



Co-designing Citizen Social Science for Collective Action

## D7.4

# Final Impact Assessment Report

Evaluation results, overall impact assessment and final reflections on co-evaluation



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## List of Abbreviations

**CS** Citizen Science

**CSO** Civil Society Organisation

**CSS** Citizen Social Science

**FARN** Environment and Natural Resources Foundation

**FSMC** Catalonia Mental Health Federation

**KC** Knowledge Coalition

**KPIs** Key Performance Indicators

**NGO** Non-Governmental Organisation

**OA** Open Access

**OS** Open Science

**UB** University of Barcelona

**UNIVIE** University of Vienna

**UNSAM** National University of General San Martín

**WoC** Women of Colour

**WoT** Women on Top



## 1 Executive Summary

The aim of the evaluation and impact assessment activities in the CoAct project has been twofold. On the one hand, a process-oriented view should help to reflect on how the participatory research process is implemented across all relevant stakeholders and what can be learned and adapted from the collected feedback and insights. This *formative evaluation* led to insights on the Citizen Social Science (CSS) co-research process as well as drivers and challenges for participation. Concrete findings were discussed on a regular basis in the project consortium and documented in detail in D7.2 Interim Impact Assessment Report (Kieslinger et al. 2021).

On the other hand, the impact assessment activities – or *summative evaluation* – are aimed at bringing evidence of the impact of the project’s Citizen Social Science activities in a collaborative and participatory manner. This entails impacts on the involved actors (such as Co-Researchers, citizen scientists, Knowledge Coalition members, and professional researchers), their socio-cultural contexts, and the scientific discourse at large. This document focuses on exactly this summative evaluation, and thus the impact achieved during the project and beyond.

From the onset, we chose to make the evaluation and impact assessment process an integrated part of the research by implementing a co-evaluation approach, which is a form of participatory evaluation that initiates the conversation on expectations, objectives, and impact already at the start of the project. After three years of implementing co-evaluation in Citizen Social science activities, this participatory methodology has shown its benefits but also its challenges. It clearly helped in establishing trustful relationships across the actors and in adapting the engagement options to the needs of the engaged stakeholders. However, co-evaluation is also very time-consuming for everyone involved. Thus, it is important to balance the engagement and integrate co-evaluation activities naturally in the participatory research process as far as possible. The learning from the co-evaluation process in CoaAct and the resulting Whitepaper on Co-evaluation of Citizen Social Science (Kieslinger et al. 2022) has already sparked interest in the wider Citizen Science community and will hopefully contribute further to advancing participatory evaluation processes.

The concrete insights and achieved impacts of the CoAct R&I Actions are manifold. In this document, we lay them out in the form of impact stories. As the actions were all addressing different social issues and were set in very different contextual settings, their impact is likewise affecting different policy areas. However, we have also found a number of overarching effects in our cross-case analysis. Most importantly, given the transformative character of Citizen Social



Science activities, we have noted evidence for transformative change, policy influence, the establishment of new collaborations, a strengthened science-policy-society interaction, collective empowerment, an increased awareness for the respective social concerns and for Citizen Social Science in general, as well as new educational perspectives.

In addition, we have also noted important impacts on the side of the participating actors, such as learning outcomes, increased awareness, ownership and empowerment, as well as the personal benefits stemming from new connections and being part of networks and groups with similar concerns.

Finally, at the scientific level, the CoAct project clearly contributed to the generation of new research-knowledge that could not have been answered without citizen participation. It also increased the overall visibility of Citizen Social Science and brought forward methodological advances as well as new collaborations for the engaged organisations.





## 2 Introduction

### 2.1 Purpose of the Document

This document summarises the evaluation and impact assessment of the CoAct project. It focuses on the final impact and potential future impact pathways detected in the course of implementing the project's Citizen Social Science (CSS) activities. This document builds on previous deliverables of work package 7, namely Deliverable D7.1 (Schäfer et al. 2020), which describes the theoretical framework of the co-evaluation and impact assessment approach, as well as the overall methodological approach and main instruments. In Deliverable D7.2 (Kieslinger et al. 2021), interim insights were presented, with a special focus on the implementation process of co-evaluation practices. The experiences of the participatory evaluation approach were also summarised in D7.3 Whitepaper on Co-Evaluation in Citizen Social Science (Kieslinger et al. 2022). Finally, this deliverable builds on the previous insights and gives a comprehensive overview of the achievements of each of the CoAct R&I Actions as well as an analysis across the various actions and activities, including some important general findings of what CSS practices can achieve and what common challenges we identified.

