European Commission

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HORIZON EUROPE POLICY SUPPORT FACILITY

2021 – 2027

MLE CSI-PP Topic 5 Scaling up citizen science
Berlin, 7-8 November 2022

Topic 5 Expert: Antonella Radicchi, PhD

Research and Innovation

TOPIC 5 WORKSHOP AGENDA – DAY 1

Time	Description
8.15-9.00	Pick up from the hotel and transfer by bus to the Falling Walls Conference
9.00-11.30	Site visit to the Falling Walls Conference • Welcoming Session • Falling Walls Pitches on Science Engagement • Coffee Break and networking with pitch holders and jury
11.30-12.00	Transfer by bus to DLR PT building
12.00-12.10	Welcome address and presentation of the agenda by Alan Irwin, Meeting Chair
12.10-12.20	Welcome address by Anne Overbeck, Unit 112 „Strategic Foresight, Participation, Social Innovation“, BMBF
12.20-13.30	Introductory Presentation: “Citizen Science in Germany” • Silke Voigt-Heucke, Museum für Naturkunde Berlin • Q&A (10 minutes) • Anne Overbeck, Unit 112 „Strategic Foresight, Participation, Social Innovation“, BMBF • Q&A (10 minutes)
13.30-14.30	Lunch
14.30-15.00	Presentation about Topic 5 “Scaling up citizen science” • Summary of the discussion paper including an overview of the results from the survey by Antonella Radicchi • Q&A
15.00-16.00	Working session • Discussion on “Challenges and Success Factors for scaling up CS”’ in small groups (Antonella Radicchi coordinates)
16.00-16.30	Coffee Break
16.30-17.15	Continued, Working session • Discussion on “Challenges and Success Factors for scaling up CS”’ in small groups (Antonella Radicchi coordinates)
17:15 - 17.30	Wrap-up of day one and insight on Day 2 agenda by meeting chair Alan Irwin
19.00	Dinner at Hotel Albrechtshof

Citizen Science in Germany - the national platform Bürger schaffen Wissen, from the Green Paper to the White Paper, and where do we go from here?

Silke Voigt-Heucke

The national platform Bürger schaffen Wissen

Green Paper Citizen Science Strategy 2020

52 recommendations for action

As a result of the GEWISS process, Bürger schaffen Wissen was founded in 2014 as a national Citizen Science Platform.

The Mission of Bürger schaffen Wissen

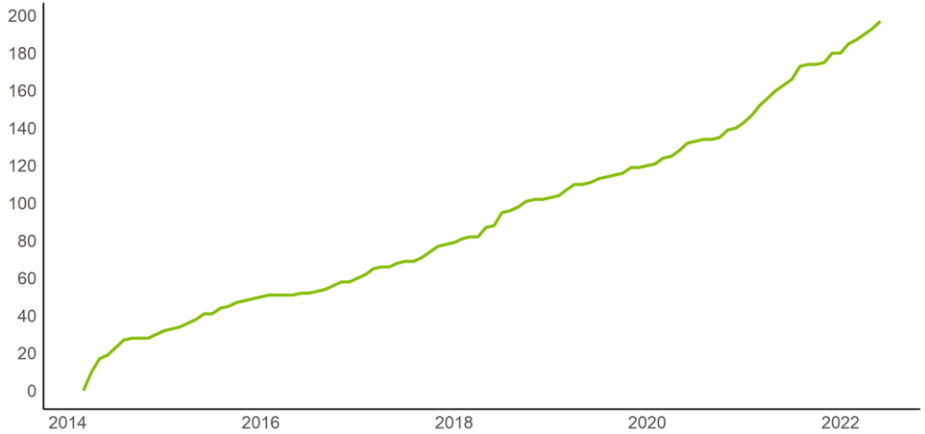
We aim to mainstream Citizen Science in Germany and **to provide information about projects** that encourage people to participate in research. We **network actors** across disciplines and institutions, **engage in the discourse** on the potentials of Citizen Science and **advocate for the development of Citizen Science**, including in the context of international working groups.

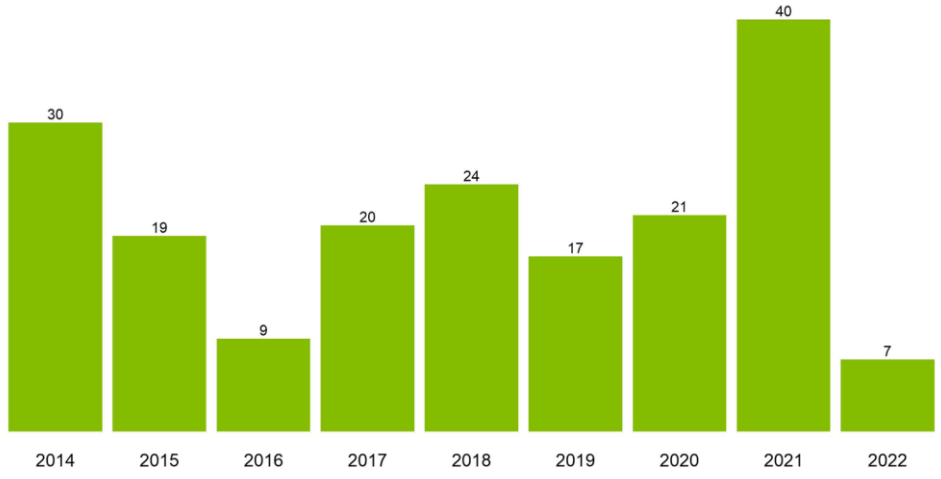
Bürger schaffen Wissen

- The Citizen Science Platform for Germany
  - Online since April 2014 - buergerschaffenwissen.de
  - Approx. 70,000 users annually
- 9 thematic and regional working groups
- Various event and communication formats:
  - *Trainings, Workshops, Digital Lunch Break, Forum Citizen Science (conference), Blog, Newsletter, Twitter & Facebook*

Eine Plattform von
für Natur MUSEUM FÜR NATURKUNDE BERLIN
wissenschaft im dialog
GEFÖRDERT VOM
Bundesministerium für Bildung und Forschung

Bürger schaffen Wissen
Project numbers 4/2014 - 7/2022





From the Green Paper to the White Paper

Green Paper Citizen Science Strategy 2020

52 recommendations for action

In 2020, Citizen Science ...

is an integral part of societal and science-based debates.

Citizen Science Strategie 2030

A collaborative co-creative process

Bundesministerium
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und Forschung

DBU

NABU · BUND · BN · SLUB Wir führen Wissen. · KIT · Sächsisches Staatsarchiv · Freistaat Sachsen · THÜNEN · Max-Planck-Institut für Biogeochemie · natur gucker.de · hhu · Universität Bremen · IPN · HelmholtzZentrum münchen · WWU Münster · RUB · IGB · JÜLICH · HELMHOLTZ Open Science · Deutsches Zentrum für Luft- und Raumfahrt · Fraunhofer ISI · iDiv · Fraunhofer IPA · MDC · HELMHOLTZ · UFZ · wissenschaft im dialog · Museum für Naturkunde Berlin

Citizen Science Strategie 2030

From the Green Paper to the White Paper

Citizen Science Strategie 2030

A collaborative co-creative process

Bundesministerium für Bildung und Forschung

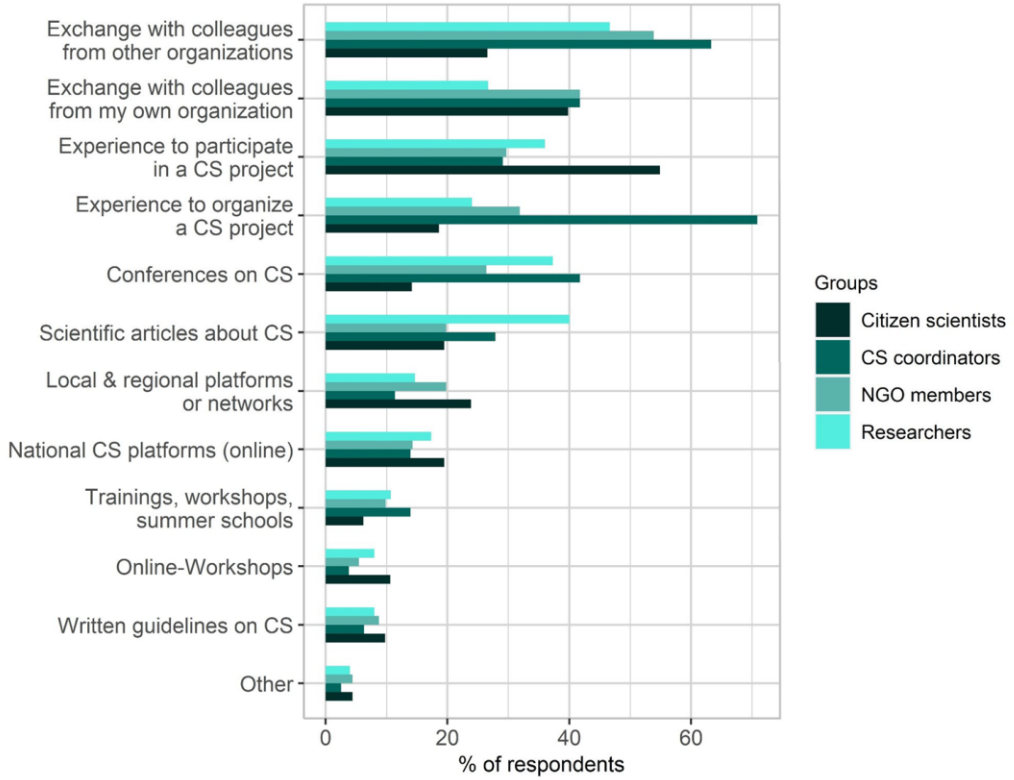
DBU

Milestones

- 219 participants from 136 organizations
- 2 dialogue forums May & Nov 2020
- 1 online survey Sep 2020 >400

