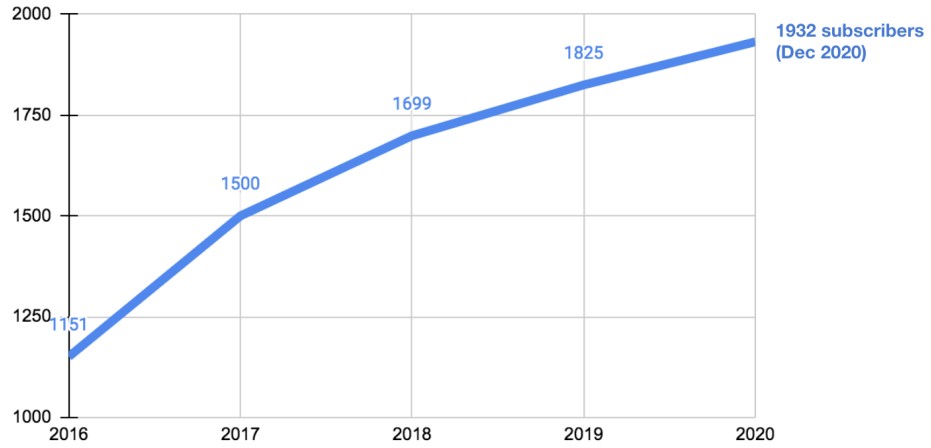
Figure 3. ECSA newsletter analytics, January 2020-December 2020



Source: *MailChimp*

[2] How many successfully delivered campaigns registered at least one click.

Figure 4. ECSA newsletter subscribers, 2016-2020

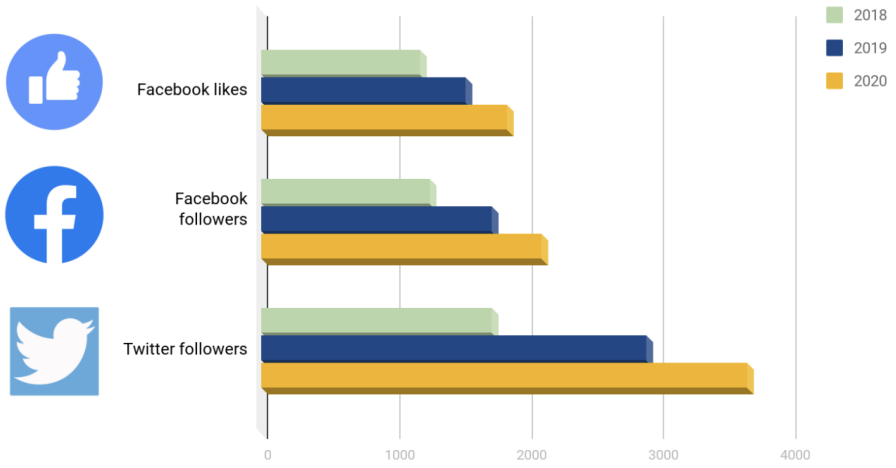


3.3 Social media

We saw continued growth in audience and engagement on our two main social media accounts in 2020. Twitter, where ECSA is most active, saw a 26% increase in followers (2,923 to 3,688, Jan-Dec) and regular engagement with our tweets, in terms of retweets, replies and likes. This was especially true during our online conference in September, during which our monthly Tweet impressions[3] reached 106,000.

Followers of our Facebook page increased by 21% (1,750 to 2,123), and saw similar growth in the number of 'likes', at 19% (1,554 to 1,859).

Figure 5. Growth across social media accounts, 2018-2020



Source: *Twitter / Facebook*

3.4 ECSA and EU-Citizen.Science webinars

As with millions of others across Europe, many people working in citizen science found themselves shifting their activities online in 2020, due to the Covid-19 pandemic. To ensure

[3] A tally of all the times a tweet has been seen.

that our members continued to have opportunities to discuss, debate and learn about citizen science, ECSA began a series of webinars in 2020, held in partnership with the EU-Citizen.Science platform. Usually held around lunchtime, and lasting between 60 and 90 minutes, these covered the following subjects during 2020:

- The Characteristics of Citizen Science
- Learning and Education in Citizen Science
- Citizen Science and the SDGs conference declaration (four webinars in total)

These can be found on a dedicated playlist on the ECSA YouTube channel.

4. Events

The following are a selection of the events in which ECSA participated in 2020.

4.1 Open Science conference

➢ *11-12 March*

➢ *Berlin, Germany*

Representatives from ECSA and the Museum für Naturkunde Berlin presented the EU-Citizen.Science platform at the Open Science Conference, focusing on how the platform can benefit the open science community as well as the citizen science community. Following this presentation, we were invited to submit an article on this subject to a special issue of the journal *Data Intelligence*, which will focus on the outcomes of this conference.[4]

4.2 Third international ECSA conference

➢ *6-11 September*

➢ *Online; hosted by Sissa MediaLab and the University of Trieste, Italy*

Encounters in Citizen Science, the third international ECSA conference, aimed to bring together the citizen science community - citizen scientists and practitioners, researchers and policymakers - to share the latest knowledge and ideas from the field.

The conference was due to be held in Trieste, Italy, in May 2020, but as Covid-19 swept across the world, it soon became clear that we would need to move the event online. While this presented some challenges in terms of logistics and the loss of face-to-face networking, it also created opportunities. Notably, more people were able to get involved, including those from outside of Europe and those who may not have been able to attend an onsite conference (e.g. due to travel costs).