### 2.2 Structure of the Document

This deliverable is structured along the following parts:

- Summary of the co-evaluation approach, applied methods, and main learnings on a methodological level
- Impact stories from the various CoAct R&I Actions
- The overarching CoAct impact including cross-case learnings and KPIs (qualitative and quantitative set of indicators)
- Capacity beyond the project and how we have been engaging with stakeholders beyond the project
- Summary and conclusions



### 3 Co-Evaluation in CoAct

#### 3.1 Methodological Approach

This section summarises the overall CoAct co-evaluation approach and how it has been implemented across the R&I Actions. A detailed presentation of the original evaluation and impact assessment plan can be found in Deliverable D7.1 (Schäfer et al. 2020).

For the initial design of the evaluation and impact assessment strategy, the Citizen Science Evaluation Framework (Kieslinger et al., 2018; see Fig. 1) served as an important baseline. The framework was useful for self-assessment and reflection sessions with the R&I Actions, for the formative evaluation and interim data analysis – which mostly had a process-base view – as well as for the co-created quantitative KPIs, which have been structured along the three dimensions of science, participants, and socio-ecology and economy.

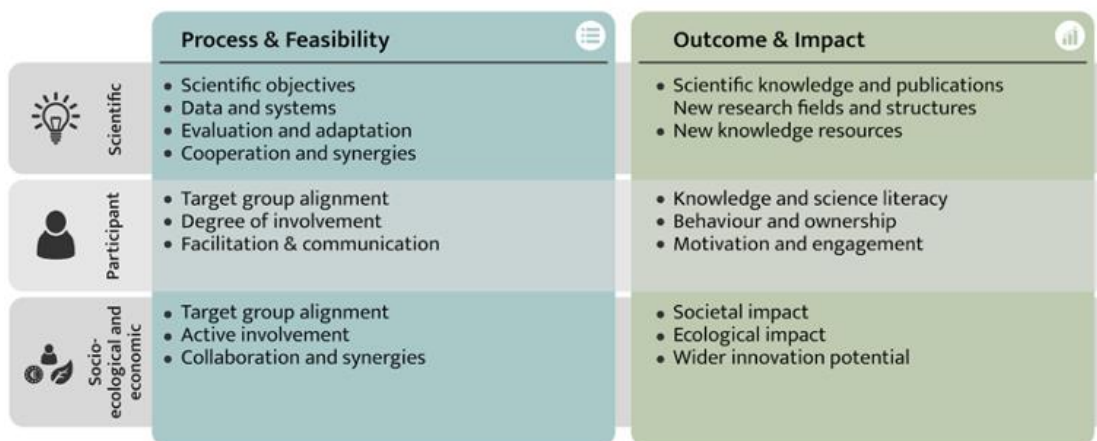


Figure 1: Citizen Science Evaluation Framework by Kieslinger et al., 2018

In the course of our participatory approach to evaluation, we adapted the original framework (Fig.1) and its associated self-assessment questionnaire. The adaptation of the framework towards Citizen Social Science projects helped us further define and clarify certain evaluation criteria and challenges (Kieslinger et. al 2022). It brought forward a set of co-evaluation criteria for Citizen Social Science case actions (Fig 2).