Online CS Community Survey

Self-reported effectiveness of support instruments for gaining expertise in citizen science

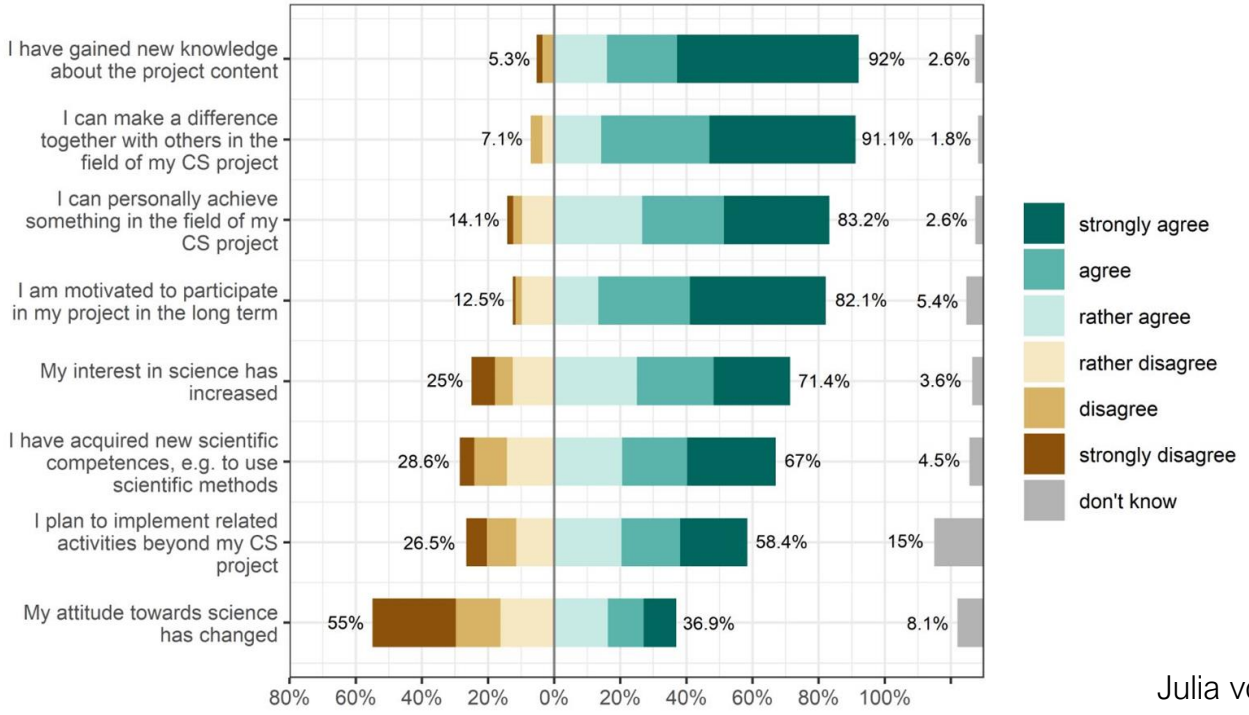


Multiple-choice question with a maximum of 5 answers (n= 79 coordinators, 75 researchers, 91 NGO members and 113 citizen scientists)

Julia von Gönner et al. (submitted)

Online CS Community Survey

Self-reported impacts of CS activities on citizen scientists' learning and personal development

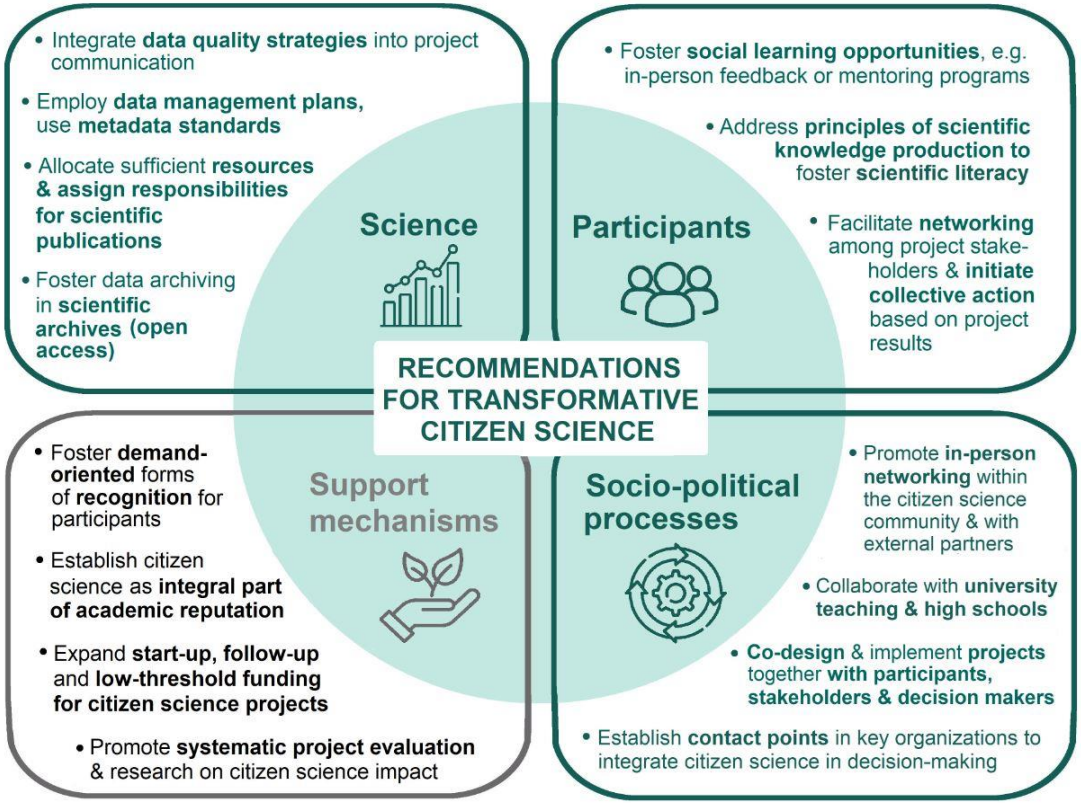


Percentages of agreement are indicated with green bars on the right side, percentages of disagreement are shown on the left side with bars colored in brown (n=113 citizen scientists)

Julia von Gönner et al. (submitted)

Online CS Community Survey

Recommendations for action to strengthen the transformative impact of CS



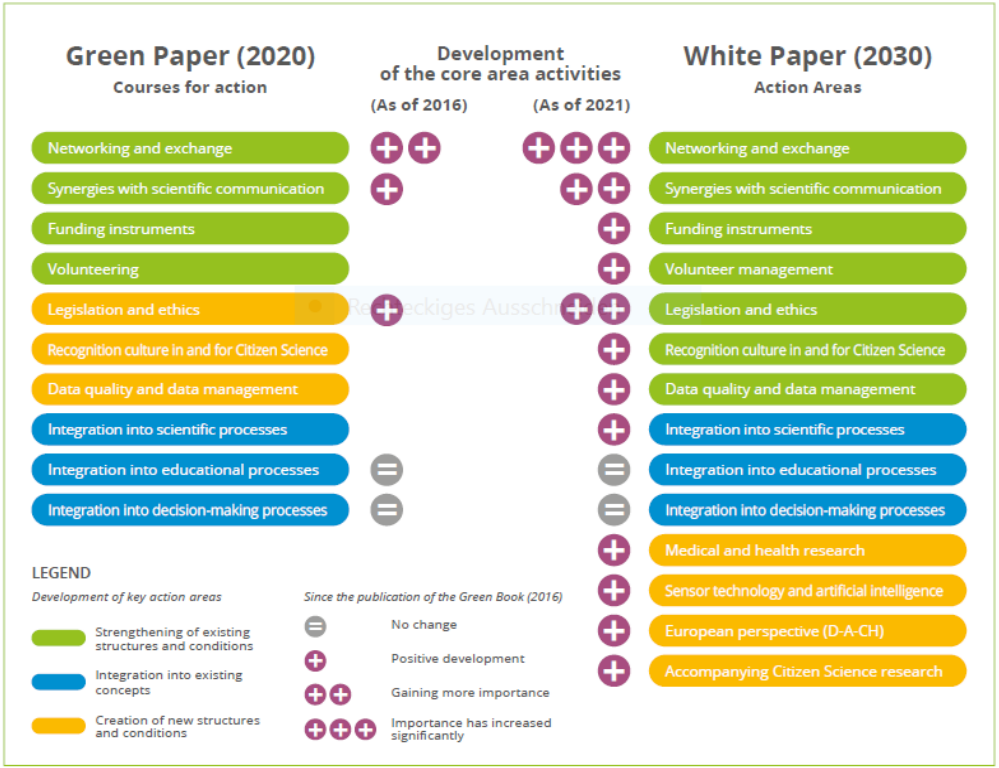
Julia von Gönner et al. (submitted)