Several of the projects in which ECSA is a participant were active at the conference. For example, in collaboration with other D-NOSES partners, Simone Rüfenacht organized and presented a 90-minute workshop on engagement in citizen science entitled 'You've got the buzzwords, have you got the people? A highly inclusive engagement model to tackle socio-environmental issues using citizen science'. The D-NOSES methodology was presented and lessons learned from the different pilot studies were discussed.

Spread across five days, the online conference saw 507 participants involved in 30 sessions, 64 posters, three keynote speeches, three side events and numerous Zoom chats. The full conference report is available on Zenodo, while videos of most sessions can be found on ECSA's YouTube channel.

[4] This article was published during 2021.

4.3 'Knowledge for Change: A decade of Citizen Science (2020-2030) in support of the SDGs' conference

➢ *14-15 October*

➢ *Hybrid; online and in Berlin, Germany*

ECSA, in partnership with Bürger schaffen Wissen, organized the Mitforschen! Citizen Science festival, a side event to showcase successful citizen science projects from across Europe. ECSA also organized and moderated several 'Meet the Expert' interviews that took place during conference breaks and after some of the plenary talks. Interviewed speakers included Klement Tockner, Jillian Campbell, Muki Haklay, Josep Perelló, Anne Bowser, Linden Farrer and Michael Arentoft. These provided an informal setting where participants could contribute to the discussion and get involved. Furthermore, the D-NOSES project was also present at the event, making four presentations and hosting a booth in the virtual marketplace, WeObserve organized four sessions at the conference, and EU-Citizen.Science organized a session and hosted a booth at the festival.

4.4 European Week of Regions and Cities 2020

➢ *6 October*

➢ *Online*

ECSA was part of a panel discussion on citizen science and invasive alien species (IAS), organized by the European Alien Species Information Network (EASIN) as part of the European Week of Regions and Cities in 2020. Drawing on projects that are part of Cos4Cloud, Tim Woods gave examples of how citizen science is used to monitor IAS, and discussed how citizen science could play a greater role in the future.

4.5 ECSA annual general meeting

As the ECSA 2020 conference moved online, we decided to hold our AGM on a separate date to avoid having to squeeze it into the week of the conference; it was eventually held on Zoom at the end of November. During the AGM, ECSA members approved changes to our statutes, voted in a new chair and vice-chair, as well as a new board of directors and advisory board. We also elected Johannes Vogel as the first ECSA president.[5] The full list of appointees is:

- ECSA president: Professor Johannes Vogel
- Chair: Dr. Susanne Hecker
- Vice-chair: Enrico M. Balli
- Treasurer: Svetlana Marie-Claire Klessova
- Board of directors: Barbara Kieslinger, Gitte Kragh, Jaume Piera, Martin Brocklehurst, Rosa Arias, Susanne Tönsmann
- Advisory board: Dan Stanton, Darlene Cavalier, Henrietta L. Moore, Julie Dirwimmer, Sven Schade, José Miguel Rubio Iglesias, Renee Sieber

ECSA's members also approved three new working groups at the AGM. These will focus on:

- Health and citizen science
- Citizen science and universities

[5] The creation of this new position was approved by our members in a separate, earlier vote at the AGM.

- Storytelling and other arts.

5. Projects in 2020

5.1 Cos4Cloud

Cos4Cloud - co-designed citizen observatories for the European Open Science Cloud (EOSC) - addresses the open science challenges shared by citizen observatories. Based on the experiences of various biodiversity platforms (including Artportalen, Natusfera, iSpot) and environmental monitoring platforms (including FreshWater Watch, KdUINO, OdourCollect, iSpex and CanAir.io), it is designing, prototyping and implementing a series of tools and services for improving data and information quality. Citizen science is at the heart of this project. Integrating citizen science into the EOSC will promote this to the scientific community, and society at large.

ECSA activities and milestones

During 2020, ECSA's tasks were predominantly in work packages (WPs) 5-8, which focus on networking, training, capacity building, communication, outreach and stakeholder engagement. The CoNNect group was set up to ensure smooth collaboration across these work packages and we have been active in this. We have also supported Cos4Cloud's communications efforts, for example sharing updates in our newsletter and on social media.

Cos4Cloud was very active at the ECSA conference in September. Consortium members provided a blog post highlighting effective ways to run online sessions, and the project was featured during a session on 'Data issues'. ECSA also highlighted a number of Cos4Cloud's featured projects at the European Week of Regions and Cities (see Section 4.4).

Next steps

In 2021, we will continue to inform the citizen science community about the Cos4Cloud project. A webinar about its services will be held early in the year, and we are also writing a blog post about how Cos4Cloud can be inclusive and reach all groups in society. This will be linked to a series of ECSA workshops about diversity and inclusiveness, in which Cos4Cloud is a partner. Discussions about how Cos4Cloud can showcase its services on the EU-Citizen.Science platform will also progress during the year.

Contact

Tim Woods, project officer (until August 2021)

@Cos4Cloud

5.2 D-NOSES

Odour pollution is the second-leading cause for environmental complaints across Europe. However, many European countries and regions do not have sufficient - or indeed any - regulations and guidelines that deal with odour pollution. In addition, citizens who are personally affected in their everyday lives, are rarely included in attempts to solve these issues.