Citizen Science Strategie 2030

15 thematic priorities addressed for the White Paper

Citizen Science Strategie 2030

Comparison of the status from 2016 to 2021



Citizen Science Strategie 2030

1.3 Recommended actions for area networking and exchange

1.1
Networks and working groups should be strengthened. Financial and non-material support should be provided for networking in organisations and funding programmes, e.g. through **network meetings for funded projects within a programme** or with **regional networking workshops** for Citizen Science projects.

1.2
Exchange opportunities for project coordinators should be anchored within the structure of the projects, since new project coordinators learn most from experienced colleagues.

1.3
Funding bodies and institutions from science and society (such as science shops, science houses, museums, libraries, archives, etc.) should consolidate and guarantee the extensive range of **local, regional and national exchange platforms.** This requires not only willingness but also financial resources.

1.4
Universities and research organisations should set up their own Citizen Science **contact, advice and coordination centres** combined with science shops, science houses and regulatory sandboxes. Specific contacts (existing or new advisors) should identify participatory, transdisciplinary research projects within the university or research institution, connect the participants, intensify Citizen Science, raise awareness among researchers, make ongoing Citizen Science projects visible and provide advice (e.g. on research design, funding opportunities, volunteer management, communication, etc.).

1.5
Research institutions should anchor support and networking structures for Citizen Science into the structure of **strategies and personnel planning.**

1.6
Research institutions and cities/municipalities should collectively **establish** transdisciplinary **city labs and regulatory sandboxes** and/or **science houses.** These should be low-threshold offers to create exposure to science and could also be role models and hosts for Citizen Science networks.

1.7
Research institutions and the Citizen Science community should make better use of the potential that has thus far not been exploited of networking with gerontology, at technical schools, voluntary agencies, neighbourhood offices, city libraries, science shops, etc.

1.8
Civil society organisations, research institutions and funding agencies should establish networking methods and formats for exchange and networking, such as the annual National Citizen Science Conferences (with different sponsors/organisers, e.g. through associations, science shops, volunteer agencies, etc.).

1.9
The Citizen Science community should draw up a map of networks, points of contact and coordination centres relevant to Citizen Science as well as physical spaces for knowledge transfer and dialogue with civil society (such as science houses, regulatory sandboxes, science shops, etc.). Municipalities and local multipliers should be seen and used as interfaces to accomplish this.

Addressees
Practitioners · Civil society · Science · Educational organisations · Policymakers · Funding bodies

8.3 Recommended actions for area integration into scientific processes

8.1
Interaction with civil society must be within the scope of researchers. Research communities and universities should improve recognition of Citizen Science as a research method, e.g. by including Citizen Science experiences in the scientific evaluation system through a point system for Citizen Science engagement and by including Citizen Science as a criterion when performing a general evaluation of research projects. Citizen Science could be further strengthened by mutual exchange between Citizen Science projects in different research fields and the promotion of interdisciplinary Citizen Science projects.

8.2
Scientific institutions and funding agencies should incorporate Citizen Science participation more firmly in academic research **by systematically examining future research projects in relevant disciplines for effectiveness and influence of Citizen Science,** among other things.

8.3
Scientific educational institutions should produce training and further education materials, expand available training workshops and open educational resources in order to make Citizen Science a more well-known method in academic research. An example of how this can be achieved is by integrating Citizen Science skills, open science and participatory methods into university curricula. At the same time, open science training courses at universities (e.g. introductory courses in scientific work) should be developed and made accessible to citizen researchers.

8.4
Universities and scientific institutions should create advisory structures on Citizen Science that can be used by their own academic researchers and students. In support of institutional structures, we should promote developing a national network for the exchange of experience between Citizen Science advisory centres (→ action area 1, → course of action 1.10).

8.5
Research communities and universities should present the existence of their own Citizen Science activities more concisely on their websites and at the same time build digital platforms that present, network and support Citizen Science projects in order to increase visibility for Citizen Science as an innovative potential for science. Events and initiatives should be organised regularly at scientific institutions to promote rapport between science and citizens, such as "science night", "science shops", "book a scientist" or "open door day".

8.6
In Citizen Science projects, scientists should systematically highlight the citizen researcher participation, for example by publishing acknowledgements in research reports and on the project website or by listing citizen researchers as co-authors in scientific publications (→ action area 5).

8.7
Scientific publishers/journals should increasingly extend the scientific publication processes to Citizen Science.

8.8
Citizen researchers should be increasingly involved in scientific congresses and conferences, for example to report on their experiences and thus act as a trigger for "non-Citizen Science scientists" and the specialist community. Therefore, funding agencies should finance these activities in research projects and openly communicate this funding opportunity so that the Citizen Science community can actively perceive it.

8.9
Research funding institutions should plan a larger timeline and monetary volume for Citizen Science research project funding in order to make discovery processes with citizens more attractive and feasible for scientists. This can be made possible by providing sufficient funding for the initial phase of Citizen Science projects and for the follow-up of citizen participation in research projects, and by appointing citizen researchers as jury members for the distribution of research funds in selection procedures for Citizen Science research project funding (e.g. from federal ministries, foundations). Citizen Science should be a significant part of the portfolio of research funding organisations (e.g. DFG).

Addressees
Practitioners · Civil society · Science · Educational organisations · Policymakers · Funding bodies

Aletta Bonn, Wiebke Brink, Susanne Hecker, Herrmann, T.M., Liedtke, C., Premke-Kraus, M., Voigt-Heucke, S., von Gönner, J., Altmann, C., Bauhus, W., Bengtsson, L., Brandt, M., Bruckermann, T., Büermann, A., Dietrich, P., Dörler, D., Eich-Brod, R., Eichinger, M., Ferschinger, L., Freyberg, L., Grützner, A., Hammel, G., Heigl, F., Heyen, N.B., Hölker, F., Johannsen, C., Kiefer, S., Klan, F., Kluß, T., Kluttig, T., Knapp, V., Knobloch, J., Koop, M., Lorke, J., Munke, M., Mortega, K., Pathe, C., Richter, A., Schumann, A., Soßdorf, A., Stämpfli, T., Sturm, U., Thiel, C., Tönsmann, S., Valentin, A., van den Bogaert, V., Wagenknecht, K., Wegener, R. & Woll, S

After the White Paper:
Developments on Citizen Science since 2021

Citizen Science

Anchored in the coalition agreement in Germany

"***We will use Citizen Science to integrate perspectives from the civil society more strongly into research.***"

Coalition agreement of the SPD, Bündnis 90/Die Grünen and FDP 2021, p.24

The Citizen Science Competition for Cities and Municipalities

- Joint project of WiD and MfN
- Boost Citizen Science and support new or existing local structures and actors in particular

The Citizen Science Competition for Cities and Municipalities

Aims of the competition

1. Highlight Citizen Science as a topic and research approach in everyday urban life
2. Motivate city dwellers to participate in research through participatory activities
3. Initiate the development of sustainable structures for Citizen Science in cities

The Citizen Science Competition for Cities and Municipalities

The three finalists

- Stadtrandgeschichten - Exploring Migration and Social Diversity
- Architectural culture and climate-friendly buildings in Dresden - Mapping, researching and communicating knowledge about buildings
- Language Checkers - This is how we speak in Neckarstadt

An outlook for the future

- Next BMBF funding period (2023-2025) for the national Citizen Science Platform in the application process
- Citizen Science Prize for excellent research planned for 2023 and 2024
- Increased focus on integrating civil society multipliers to mainstream Citizen Science
- Concept for institutionalization and new branding of Bürger schaffen Wissen
- The MfN is working on the establishment of a Citizen Science Center

Questions?

silke.voigt-heucke@mfn.berlin

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Citizen Science in Germany

Dr. Anne Overbeck
German Federal Ministry of Education and Research
Unit 112 „Strategic Foresight, Participation, Social Innovation

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BÜRGER FORSCHUNG
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BMBF-Förderung der Bürgerforschung

I. Strategic Dialog

- Green Paper “Citizen Science Strategy for Germany 2020
- Platform “Bürger schaffen Wissen” funded since 2013

Bürger
schaffen
Wissen
Die Citizen Science Plattform

II. Specific Funding

- 1st Funding Guideline 2018-2020: 13 Projects, 5 Mio. Euro

II. Specific Funding


Bundesanzeiger

Bekanntmachung

Bundesministerium
für Bildung und Forschung

Richtlinie

2nd Funding Guideline:

- 15 Projects, 9 Mio. Euro
- Duration 4 years (2021-2024)
- Empowerment of civil society
- Variety of actors and topics
- Accompanying evaluation

… more to come

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III. Diversification of Funding

Guideline for legal questions

Citizen Science Festival

Campaign „Expedition ERDreich“

German/French project: Lost objects, regained nature

Campaign „Plastic Pirates Go Europe“

On your marks! Citizen Science in your town - Competition

DMP-Tool

Data Management Tool for Citizen Science Projects

Challenges ahead

- Integrating CS into policy decisions
- Activating local network
- Increasing scientific reputation of CS

On your marks! Citizen Science in your town

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

Strengthening Scientific Reputation

- Award for Scientific Excellency in Citizen Science Projects

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Thank you for your attention!

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HORIZON EUROPE POLICY SUPPORT FACILITY

2021 – 2027

ANTONELLA RADICCHI, PhD

MLE CSI-PP Topic 5 Scaling up citizen science

Berlin, 7-8 November 2022

Research and Innovation

Scaling up citizen science in Europe

STATE OF THE ART IN EUROPE

- The European citizen science (CS) landscape shows an increasing number of projects, practices and initiatives developed across Europe in the past years
    - E.g., EU-Citizen.Science platform hosts 240 citizen science projects, out of which 194 are currently in progress, with 198 organisations engaged (as of October 2022)

- Despite the « Scaling Ambition », CS projects mainly run on pilots

- Little empirical evidence of success factors for scaling up CS projects and limited knowledge about CS approaches and infrastructures developed across Europe in support of upscaling CS

MLE CSI-PP Topic 5: Scaling up citizen science

AIM

- Draw on the shared experiences to discuss:
    - Challenges and success factors for scaling up CS projects on the basis of different approaches implemented in Member States (MS)
    - Means and willingness to contribute to the scaling up of transnational European CS campaigns

FOCUS AND TARGETED STAKEHOLDERS

- Uptake for policy and policymakers

MLE CSI-PP Topic 5: Scaling up citizen science

A MIX METHODS APPROACH TO DATA COLLECTION

- Preliminary literature review in CS
- Interviews with seven experts in CS and cognate disciplines
- A survey distributed among the MLE CSI-PP country representatives

CAVEAT

- Data stem only from the European CS landscape and CS projects initiated by European institutions (research centres, universities) and funded via institutional funding programmes

Scaling up citizen science

DEFINITION & DIMENSIONS

DRIVERS & CHALLENGES

SUCCESS STORIES

European Commission

Meaning/s of scalability in citizen science

Meaning/s of scalability

FROM THE LITERATURE REVIEW

- There is no general consensus on the meaning of scalability, its dimensions and the approaches to foster the scaling up of CS projects
- In the literature on CS and its cognate disciplines, the term up-scaling has been
    - Underexplored
    - Used inconsistently as a synonym of spreading or replicating
- Maccani and colleagues (2020):
    - Up-scaling can be considered as expanding a successful citizen science initiative in terms of both, the number of participants and the geographic extent
    - Spreading refers to portability and replication of existing solutions, without a change of the actual scale of the activity in itself

Meaning/s of scalability

FROM THE INTERVIEWS WITH EXPERTS

- Scalability and spreadability: overlapping of the terms
- **Replicability as a sustainable dimension of scalability**
- Adaptability as a characteristic of successful scaled-up CS projects

- How to measure the success of upscaling:
    - Economic value/profit versus social value and impact on people's lives
    - **Quantitative versus qualitative growth (esp. for citizen engagement)**

Meaning/s of scalability

FROM THE SURVEY WITH THE MLE CSI-PP

- Scalability can be generally associated with **a growth in size**
- Scalability occurs according to several dimensions, such as:
    - the geographic spread
    - the temporal spread
    - the research scope
    - the communities engaged
    - the amount of data collected
    - the technology / methodology deployed

(See also Table 1 on page 10-11 of the Discussion Paper)

Why is it important to define scalability in CS?

A lack of common agreement on the definition of scalability and its dimensions can represent

"*a substantial gap […] with respect to a commonly understood theoretical and pragmatic framework to first understand and subsequently guide scaling and spreading of practices and outcomes (also) in the Citizen Science field*"
(Maccani et al. 2020)

European Commission

Drivers, success factors, challenges

Drivers, success factors, challenges

FROM THE LITERATURE REVIEW

- Limited insights into the factors that influence the processes of scaling up CS projects and initiatives
- A valuable exception is represented by the 9-Drivers Framework to scale up citizen science « by design » (Maccani et al. 2020)

Drivers, success factors, challenges

FROM THE LITERATURE REVIEW

- Limited insights into the factors that influence the processes of scaling up CS projects and initiatives
- A valuable exception is represented by the **9-Drivers Framework to scale up citizen science « by design »** (Maccani et al. 2020)

    - **3 intrinsic elements of a given CS initiative to be scaled**: proof of value, ease of use and understanding, openness
    - **3 elements supporting the up-scaling**: communication and dissemination strategies, community and champions, knowledge sharing and transfer resources
    - **3 extrinsic elements of the target socio-technical context**: matter of concern, legal and social alignments

Drivers, success factors, challenges

FROM THE SURVEY WITH THE MLE CSI-PP (1/2)

- Responses, reported as success factors and challenges, aligning with the 9-Drivers Framework:
  - Proof of value
  - Communication and dissemination
  - Community and Champions
  - Knowledge sharing and transfer resources
  - Social alignment

Success factors and challenges

Drivers, success factors, challenges

FROM THE SURVEY WITH THE MLE CSI-PP (2/2)

- Reported success factors **not aligning with the 9-Drivers Framework**:
    - Citizen scientists' capabilities and commitment
    - Robust and flexible project plans
    - Availability of resources (time, personnel, funding) **for the citizen scientists**

- Reported challenges **not aligning with the 9-Drivers Framework**:
    - Availability of resources (time, personnel, funding)
    - Research integrity and high level of data quality
    - Resistance from non-CS research to commitment

Specific challenge: Funding

FROM THE LITERATURE REVIEW, THE INTERVIEWS AND THE SURVEY WITH THE MLE CSI-PP

- Lack of specific funding lines, programs and policies for scaling up CS projects at the European and national level

- Lack of specific assessment criteria for selecting and funding CS projects and initiatives to scale up
    - The definition of assessment criteria is **dependant** from the definition of upscaling and its dimensions in CS

Specific challenge: Assessment criteria

FROM THE SURVEY WITH THE MLE CSI-PP

Based on which criteria would you select citizen science projects to be scaled up transnationally?

- *Data quality*
- *High data quality*
- *Relevance of data*
- *Methodological benefit from big sample numbers or transnational data*
- *Need for a lot of data that researchers are not able to collect themselves*

- *Impact on research*
- *Potential for high impact*

- *Topic of national/ international interest addressing global challenges;*
- *European/Global dimension of topic (e.g., relevance to EU Missions);*
- *Comparative research/transnational topics*

- *Addressing societal challenges*
- *Benefits for citizens*
- *Social impact*
- *Touch people in their daily life*
- *Common interest*
- *Interest from other target groups*
- *Ethical involvement of citizens*

- *Previous successful campaign/project*

- *Willingness of CS campaign team to expand*

- *Potential to engage/activate citizens in a specific policy area (e.g., higher level on the "citizen science escalator")*

- *The project's ability to engage broadly*

- *Campaign fulfilling all ECSA criteria for a CS project*

Proof of value
Matter of concern
Citizen engagement

Success stories from the MLE CSI-PP

European Commission

Five exemplary up-scaled CS projects

FROM THE SURVEY WITH THE MLE CSI-PP

- The Plastic Pirates – Go Europe! citizen science initiative
- FotoQuest GO
- The Star Spotting Experiment
- The Tea Bag Index
- Dugnad for Havet (in English: Marine Citizen Science

(See the Discussion Paper pp- 20-27 and Appendix C)

Five exemplary up-scaled CS projects

FROM THE SURVEY WITH THE MLE CSI-PP

Commonalities

- **Matter of concern** (plastic water pollution, land use, light pollution, soil health, marine life and rubbish)

- Infrastructuring (IT-system, mobile apps)
- Communication, citizen engagement, capacity building
- Social and legal alignments
- Expertise and personal motivations
- Lack of resources (personel, funding)
- Lack of business plans/sustainability plans

Success factors and challenges

Uptake for policy and policymakers

Uptake for policymakers: open questions

What does scalability / spreadability / replicability in CS mean for the MLE CSI-PP country representatives?