The D-NOSES project, funded by the EC's H2020 programme from April 2018 to March 2021, aims to design and test a new bottom-up methodology that incorporates citizen science into odour pollution management. The methodology will be tested in at least 10 pilot sites, where solutions to the local odour pollution will be co-created with all involved stakeholders (i.e. citizens, industries, local authorities, policymakers, researchers and NGOs). To support the spreading of information and knowledge around the issue of odour pollution, D-NOSES is also building the International Odour Observatory, which has been co-created with citizens, policymakers and researchers across Europe.

To introduce the issue of odour pollution to the European policy agenda, D-NOSES will produce a green paper and strategic roadmap on odour pollution. A DIY guideline outlining the methodology and lessons learnt from the project, will enable this bottom-up methodology to be used in other odour-affected communities throughout Europe, and help ensure that this citizen science approach endures beyond the project.

ECSA activities and milestones

The ECSA team is responsible for analyzing the odour situation in Germany (WP4) and leading the German pilot study (WP5). Schermbeck was identified as a good pilot study for Germany, with the water resource managers (Emschergenossenschaft/Lippeverband) of the area on board from the start. The ECSA team engaged the municipality first, and then the citizens of Schermbeck. However, most of the communication and engagement activities had to be done online due to the Covid-19 pandemic. Only three citizens ended up actively engaging in the project and collecting odour data by the end of 2020. The "problem" in Schermbeck turned out to be much smaller and more localized than initially assumed. An engagement break was planned for the winter months of 2020/21.

Gerhard Schleenstein joined the ECSA team to support the D-NOSES pilot and travelled to Schermbeck in November 2020 to assess the situation on site and to strengthen the contact with the engaged citizens and the municipality. For early 2021, a survey is planned to better assess the odour issues in Schermbeck.

ECSA also leads the policy-society scientific dialogues (WP4) and the DIY guidelines for project replicability (WP6), and supports the advocating activities (WP6). ECSA has written the Deliverable 4.2 'Documentation of Policy-Society Scientific Dialogues' describing all policy dialogue efforts in the different pilot countries and setting up a strategy for further dialogues. ECSA also supported the writing of the D-NOSES Advocacy Action Plan, led by MIO-ECSDE, a D-NOSES partner in Greece.

Together with MIO-ECSDE, ECSA wrote the 'Advice for policy makers' for the International Odour Observatory (WP3). Furthermore, the ECSA team is responsible for updating the German translations on the platform, and provides communication and dissemination channels for the project outcomes within Germany and the ECSA network (WP7). In 2020, ECSA also attended the virtual D-NOSES consortium meeting in June. Further, ECSA presented the D-NOSES project at the ECSA 2020 conference (Section 4.2) and the Citizen Science and the SDGs conference (Section 4.3).

Next steps

ECSA will continue engaging citizens in Schermbeck for the German pilot study and data will be gathered until April 2021. Between April and June 2021, the ECSA team will organize policy-society dialogues in Germany to discuss the lessons from D-NOSES in general and the German pilot in particular.

The final report on policy-society scientific dialogues (D4.4) is due at the end of the project (September 2021), as well as the 'DIY guidelines for project replicability in odour-conflicted communities' (D6.3). This final project deliverable will be publicly available and will carry the D-NOSES methodology forward and into many communities with odour conflicts.

Delays caused by the Covid-19 pandemic meant that the EU Commission approved a six-month extension of the project until the end of September 2021. Due to maternity leave, D-NOSES project officer Simone Rüfenacht will leave the project in the capable hands of Gerhard Schleenstein (the Chilean D-NOSES project partner) and Tim Woods for the remainder of the project.

Contacts

Simone Rüfenacht, D-NOSES project officer (until January 2021)

Gerhard Schleenstein, D-NOSES project officer (from November 2020)

Tim Woods, D-NOSES project officer (until August 2021)

Giulia Melilli, D-NOSES student assistant (until March 2020)

@dNOSES_EU, #dNosesEU

@dNOSES.EU

5.3 EU-Citizen.Science

The EU-Citizen.Science project has been funded by the European Commission Horizon 2020 programme, in the Science with and for Society programme of work (also known as SwafS). The mission of the project is rather ambitious – to become the reference point for citizen science through cross-network knowledge sharing for citizen science participants, practitioners, researchers, policy makers and society across Europe.

The vision for the platform is to serve as a Knowledge Hub, in aid of the mainstreaming of citizen science, and build on the growing impact of citizens participating in research across the full range of scientific enquiry. The 23 partners involved in the project aim to accomplish this by supporting the sharing of knowledge, tools, training, resources and experience between anyone doing or wanting to do citizen science.

You can find the following on the platform:

- Resources that are useful for citizen science practitioners
- Projects that are engaging the public in research via citizen science activities
- Training resources and materials about citizen science as a practice
- Training modules (self-directed training units) on plenty of topics relevant to citizen science - January 2021 release
- Organisations that are involved in citizen science projects and research
- an Events calendar and a Blog section
- Community Forums for questions, conversations, and collaboration with the rest of the community.

The EU-Citizen.Science consortium consists of 14 partners and 9 third parties from across 14 European member states. They represent a variety of stakeholders that are active in citizen science, including universities, non-governmental organisations, local authorities, community service organisations and museums. Several of them are ECSA members; in particular, five members are involved in the project as Third Parties of ECSA.