What are the dimensions that should define scalability in CS?

Is scalability in CS a quantitative and/or qualitative construct?

How can scalability and its dimensions be measured by policymakers?

(Source: Discussion Paper page 12, 28)

Uptake for policymakers: open questions

What criteria can be applied by policymakers for measuring impact/proof of value of CS projects and initiatives?

What criteria can be applied by policymakers for selecting CS projects to up-scale transnationally?

What kind of funding mechanisms can be developed by policymakers for supporting the upscaling of CS projects and initiatives?

How can policymakers support CS practitioners/scientists to develop alternative business models for upscaling and sustaining CS projects and initiatives?

(Source: Discussion Paper page 20, 29)

Uptake for policymakers: open questions

How can policymakers support the alignment of approaches and the increase of co-operation?

How can policymakers contribute to tackling the challenges represented by scaling up CS projects and initiatives?

What uptake for policymaking can be derived from the success factors of the up-scaled CS projects?

(Source: Discussion Paper page 27)

Working sessions in small groups

European Commission

Working session #1

European Commission

Suggested foci of the working sessions

WORKING SESSION #1
Definition/s & Dimensions

- Guiding open questions
- Potential outcome/s: **a shared definition** of upscaling & its dimensions for the MLE CSI-PP

WORKING SESSION #2
Drivers, Success Factors & Challenges

- Guiding open questions
- Potential outcome/s: list of **assessment criteria** for funding projects to upscale

WORKING SESSION #3
Policy-oriented recommendations

- Guiding open questions
- Potential outcome/s: **a roadmap** for the creation of **policies, programmes, funding lines**

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Uptake for policymakers: open questions

#1 – Definition of scalability and its dimensions for the MLE CSI-PP country representatives

- What does scalability in CS mean for the MLE CSI-PP country representatives?
- Is scalability in CS a quantitative and/or qualitative construct?
- Should scalability and its dimensions in CS be 'responsible'[44]?
- What are the dimensions that should define scalability in CS?
- What are the differences (if any) between the term scalability, replicability and adaptability for the MLE CSI-PP country representatives?
- Can a common definition of scalability in CS be relevant for policymakers?
- How do the scalability's dimensions interrelate and affect the scalability of CS projects?
- How can scalability and its dimensions be measured by policymakers?
- The seven Questions of the Scaling Ambition Framework[45]
    1. What do we want to scale?
    2. For whom? Who is our target group?
    3. Where? What is/are our target intervention area/s?
    4. How many? What is the size of the target group aimed for?
    5. By whom the scaling process is led?
    6. By when will we reach the desired scale?
    7. Why? What is the system change we contribute to?

(Source: Discussion Paper page 28)

Working session #2

European Commission

Suggested foci of the working sessions

WORKING SESSION #1
Definition/s & Dimensions

- Guiding open questions
- Potential outcome/s: **a shared definition** of upscaling & its dimensions for the MLE CSI-PP

WORKING SESSION #2
Drivers, Success Factors & Challenges

- Guiding open questions
- Potential outcome/s: list of **assessment criteria** for funding projects to upscale

WORKING SESSION #3
Policy-oriented recommendations

- Guiding open questions
- Potential outcome/s: **a roadmap** for the creation of **policies, programmes, funding lines**

European Commission

Uptake for policymakers: open questions

#2 – Lessons from the field: success factors, challenges and mitigation strategies/action plans
• What lessons can be learnt from the exemplary up-scaled CS projects? • What are the common success factors in the approaches underpinning the up-scaled CS projects? • What are the success factors to consider for developing a roadmap for transnationally up-scaling CS projects? • How can policymakers support the alignment of approaches and the increase of co-operation? • How can policymakers contribute to tackling the challenges represented by scaling up CS projects and initiatives? • What uptake for policymaking can be derived from the success factors of the up-scaled CS projects?

(Source: Discussion Paper page 29)

TOPIC 5 WORKSHOP AGENDA – DAY 2

Time	Description
8.30-9.00	***Reminder to check out of the hotel by 9.00 latest (also possible in advance)***
9.00-9.30	Meeting at the hotel, transfer to DLR PT venue by public transport
9.30-9.40	Welcome address by the meeting chair Alan Irwin and presentation of the agenda
9.40-10.45	Exemplary project for Germany "Plastic Pirates" • Presentation of the Plastic Pirates initiative and its Europeanisation by DLR-PT • Presentation of the accompanying research of the Plastic Pirates initiative by Valerie Knapp, Ruhr Universität Bochum • Presentation of the further Europeanisation of the Plastic Pirates citizen science initiative by DLR-PT and local partners from the participating MS • Q&A
10.45-11.15	Coffee Break
11.15-12.15	Working session • Discussion in small groups about roadmaps for scaling up CS projects (Antonella Radicchi coordinates)
12.15-12.30	Wrap-up of discussions by Antonella Radicchi
12.30-13.30	Lunch
13.30-14.30	Reflective Interactive Exercise – Part I (Margaret Gold, Alan Irwin) • Final Report: overarching recommendations and roadmap • Group discussion
14.30-15.00	MLECSI – PP Reflective Interactive Exercise – Part II Introduction to the session and discussion in small groups about lessons learned and actions taken or planned (Antonella Radicchi and Muki Haklay coordinate) • What have you learnt from the MLE? • What actions have been taken so far or planned?
15.00-15.15	Closing by Meeting Chair Alan Irwin

The Europeanization of the Plastic Pirates

MLE Meeting, 8. Nov. 2022

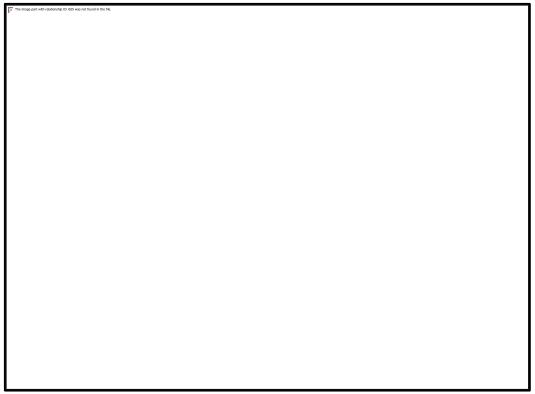
DLR-PT

Agenda

1. Welcome
2. Genesis of the initiative and its Europeanization
3. Accompanying research of the Plastic Pirates initiative
4. Shared experiences on the upscaling by local partners and project coordinators
5. Questions & Answers

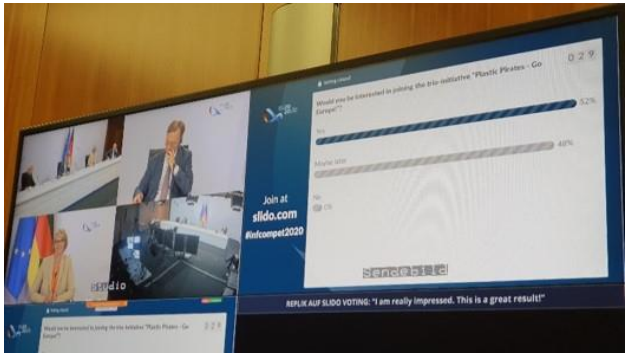
Genesis of the initiative and its Europeanization

Getting started and the Trio-Presidency: 2019 - 2020



Genesis of the initiative and its Europeanization

Building political consensus EU level: 2020-2021



Accompanying research of the Plastic Pirates initiative

Who we are

Prof. Dr. Joachim Wirth

Lab Head of Research on Learning and Instruction

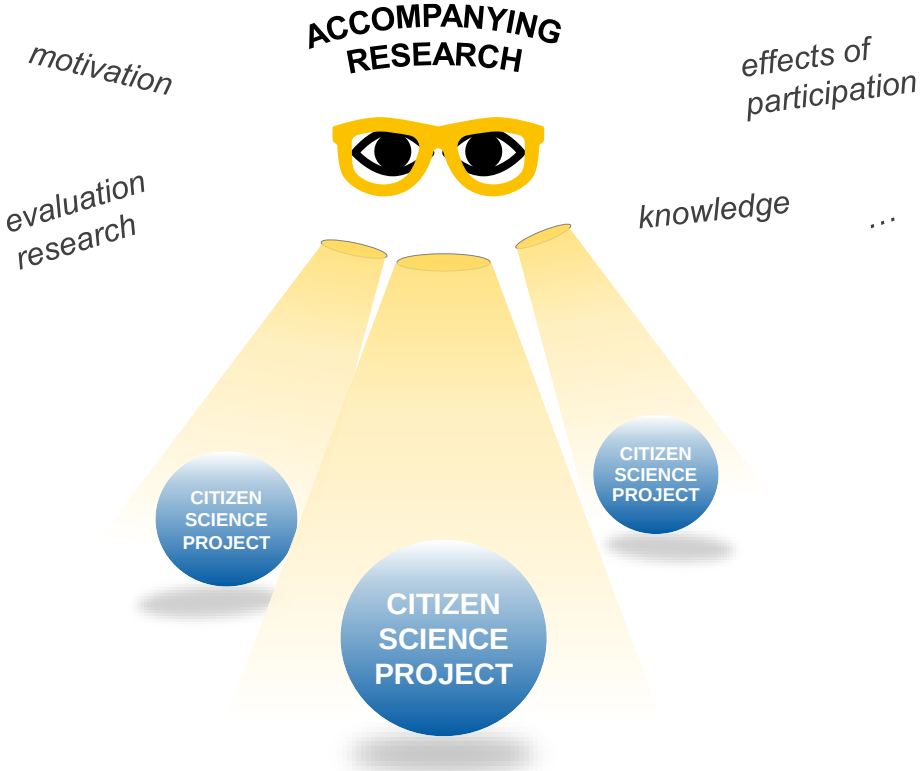
Vanessa van den Bogaert

M.Ed. Educational Science

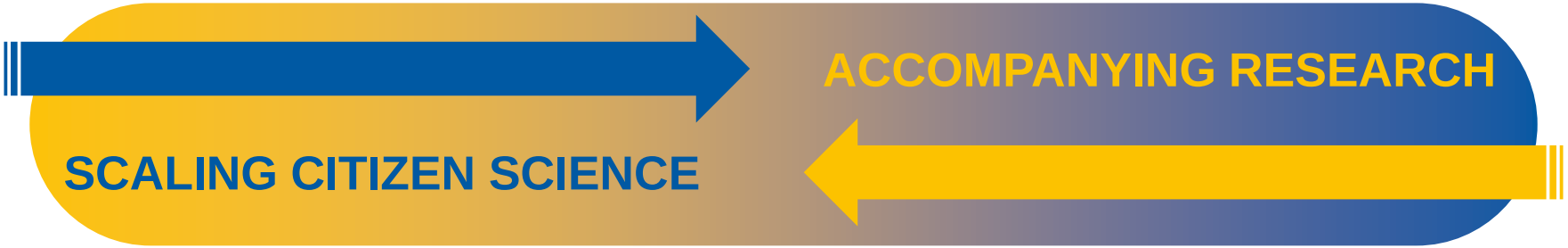
Valerie Knapp

M.A. Political Science

What is accompanying research?



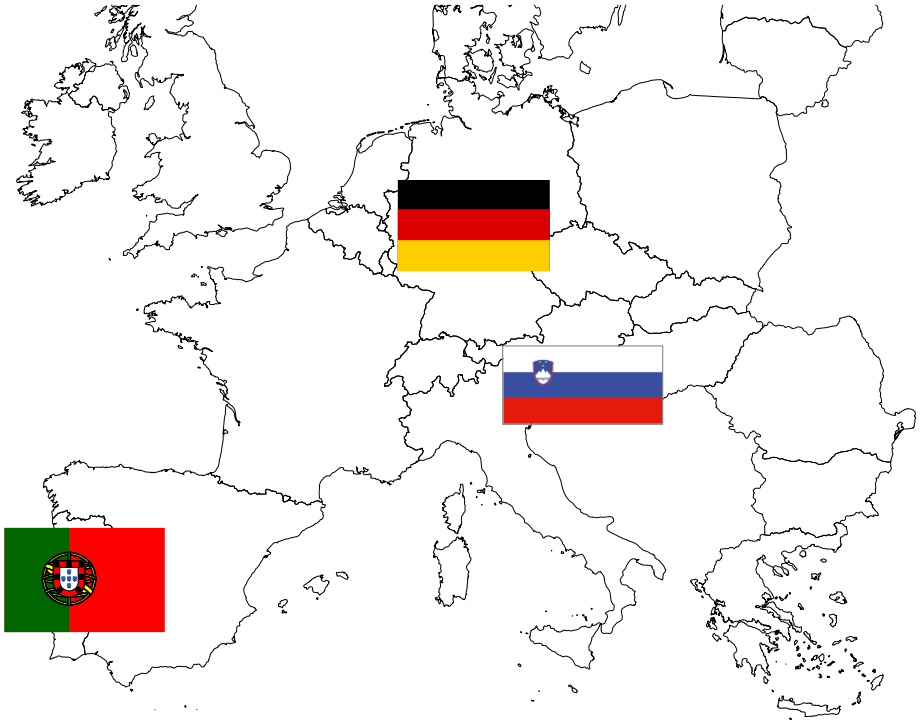
A dual perspective approach



The effects of scaling on accompanying research

The case of *Plastic Pirates – Go Europe!*

2020 - 2021



The effects of scaling on accompanying research

The case of *Plastic Pirates – Go Europe!*

large sample size → large-scale assessment → correlational research design

Teacher panel

Teachers as change agents …

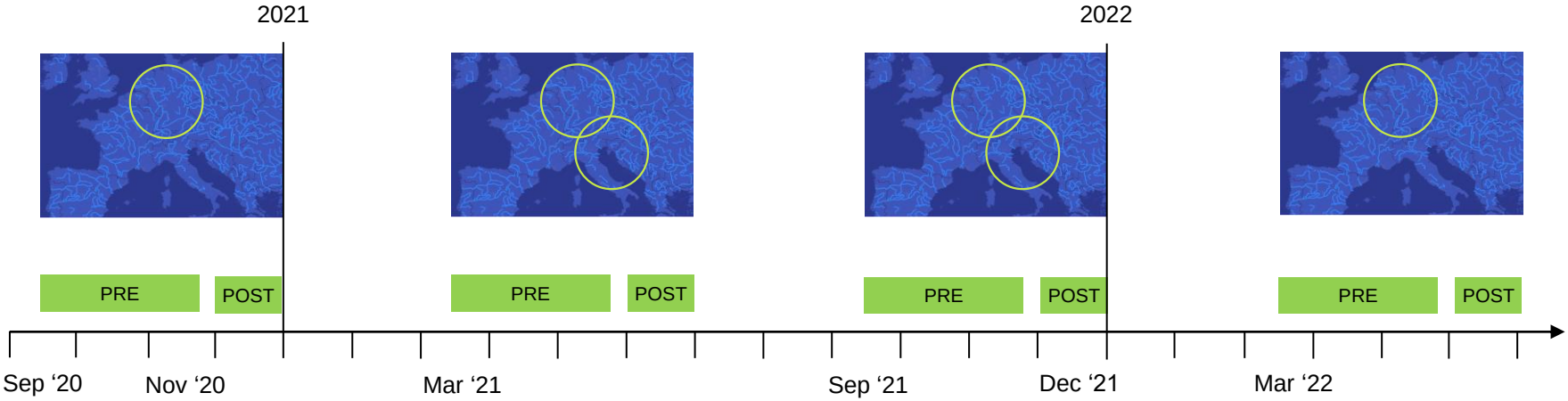
… possess the capacity or opportunity to successfully introduce innovations or perspectives

! but not all teachers are equal in their ability to mobilise new ways of working

→ which teachers are best able to encourage the implementation of citizen science projects in school contexts?

Large-scale assessments

Teacher survey (2020-2022)



Teacher panel

Demographic & professional information (n = 261)

	female	male	non-binary	n/a
gender	78.2%	20.7%	0.0%	1.1%

	mean	SD	minimum	maximum
age	44.38	9.8	24	69

	mean	SD	minimum	maximum
job experience in years	14.31	9.1	0	50

Teacher panel

Willingness to innovate, 4-point Likert scale (Emmrich 2009, n = 261)

1. I want to integrate new content into my work, even if it means more work.
2. Although it means more work, I want to apply new methods in my teaching practice.
3. I am willing to constantly change my work as a teacher.

	mean	SD	minimum	maximum
willlingness to innovate α =.77	3.48	.47	1	4

Teacher panel

Expected benefit of participation, 5-point Likert scale (Tappe 2018, n = 261)

1. I find the implementation of "Plastic Pirates - Go Europe!" in class generally useful.
2. I find the implementation of "Plastic Pirates - Go Europe!" in class effective in achieving specific learning objectives.
3. By implementing "Plastic Pirates - Go Europe!" in class, students become more productive.
4. Conducting "Plastic Pirates - Go Europe!" in class has a motivating function for students.
5. Through the implementation of "Plastic Pirates - Go Europe!" several competencies can be developed in class at the same time.

	mean	SD	minimum	maximum
expected benefit α =.86	4.36	.58	2.4	5

Teacher panel

- The majority of surveyed teachers is female.
- They are very heterogeneous in terms of their reported age and professional experience in years.
- On average, there is a high willingness to innovate among surveyed teachers.
- Overall, teachers surveyed expect to gain benefits from participating in the campaign.