ECSA activities and milestones

Within EU-Citizen.Science, the ECSA team is leading WP2 “Platform, Community and Network Building” which includes the EU-Citizen.Science platform development in collaboration with the Ibercivis Foundation in Spain, and community building. The first version of the platform was launched in April and the second launch took place in September. In 2020, ECSA has been successfully leading project partners to perform a strong collaborative process, sharing useful expectations towards the platform development, contributing to its testing, and contributing to populating it with high-quality resources and projects. Particular attention was paid not only to listen to the community needs and expectations, addressing them through platform functionalities and contents, but also to coordinate efforts with existing national or international platforms and repositories in the field of citizen science.

ECSA has also contributed to the dissemination of project activities, liaising with the European Commission and leading a working group that brings together all citizen science projects funded by the SwafS unit to share knowledge and experience and identify synergies.

Next steps

In 2021, ECSA will continue to develop the platform and the next platform release is planned for January 2021, which at the time of writing has already taken place. This release includes a Moodle interphase that provides training modules developed under the lead of project partner UCL as well as the translation of the static part of the platform in 11 EU languages besides English. Throughout 2021, many more training modules will be developed and made available on the EU-Citizen.Science Moodle and the final release of the platform will be launched during autumn and bring new and improved functionalities. ECSA's main tasks during 2021 are to continue the work done focusing on further building the community around the platform and designing a platform sustainability plan to maintain the platform beyond the project duration – which ECSA has committed to do for at least five years.

Contacts

Marzia Mazzonetto, EU-Citizen.Science project officer (until January 2021)

Margaret Gold, EU-Citizen.Science project officer (until December 2020)

Andrea Troncoso, EU-Citizen.Science project officer (from June 2020 until September 2021)

Claudia Fabó Cartas, EU-Citizen.Science project officer (from January 2021)

@eucitsciproject

EUCitSciProject

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5.4 LandSense

LandSense is a four-year Research Innovation Action funded by the H2020 programme to connect citizens with satellite imagery to transform environmental decision-making, and to demonstrate the concept of citizen observatories. Running from September 2016 to December 2020 (extended), the project aims to uncover the potential of citizen science and earth observation to improve the way we see, map and understand the world. The project's objectives are to:

- assess the current practices, user requirements and barriers of present land use and land cover (LULC) technologies, and illustrate the potential of citizen observatories
- engage key stakeholders in the LandSense platform, facilitating the collection, integration, management and presentation of LULC data
- deliver innovative and scalable services, and implement a strategy detailing the sustainable exploitation of these technologies post-project
- demonstrate the quality, confidence and benefits of citizen-driven observations and citizen engagement for improved LULC monitoring
- promote the uptake of LandSense technologies, solutions and products for large-scale LULC monitoring across the EU, using the LandSense Services Incubator.

The LandSense project contains a wide range of demonstration cases and platforms which ran successfully and are now being reported on, in terms of outcomes and approaches:

1. Vienna green space monitoring - CityOasis mobile app
2. Amsterdam Rembrandt Park - Mijn Park mobile app
3. Toulouse LULC monitoring - Paysages mobile app, Paysages web app, Laco-wiki
4. Heidelberg/OSM land use mapping - OSMlanduse, Laco-wiki
5. CropSupport for farm management - CropSupport mobile app, CropSupport web app
6. Biodiversity threat monitoring - NaturaAlert mobile and web app
7. LandSense engagement platform - LEP platform

ECSA activities and milestones

ECSA's primary role was to complete Deliverable 2.1: to assess user requirements, barriers and engagement strategies for the LandSense citizen observatory. This was completed in February 2017 and the remainder of ECSA's time is spent supporting the communication and dissemination of demonstration (demo) cases within WPs 4 and 6. ECSA was once again involved in the organization of the LandSense Challenge, which was held as part of the ECSA 2020 conference. The Challenge invited individuals, web entrepreneurs, start-ups and small and medium enterprises (SMEs), from all participating H2020 countries, to present innovative information technology (IT) solutions that address urban landscape dynamics, agricultural land, forest and habitat monitoring. First prize went to Minučer Mesaroš, associate professor at the Faculty of Science, University of Novi Sad, for his project 'Geospatial platform for allergenic plant monitoring and management'.

Contact

Margaret Gold, project officer (until December 2020)

@LandSense

5.5 PANELFIT

PANELFIT (Participatory Approaches to a New Ethical and Legal Framework for ICTs) is an H2020-funded project that facilitates adaptation to the new EU regulations on data protection, data commercialization and security/cybersecurity issues. Its outcomes will include an open-access guidelines document, a critical analysis of the information and communication technology (ICT) data protection regulatory framework, and a report on the governance of ICT data protection ethical and legal issues.

ECSA activities and milestones

In March 2020, ECSA hosted a workshop to inform the citizens' information pack, one of the project's key public deliverables. Due to the rising travel restrictions due to the Covid-19 pandemic, this was held both onsite (at the Museum für Naturkunde in Berlin) and online, so that those who could not travel were able to contribute. Co-organized with project partners ICM-CSIC and OBCT, the workshop saw two days of rich discussions, which were captured in the workshop report.

Over the summer, ECSA supported work to complete the first draft of the Guidelines, the main output of the PANELFIT project. We also presented the project to the citizen science community through an e-poster at our third international conference. Towards the end of 2020, we launched a public survey, available in five languages, to further inform the citizens' information pack.

Next steps

The project will end in 2021, and ECSA's main focus will be to deliver the citizens' information pack, including information specifically for vulnerable communities within Europe. We will also support the partners responsible for dissemination and outreach, ensuring that the project's findings and outcomes are shared with the citizen science community.