The effects of scaling on accompanying research

The case of *Plastic Pirates – Go Europe!*

large sample size → large-scale assessment → correlational research design

BENEFITS

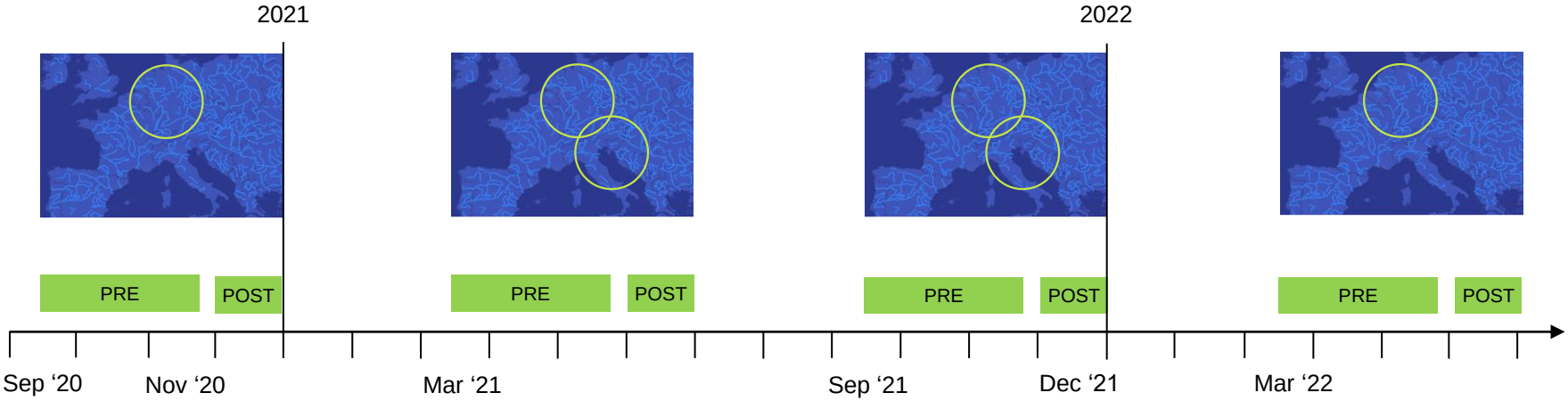
- large samples available
- allows for comparison

CHALLENGES

- causal designs not possible
- “one size does not fit all”

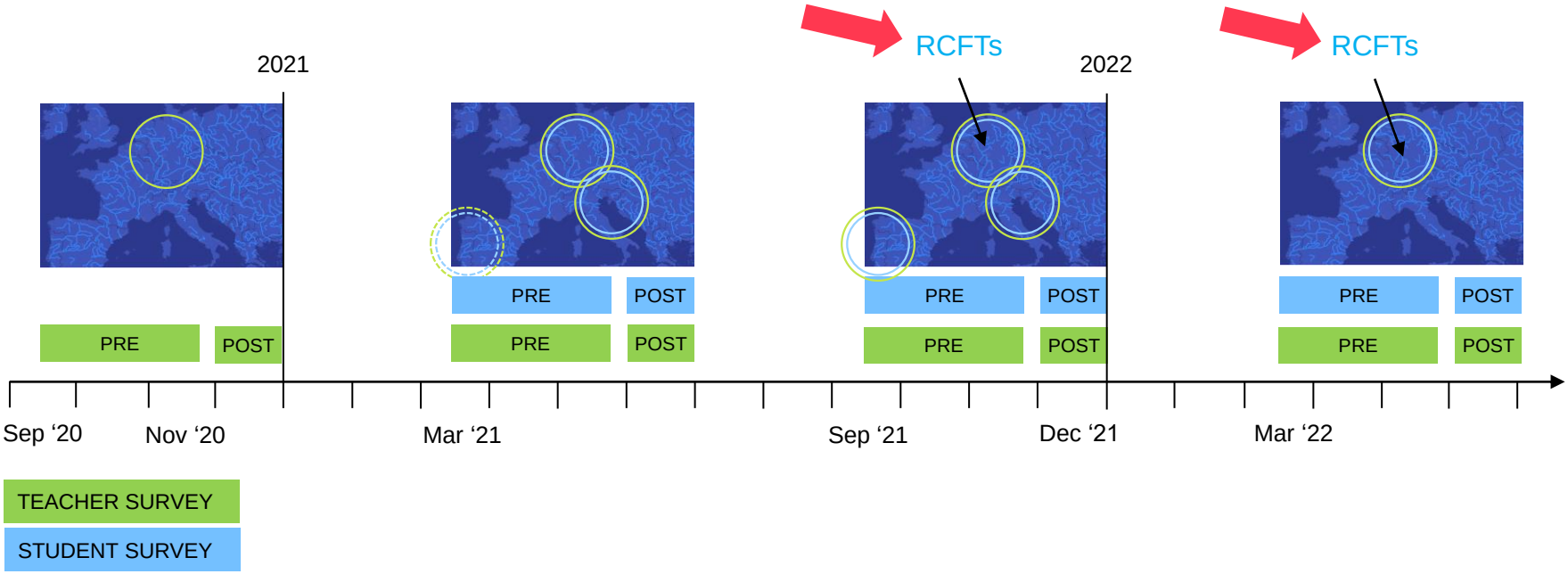
Large-scale assessments

Teacher survey (2020-2022)



Experimental research design

Student survey and randomized controlled field trials (2021-2022)



Experimental research design

Randomized controlled field trials (2021-2022)

Systematic variation of factor **PARTICIPATION**

Conscious participation *experimental group*

Description of the problem, teaching of methodological knowledge, hands-on activities, citizen science

Unknowing participation *control group*

Description of the problem, teaching of methodological knowledge, hands-on activities, ~~citizen science~~

Take aways

- There is a need for rigorous research designs to include causal evidence about citizen science.
- Accompanying research should be included in project planning from the beginning.
- The scaling of citizen science projects should be accompanied by the establishment of a European research-practice partnership.

References

Emmrich, R. (2009). Motivstrukturen von Lehrerinnen und Lehrern in Innovations- und Transferkontexten. Dokumentation der Erhebungsinstrumente (Skalenhandbuch). Berlin 2009, 48 S. - URN: urn:nbn:de:0111-pedocs-20834.
Available: https://www.pedocs.de/volltexte/2014/2083/pdf/Emmrich_Rico_Dokumentation_der_Erhebungsinstrumente.pdf (11/04/22).

Tappe, E.-H. (2018). Lernen durch Mediengestaltung - Entwicklung eines Konzeptes zur Unterstützung mediendidaktischer Lehre im Schulalltag. Available: https://www.fachportal-paedagogik.de/literatur/vollanzeige.html?FId=1146567#vollanzeige (11/04/22).

Europeanization of the Plastic Pirates initiative

Practical insights into the beginnings of the Europeanization of the Plastic Pirates initiative

EU Action in Horizon Europe Mission Ocean

Action

The PlasticPiratesEU action (30 months)

- Project that has received funding from the European Union's Horizon Europe research and innovation programme as part of the Mission Restore our Oceans and Waters by 2030
- Objectives are to:
  - **Europeanize** the Plastic Pirates – Go Europe initiative
  - More comprehensive **assessment and monitoring** plastic litter in Europe's rivers, **coasts and sea**
  - Contribute to the **Mission Restore our Ocean and Waters** and support the implementation and monitoring of EU policy objectives
  - **Raise awareness** among citizens on the impact and benefits of R&I in their daily lives
  - **Engage schoolchildren** and young people in research activities and connect to the European Year of Youth 2022

Context of Scaling-up

The devil lies in the details

- EU Action Call for upscaling
  - 27 EU countries + Associated countries
  - Marine Strategy Framework Directive, Water Framework Directive
  - Data also from coasts and seas
  - Connect to the European Year of the Youth in 2022

- Plastic Pirates project engages national educational systems (outreach)
  - Network with access to schools needed
  - Knowledge of the local educational system needed
  - Local Language

- Sustainability – Build self-sustaining Plastic Pirates campaigns in multiple countries

Our approach to upscaling

Scaling approach

1. Top-Down approach
2. Reaching-out to European Research Area Forum country representatives
3. Creating a Plastic Pirates Interest Group on ministerial/funding agency level
4. Setting-up a pilot phase for quick implementation
5. On recommendation: Inviting suitable institutions to join the pilot phase
6. Provide pilot funding for the pilot phase
7. Building a community of local partner institutions
8. Training of the trainers