Contact

Tim Woods, project officer (until August 2021)

@Panelfit

Panelfit.news

5.6 WeObserve

Rising trends in citizen science have led to the development of citizen observatories focused on engaging citizens in environmental monitoring across Europe. WeObserve is "an ecosystem of citizen observatories for environmental monitoring" and is funded under the H2020 EU.3.5.5. programme as a Coordination and Support Action to consolidate knowledge and improve collaboration between existing citizen observatories and related regional, European and international activities.

The WeObserve project launched in December 2017, and was extended until March 2021, with a primary mission to move citizen science into the mainstream by building a sustainable ecosystem of citizen observatories and related activities. The WeObserve consortium brings together the current H2020 citizen observatories (Ground Truth 2.0, GROW, LandSense, Scent) to actively open up the citizen science landscape through wide-ranging networks, users and stakeholders, including ECSA, GEOSS and Copernicus, to foster social innovation opportunities.

WeObserve tackles key challenges around awareness, acceptability and sustainability, aiming to create a sustainable and vibrant ecosystem of citizen observatories to advance citizen science into the mainstream of environmental monitoring. Four WeObserve Communities of Practice (CoPs) have been assessing the current knowledge base and strengthening it to address future environmental challenges, using science driven by citizen observatories.

The WeObserve consortium is very proud to have been highlighted by the European Commission for its efforts to consolidate the knowledge collected from citizen observatories, communities of practice and other initiatives in two policy briefs:

1. 'A Roadmap for Citizen Science in GEO – The essence of the Lisbon Declaration' aims to secure the integration of citizen science and citizen observatories into Global Earth Observation System of Systems (GEOSS).
2. 'Mission Sustainable: Fostering an enabling environment for sustainable citizen observatories' provides four recommendations that can contribute to the generation, execution and sustainability of citizen observatories.

In 2019, WeObserve published a seminal piece on citizen science and the SDGs, 'Citizen science and the United Nations Sustainable Development Goals' in *Nature Sustainability*. The conception and development of the paper were largely supported by WeObserve, substantiating the leading role of Europe in the integration and uptake of citizen science in implementing the SDGs. This has since been followed up with significant effort by the members of the SDG CoP for 'Mapping citizen science contributions to the UN sustainable development goals', which was published in *Sustainability Science*.

WeObserve organized an Open Data Challenge, making available data from four citizen observatories towards enabling new digital transformation opportunities and the implementation of products and services for wider social good. Learn more about the Open Data Challenge activities and winning applications here.

WeObserve also delivered two iterations of the WeObserve MOOC, 'Citizen science projects: How to make a difference' with over 700 learners from 93 countries. This continued to run until 13 December 2020.

ECSA activities and milestones

ECSA leads the task to map and report on the EU landscape of existing citizen observatories initiatives, relevant communities and their interactions. The first report 'EU Citizen Observatories Landscape Report – Frameworks for mapping existing CO initiatives and their relevant communities and interactions' was published in November 2018, and will be followed by a second report that will be delivered in the final year of the project. Interviews conducted across a wide range of citizen observatories for this task have resulted in the publication of the policy brief 'Mission Sustainable: Fostering an enabling environment for sustainable citizen observatories' that makes four specific recommendations to European and national funding bodies.

ECSA presented the outcomes of this work, along with other WeObserve partners, at the ECSA 2020 conference, in the talk 'Onto new horizons: Learnings from the WeObserve project to strengthen awareness, acceptability and sustainability of Citizen Observatories in Europe', which will be published in the Special Issue of JCom for the conference.

The online Landscape Map to showcase organizations running a citizen observatory or a community-based environmental monitoring citizen science project, has been developed together with project partner ICCS, and is inviting citizen observatories to add themselves to the map.

Contact

Margaret Gold, project officer (until December 2020)

@WeObserveEU

WeObserveEU

6. Outlook: Upcoming Projects

ECSA will be a consortium member in a number of new projects in 2021.

6.1 INCENTIVE

Europe's research performing and funding organizations (RPFOs) have a crucial role to play as agents of institutional change towards firmly grounding responsible research and innovation (RRI) in our society. The successful fulfilment of this challenging yet highly significant role calls for the values of RRI to be well embedded into their governance as well as their operation, with greater and more systematic participation of citizens and all research and innovation (R&I) stakeholders.

INCENTIVE is set on empowering European RPFOs to establish sustainable transdisciplinary hubs for stimulating and supporting excellent citizen science with engaged roles for all R&I stakeholders in line with RRI principles. The project will start by establishing and demonstrating the potential of such citizen science hubs in four world-class RPFOs, covering all four MoRRI country clusters, including University of Twente (Netherlands), Autonomous University of Barcelona (Spain), Aristotle University of Thessaloniki (Greece) and Vilnius Gediminas Technical University (Lithuania). It will tailor the governance and operating models of their hubs to their unique institutional specificities and regional ecosystems of R&I stakeholders, before putting them to the test to drive institutional change through a series of RRI-grounding actions conducted with and for society (citizen science, co-creation of public policies, R&I agenda setting, etc.).

The INCENTIVE Citizen Science Hubs, besides being a sustainable institutional change themselves, will serve as a vehicle for introducing substantial institutional changes in our RPFOs and their communities. We will closely monitor, evaluate and report on their performance, outcomes and actions, providing evidence of societal, democratic, economic and scientific impacts. Along the way, we will foster mutual learning and networking opportunities among RPFOs across Europe to share experiences and develop practical tools to enable RPFOs to drive similar institutional changes in other contexts.