- → Gather experiences from the different countries
- → Further develop/innovate the protocol

Europeanization of the Plastic Pirates initiative

Upscaling experiences

- Survey among local partners
  - In total, we received 11 response data sets from eight countries:
    BEL, AUT, BUL (2), ESP (3), HUN, LIT, POR, SLO

- General Assembly on 3rd November 2022:
  - Presentations of status quo update
  - Interactive session to identify three top success factors and challenges

Europeanization of the Plastic Pirates initiative

Success factors

- Relevance of the topic with global dimension
- Target group of young students
- Public attention
- Good preparation of countries by coordinators and close exchange between them and local partners
- An easy to follow protocol
- Material, website and (social) media presence already available
- Need for European-wide data that allows for more comparability
- Approaching teachers via ministry and create incentives for participation

Europeanization of the Plastic Pirates initiative

General Assembly: Success factors

Group 1	Group 2	Group 3
Material, website, social media presence already available	Public interest	Public interest
Target group	Material (webinar/handout), website, social media presence already available	Relevance of topic with global dimension
Relevance of topic with global dimension	Easy to follow protocol	Target group
Extensive experience from before the upscaling		Easy to follow protocol
		Webinars and a short handout with short instructions

Europeanization of the Plastic Pirates initiative

Survey: Challenges

- Tight timeframe
- Finding suitable dates for sampling activity with busy school classes
- River and weather conditions are different from those in Germany
  - high probability of floods in Spain → checking flow and weather forecast;
  - or non-existence of bridges → having the net hung from the shore;
  - or narrow rivers confined in canals in Belgium → be as flexible with the protocol as possible, while safeguarding the collection of quality data
- Material:
  - e.g. too much for teachers that do only want to make the sampling → created short guideline including what teachers have to do during sampling and organize in advance

Europeanization of the Plastic Pirates initiative

Survey: Challenges

- Communication with teachers → (updated) webinar instructions for teachers; online sessions with schools to explain well what to do
- Follow-up funding and sustainability
- Minor questions with regards to protocol → exchange with coordinators on them
- Bus transport (as schools themselves have to pay for them)
- Sampling material that is required besides the net is not always available → created a kit of materials (gloves e.g.)

Europeanization of the Plastic Pirates initiative

General Assembly: Challenges

Top-Challenges (all groups)

Group 1	Group 2	Group 3
Time consuming, (Social) Media Outreach	Tight timeframe	Different river and weather conditions (from those in GER)
Tight timeframe	Correct implementation of protocol	Finding suitable sampling dates with busy school classes
Organising data upload	Costs for transportation	Follow-up funding and sustainability
	Larger rivers (comparability)	

Europeanization of the Plastic Pirates initiative

Alignment with social and educational values in the countries

- Keywords that are named to underline the general agreement to alignment: strengthens ocean literacy, communication between scientists and students, digital accessibility, involving citizens in problem solving of global challenges
- Minor limitations that are named:
  - Limited inclusion
  - biased regarding participating schools
  - Language restrictions in multilingual countries
  - Digitalization/smart phone

Questions?

European Commission

#HorizonEU

HORIZON EUROPE POLICY SUPPORT FACILITY

2021 – 2027

ANTONELLA RADICCHI, PhD

MLE CSI-PP Topic 5 Scaling up citizen science

Berlin, 7-8 November 2022

Research and Innovation

Working session #3

European Commission

Suggested foci of the working sessions

WORKING SESSION #1
Definition/s & Dimensions

- Guiding open questions
- Potential outcome/s: **a shared definition** of upscaling & its dimensions for the MLE CSI-PP

WORKING SESSION #2
Drivers, Success Factors & Challenges

- Guiding open questions
- Potential outcome/s: list of **assessment criteria** for funding projects to upscale

WORKING SESSION #3
Policy-oriented recommendations

- Guiding open questions
- Potential outcome/s: **a roadmap** for the creation of **policies, programmes, funding lines**

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Uptake for policymakers: open questions

#3 – Scaling up CS: A Roadmap for policymakers
• Where does the innovation lie for CS today[46]?
• What criteria can be applied by policymakers for measuring impact/proof of value of CS projects and initiatives?
• What criteria can be applied by policymakers for selecting CS projects to up-scale transnationally?
• What kind of funding mechanisms can be developed by policymakers for supporting the upscale of CS projects and initiatives?
• Are the EU cascading grants mechanism replicable at the local/regional/national level?
• How can policymakers support CS practitioners/scientists to develop alternative business models for upscaling and sustaining CS projects and initiatives?

(Source: Discussion Paper page 29)

European Commission

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HORIZON EUROPE POLICY SUPPORT FACILITY

2021 – 2027

FINAL REPORT

MARGARET GOLD, Citizen Science Lab, Leiden University

Research and Innovation

What job does the Final Report need to do?

European Commission

DRAFT TABLE OF CONTENTS

Summary of the MLE on Citizen Science

Overarching Recommendations

Recommendations from the Topical Themes / Reports

- Topic 1 - Introduction and overview of CS
- Topic 2 - Ensuring Good Practices and Impacts
- Topic 3 - Maximising the relevance and excellence of CS
- Topic 4 - Enabling environments and sustaining CS
- Topic 5 - Scaling up CS

Roadmap for Implementing National Enabling Factors for CS

Conclusions

Overarching Recomendations

European Commission

STRATEGIC INVESTMENT TO:

Consolidate and develop the vast practical experience across the full range of societal engagement practices within the local research community, and share these to raise awareness and achieve wider acceptance of CS methods;

Build Capacity for the acquisition of skills and expertise, the further development of best practice and innovative new applications, and dedicated support for CS practices;

Foster greater and enhanced cooperation, synergies and crosspollinisation of practitioners among and between the Citizen Science, Open Science and Public Engagement communities, and between different stakeholders across the Quadruple Helix, and

Provide supporting infrastructures, including research support, technical infrastructures and community networks for both top-down and bottom-up participatory research collaborations.

STRATEGIC AIMS:

1. Embedding Citizen Science as part of mainstream research, funding, education and innovation processes at the national level, with dedicated funding programmes and policy instruments that can serve to support and sustain Citizen Science initiatives at all scales in all domains of knowledge production.

2. Integrating Citizen Science Data into mainstream processes for research, policy making and decision making nationally and regionally, with interactions between researchers and societal stakeholders (government, industry and citizens) made as easy and efficient as possible.

European Commission

STRATEGIC AIMS:

3. Supporting Citizen Science Practices such that a wide range of different actors have been identified and engaged, their needs addressed in context, and training, skills development and knowledge exchange have been facilitated and implemented, a central online repository of consolidated research and best practice is widely available, and the development of new resources is supported.

4. Supporting Citizen Science Networks and enabling an active national community of Citizen Science practitioners to collaborate closely with other key stakeholders for Research and Innovation, such that knowledge exchange is facilitated, transdisciplinary collaboration are enabled, the further development of best practice and new innovations is supported, new multi-stakeholder initiatives can be formed across a wide range of domains.

5. Making Citizen Science Inclusive so that all stakeholders in the outcomes of scientific research and innovation have clear pathways to participate in open and collaborative processes of scientific knowledge creation, evaluation, and communication to the benefit of society and its members, in all domains of research.

Roadmap for Implementing National Enabling Factors

~~Roadmap for Open Science Implementation~~

Map	Identify key stakeholders and Open Science champions
Plan	Devise national strategy through consultation with stakeholders
Incentivize	Change reward system to incentivize all aspects of Open Science
Promote	Encourage critical and informed thinking
Support	Participate in international initiatives
Implement	Implement strategy, starting from Open Access
Monitor	Monitor and tackle emerging issues as they arise

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2021 – 2027

ANTONELLA RADICCHI, PhD

MLE CSI-PP Topic 5 Scaling up citizen science

Berlin, 7-8 November 2022

Research and Innovation

Reflective Interactive Exercise – Part II

Impact of the MLE CSI-PP

GUIDING QUESTIONS

- What have you learnt from the MLE?
- What actions have been taken so far or planned?

ADDRESSING EACH OF THE MLE CSI-PP TOPICS

T2. Ensuring good practices and impacts

T3. Maximising the relevance and excellence of citizen science

T4. Enabling environments for supporting and sustaining citizen science

T5. Scaling up citizen science

Impact of the MLE CSI-PP

example!

(country), Tx (learning): What have you learnt from the MLE according to topic x?

(country), Tx (action): What actions have been taken so far or planned according to topic x?

TOPICS

T2. Ensuring good practices and impacts

T3. Maximising the relevance and excellence of citizen science

T4. Enabling environments for supporting and sustaining citizen science

T5. Scaling up citizen science

Thank you!

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