6.2 ROSiE

ROSiE - Fostering responsible open science in Europe - is a three-year project funded by H2020. Its mission is to co-create, with all related stakeholders, novel and practical tools to foster responsible open science and citizen science. The project will:

- identify emerging ethical, social and legal challenges related to open science and citizen science
- provide customized solutions through an interdisciplinary knowledge hub bound to actively pursuing open approaches in science and research, while complying with relevant legal frameworks and ethical standards.

6.3 SEEDS

SEEDS is a European citizen science project to empower teenagers in their own health and in STEM (science, technology, engineering and mathematics).

6.4 Step Change

Step Change - Science Transformation in EuroPe through Citizens involvement in HeAlth, coNservation and enerGy rEsearch - will explore the potential of citizen science by developing five citizen science initiatives (CSIs) in the fields of health, energy and environment. These CSIs will tackle the issues of wildlife conservation in Slovenia, non-alcoholic fatty liver disease in the UK, energy communities in Germany, infectious disease outbreak preparedness in Italy, and off-grid renewable energy in agriculture in Uganda.

6.5 YouCount

In Europe and globally, substantial numbers of young people are at risk of social exclusion. There is, therefore, a pressing need to develop more knowledge and innovation to create more inclusive and youth-friendly societies. Successful strategies for social inclusion require better knowledge of what young people see as crucial issues for increasing their social inclusion, more knowledge about their experiences of opportunities for social inclusion in their daily lives and how youths can be involved as 'lived experts' and 'change-makers' in innovation and policy-making.

YouCount will contribute to these needs by developing 'actionable' knowledge of the positive drivers for social inclusion of youths with disadvantages and by creating better means and policy-making for social inclusion through citizen social science, where youths can participate as citizen scientists.

6.6 Socio-Bee

Air pollution accounts for an estimated 4.2. million deaths per year, mostly due to cardiovascular and respiratory diseases, and lung cancer. In the WHO European Region alone, exposure to airborne particulate matter decreases the life expectancy of every person by an average of almost 1 year.

Socio-Bee aims to reduce air pollution in urban areas through citizen science. Through an example from nature, Socio-Bee builds on the metaphor of bee colonies to develop effective behavioural and engagement strategies with a wide range of stakeholders (i.e., queen bees, drone bees, working bees, and bears) and to co-create in hives long-lasting solutions against urban air pollution supported by emerging new technologies such as drones or wearables.

6.7 CompAir

Whilst the new targets and measures coming out of COP26 are laudable, it will take more than a gathering of politicians to limit global warming as temperatures rise, crops fail and natural disasters strike. Everyday people from doctors and nurses to teachers, lawyers, researchers, office workers, small business owners, students and the unemployed will also have to band together and help and lead the fight against climate change.

COMPAIR (Community Observation Measurement & Participation in AIR science), a new initiative launched this November, aims to do exactly that. The project will support citizens across Europe, including those with no science background, to use digital sensors to collect local climate data and help them analyse it to co-create new climate friendly behaviours and policies that address sustainability both at home and across the continent.

7. Working Groups

One of the key tasks when launching the new ECSA website (see Section 3.1) was to update the information on our working groups. You can now find the latest information on these - their aims, members, achievements and current projects - on the ECSA website.

At our 2020 AGM, ECSA's members approved the creation of three new working groups.

7.1 Citizen science and universities

The purpose of this working group is to advocate and support the embedding of citizen science activities at the university level, both for research and education purposes. We hope to support universities in carrying out citizen science research projects by:

- strengthening infrastructure
- expanding the role of libraries
- sharing practices, templates, policies and training programmes
- building (or aiding) consortia for research applications.

We also hope to support education by including citizen science in curricula. Building on several excellent cases in the larger citizen science community, our aim is to advocate for and share best practices, not only at the university level (bachelor, master and PhD) but also with regards to including secondary schools and high schools in citizen science programmes.

7.2 Citizen science for health

Health is relatively under-represented in citizen science, despite the fact that it is a diverse and promising domain. Citizen science has great potential to contribute to innovative health research, as well as to society. Looking at citizen science from different levels of participation, and different types of health research, is helpful to understand the variety of research projects. Traditionally, patients are often included in health research programming; however, they are hardly or not at all engaged in decision-making on specific research questions, in methodology development, data collection, analysis and the development of conclusions and recommendations, nor in new role definitions.

In public health research, citizens are sometimes included in participatory action research, leading to responsive policies and interventions, as well as to citizen empowerment. However, such research is seldom framed as citizen science, and within public health research such (mainly qualitative) methods have less status and influence compared to expert-based epidemiological approaches.

7.3 Storytelling and other arts

Stories can activate people and invite them to be protagonists of the changes they want. And there are so many stories in the universe of citizen science. Arguments and facts are often not effective ways to get people to listen and connect. However, we can weave them into stories and make communication more effective. The purpose of this working group is to explore and gain knowledge and confidence in the way stories are an ally in science communication, specifically in citizen science.

7.4 Citizen Science Networks

At the beginning, the process on how to find such criteria and to be as open as possible was discussed in several online meetings. The common goal of the working group is to have measurable and easy to understand criteria. Project leaders from citizen science projects as well as the general public of the countries represented in the working group will be consulted in several steps of the process, if they are not part of the working group already. To facilitate this involvement, the necessary documents will be translated into the respective languages to avoid exclusion due to language barriers.

In a first step the members of the working group decided to start a literature research on characteristics and criteria for citizen science and to extract criteria, characteristics, definitions and/or typologies from these documents. This resulted in a wide range of concepts and ideas of citizen science.

In 2020 the collected characteristics/criteria/definitions/typologies from literature were grouped and refined in a transparent process. An important part of the work was to assure a process documentation that allows people to see which of the collected characteristics/criteria/definitions/typologies form the basis of each single criterion in the final criteria catalogue. The working group formulated a first draft of the criteria, was presented at ECSA 2020 in September to collect further feedback. The criteria were revised and were openly available and ready for commenting via a Padlet on EU-Citizen.Science from December 2020 until November 2021. .

In 2021 more feedback from researchers and practitioners was collected through personal contacts by the working group members in their respective countries and in a workshop at CitSciVirtual 2021. All this feedback was used to revise the criteria and formulate accompanying FAQs, guidelines and a preamble to give context to the criteria. The working group also made first preparations to collect feedback from citizen scientists in an open consultation via various channels and with different formats (e.g. interviews, blogs).

In 2022 the working group will start the open consultation process and revise the criteria, the preamble, the FAQs and guidelines according to the feedback from the citizen scientists. The aim is to present the final version of the criteria at ECSA 2022.

7.5 Empowerment, inclusiveness and equity

The working group was set up at the General Assembly in ECSA in Geneva June 2018 in cooperation with the Living Knowledge Network for science shops and community-based research. The background for the group is a joint interest from the field of citizen science and community-based research for increased cooperation, exchange of experiences and development of methods. This, we hope, will contribute to strengthening the focus on empowerment of civil society as the focus and impact of citizen science activities.

Our activities in 2020-2021 include:

- Main activities are facilitated by **WG co-chairs**: Petra Benyei, Claudia Göbel, Athanasia Nikolau & Michael Sogard Jorgensen
- Subgroup activities are initiated and carried out by **WG members**
- **Monthly online meetings** with input talks and joint activities
- Designing and **implementing inclusiveness measures** during **ECSA2020** conference, e.g. **ECSA2020 safe space policy**
- **Collecting and analysing literature and case studies** on empowerment, inclusiveness and equity in CS and CBR => building a collection of materials and advice on Google Drive**Sharing information through our mailing list**, e.g. calls for participation, partnerships or publications, job adds, relevant literature, interesting events.
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A new activity in 2021 has been:

- Co-organizing **3 webinars** with the Horizon2020 financed **YouCount** project (subgroup activity led by Claudia Göbel):
    - How to integrate young people in research & innovation?
    - Methodologies & evaluation for Youth Citizen Social Science (which aims at social inclusion)
    - Transformative & Innovative impact of Y-CSS: How to make social change?

All ECSA members are warmly invited to **subscribe to our mailing list, share experiences from their work, join our regular online and face-to-face working group meetings** and more - please find out how to get involved through our website and/or get in touch with Claudia (claudiagoebel@posteo.de), Michael (msjo@plan.aau.dk) or Petra (petra.benyei@gmail.com)

7.6 BioBlitz

Working Group Purpose:

to connect people, communities and organizations involved in the organisation of BioBlitz, to facilitate the sharing of good practice and to build capacity

Working Group Objectives:

- Exploring coordination and collaborative approaches for running BioBlitz in Europe and beyond
- Assessing applicability of existing resources for practitioners across Europe, adapt at country level and translate them
- Learning from pioneering initiatives, e.g. UK National BioBlitz Network, City Nature Challenge

- Knowledge exchange and capacity building activities, e.g. training workshops, webpages with resources.

A BioBlitz is an event in which members of the public and scientists meet, in a delimited area and for a defined time period, to record as many species as possible. By working together in an informal environment, while sharing expertise and collecting valuable scientific data, it is possible to bridge the gap between scientists and citizens. As such, BioBlitzes can be effective strategies to promote citizen science to the public and beyond.

This working group aims to connect the people, communities and organizations involved and interested in BioBlitz events, to facilitate the sharing of good practice and to build capacity for this type of event, and related events, across Europe.

In 2021, with the support of the ECSA BioBlitz working group, UK based charity the Natural History Consortium were able to join a collaboration with the University of Andrews to include a cross border BioBlitz activity as part of INTERSECTIONS: an international collaboration for European Researchers Night.

The collaborative efforts of the working group and additional support networks generated a 400% increase in recording activity on the iNaturalist recording platform during the BioBlitz. Over 48 hours, 8,270 participants in 43 Countries collected 53,236 wildlife observations of 7,028 different species.

The Natural History Consortium have submitted a bid to European Researchers Night 2022 to repeat EuroBioBlitz and, if successful, are keen to work with the ECSA working group to:

- Build on learning and resources from the 2021 EuroBioBlitz pilot activity
- Collaborate on additional funding bids to grow local participation and support Working Group members
- Translate resources into more languages to broaden participation across more of Europe

7.6 Project, data, tools and technology

Chair: Jaume Piera – ICM-CSIC, Spain.

ECSA Active Members in 2021:

V. Antoniou. Hellenic Army Geographic Directorate, Athens, Greece

J. Ansine. The Open University (UK)

L. Bastin. Department of Computer Science, Aston University, Birmingham, UK

L. Ceccaroni. Earthwatch Europe, Oxford, UK

G. Falquet. Centre for Informatics, University of Geneva, Geneva, Switzerland

F. Klan. Institute of Data Science, German Aerospace Center (DLR), Jena, Germany

R. Lemmens· Faculty of Geo-Information Science and Earth Observation, University of Twente

F. Ostermann. Faculty of Geo-Information Science and Earth Observation, University of Twente

J. Piera. Institute of Marine Sciences, Barcelona (ICM-CSIC), Barcelona, Spain

C. Tsinaraki European Commission, Joint Research Centre (JRC), Ispra, Italy

S. Schade. European Commission, Joint Research Centre (JRC), Ispra, Italy

K. Soacha. Institute of Marine Sciences, Barcelona (ICM-CSIC), Barcelona, Spain

J. Trojan. Faculty of Logistics and Crisis Management, Tomas Bata University, Czech Republic

T. Woods. ECSA

K. Zorou. Web2Learn, Greece

INTERNATIONAL MEETINGS

A Code of Conduct on Data Protection for Responsible Research and Innovation (CCDP)

Virtual meeting on the 20th of April and the 24th of June, in the framework of the H2020-PANELFIT project. PANELFIT has produced a Code of Conduct on Data Protection for Responsible Research and Innovation and organized these Mutual Learning Encounters, targeting end-users, i.e. researchers using methodologies focused on ICT. These interactions helped identify eventual inadequacies as well as improve the Code of Conduct's clarity and feasibility.

IMPLEMENTATION ACTIVITIES

COST Action CA15212: "Citizen Science to promote creativity, scientific literacy, and innovation throughout Europe"

As the final outcome of the COST Action, the group contributed to the book *The Science of Citizen Science* with chapter 9 (Lemmens, R., et al. ***A Conceptual Model for Participants and Activities in Citizen Science Projects***.) This contribution provides a conceptual model to describe projects and data in a standardised manner, focusing on the description of the participants and their activities. The model was designed to fulfil the needs of different stakeholders, and it includes previous ideas and concepts from past models, such as the Public Participation in Scientific Research (PPSR) Common Conceptual Model and the Open Geospatial Consortium (OGC) standards

Legal and Ethical Aspects of ITC

Within the context of the H2020 PANELFIT, were CSIC and ECSA are partners of the consortium, two documents were published

ICTs, data and vulnerable people: a guide for citizens. It forms part of the Citizens' Information Pack produced by the PANELFIT project, and is available in English, French, German, Italian and Spanish. Document available at https://www.researchgate.net/publication/355143897_ICTs_data_and_vulnerable_people_a_guide_for_citizens

Links with the European Open Science Cloud (EOSC)

Some ECSA members were participating in the EOSC Skills and Training Working Group that produced the report. ***Digital skills for FAIR and open science***. The report analyses the framing of digital skills required in EOSC in the wider European agenda for skills, to provide recommendations for Member States and Associated Countries on how to support EOSC in national skills policies and strategies. Document available at:

8. Finances

Financial development association

ecsa European Citizen Science Association	result 2017	result 2018	result 2019	plan 2020	result 2020
total revenue	**45.815,14**	**53.536,98**	**64.576,92**	**68.000,00**	**66.043,09**
member fees	4.429,00	13.139,76	11.857,00	13.000,00	14.445,32
unrestricted funds	41.386,14	40.397,22	52.719,92	55.000,00	51.597,77
personnel costs	**34.437,98**	**36.955,10**	**43.604,71**	**45.000,00**	**36.319,09**
non-personal costs	**4.774,32**	**14.660,62**	**13.132,21**	**19.000,00**	**10.999,65**
rent/computer	0,00	10,99	0,00	0,00	0,00
general admin (website)	848,67	4.029,59	1.627,51	5.000,00	4.357,05
travel	1.717,58	2.290,30	3.019,50	4.000,00	1.378,24
working groups					
thrid parties	**1.868,63**	**8.329,74**	**8.485,20**	**10.000,00**	**5.264,36**
proposal consultation					1.000,00
bookkeeping/payroll					1.706,02
write off property	339,44				130,89
office supplies					379,95
insurances					1.164,00
other costs					883,50
total spendings	**39.212,30**	**51.615,72**	**56.736,92**	**64.000,00**	**47.318,74**
capital accumualtion	**6.602,84**	**1.921,26**	**7.840,00**	**4.000,00**	**18.724,35**
contingency reserves	**7.961,05**	**9.882,31**	**17.722,31**		**36.446,66**

9. Acknowledgements

8.1 In-kind contributions in 2020

Museum für Naturkunde Berlin

We would like to thank ECSA's president, Johannes Vogel, and the Museum für Naturkunde Berlin for their continued support, which includes office space, administrative support, design support, travel support, print materials, website hosting, administration and development, and writing and administering research proposals.

Sissa MediaLab and the University of Trieste

Our 2020 conference would not have been possible without the huge input of our hosts in Italy, who put in a huge amount of time, effort and expertise behind the scenes to ensure a smooth transition from an onsite event to an online version. Special thanks are due to Enrico M. Balli, Dorina Stanculescu, Francesca Rizzato and Monica Belfiore, and their team at Sissa Medialab.

8.2 Other contributions

ECSA's success is made possible by its many supporters, who we would like to thank and acknowledge.

The chair and vice-chair for their tireless dedication and great service to ECSA

The board of directors for their great commitment

Sissa Medialab and the University of Trieste for hosting our online conference in 2020

The ECSA advisory board, all ECSA members, and working group chairs and members and their commitment and support, and making ECSA possible in the first place.