	Process and Feasibility	Outcome and Impact	Challenges
Scientific Process	<ul style="list-style-type: none"> <li>Participant commitment to scientific objectives</li> <li>Engagement options in times of a global pandemic</li> <li>Transdisciplinary cooperation</li> </ul>	<ul style="list-style-type: none"> <li>Knowledge production and sharing (incl. publications, conferences, etc.)</li> </ul>	<ul style="list-style-type: none"> <li>Blurred lines of different objectives</li> <li>Science offers methods more than topics</li> <li>Scientific questions need to be secondary to social issues</li> </ul>
Actors and their roles	<ul style="list-style-type: none"> <li>Ownership of problem and process</li> <li>Flexible roles and functions of actors in the research process</li> </ul>	<ul style="list-style-type: none"> <li>Ownership of results and dissemination</li> <li>Self-experience in different roles</li> <li>Experience of personal effects</li> </ul>	<ul style="list-style-type: none"> <li>Resources, temporalities and situated participation</li> <li>Institutional role pressures</li> <li>Dynamics and complexity of the process through shifting roles</li> <li>Feelings of “being evaluated”</li> <li>Interest and expectation management</li> </ul>
Socio-political	<ul style="list-style-type: none"> <li>Capacity building and inclusion</li> </ul>	<ul style="list-style-type: none"> <li>Empowerment by increasing visibility and awareness, also for policy makers</li> <li>Community building and networking</li> </ul>	<ul style="list-style-type: none"> <li>Connecting to policy makers</li> <li>Evaluation of diverse communication and visibility activities</li> <li>Translatory capacity</li> </ul>

Figure 2: Co-evaluation criteria for Citizen Social Science case actions (Kieslinger et al. 2022)

Guided by these overarching frameworks, we applied a set of methodological tools during the co-evaluation process. Next to standard instruments in social sciences, such as interviews or surveys, the following are the most relevant tools that we specifically adapted to the needs of CSS projects. These tools are also included in the [methodological toolkit of CoAct](#).

### 3.1.1 Logic Model

Although coming mainly from developmental programme design and evaluation, the logic framework approach or logic model has been widely adopted and used for evaluating scientific programmes, technology deployment programmes and more recently also research projects. It is mainly used as an instrument for objective-oriented planning of (large-scale) projects. However, the logic model can also be applied for systematic analysis, implementation, monitoring and evaluation of development and intervention projects of various kinds (Örtengren, 2004). It is thus an approach that can be used throughout the project management cycle.



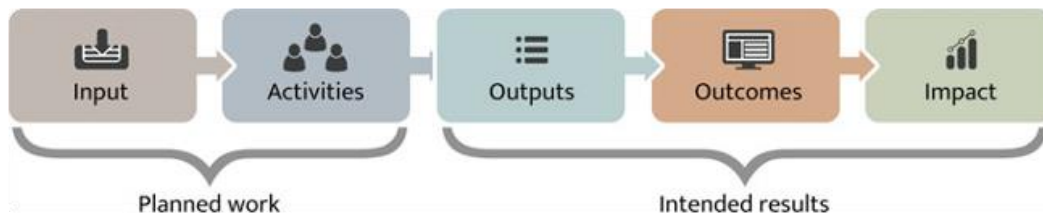


Figure 3: Logic model for evaluation and impact assessment (from Schäfer et al. 2021)

The ZSI has previously adapted the logic model for the evaluation and impact assessment of international research and innovation projects and programmes. The model and its adaptations have proven to be a useful instrument to structure and support the dialogue and exchange between all parties involved. It can help to identify problems early on and adapt them accordingly, it can clarify the project’s objectives and make them more concrete, specify and adapt the activities, create a joint approach to the project, and make implementation more efficient.

In the context of CoAct, the logic model served the evaluation team as an important working tool to structure the impact indicators on an output, outcome and impact level, and to reflect on the input and core activities contributing to these expected impacts.

### 3.1.2 Citizen Social Science Roadmaps

The Citizen Social Science project roadmap depicts the different phases of a project and defines for each of the phases the stakeholders involved, the activities planned, and the co-evaluation tasks to be undertaken. As Citizen Social Science is an approach that demands a lot of flexibility, the CSS project roadmap is a highly flexible tool that must continuously be updated. As such, it is best implemented in a mutable way.

	02/2020-04/2020	04/2020-01/2021	01/2021-12/2021	07/2021-12/2021	01/2022-06/2022	06/2022-12/2022
Project Phase	Creation of knowledge base	Building of Knowledge Coalition	Research Co-Design	Conducting Research	Data analysis, results interpretation	Transformation of results into action
Stakeholders Involved						
Activities						
Co-evaluation tasks						

Figure 4: Citizen Social Science project roadmap



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The project roadmap helps different project actors continuously and iteratively plan their project activities and align them with concrete co-evaluation activities. It is especially helpful in cases where different organisations or a larger group of actors collaborate in the evaluation of a project. As the project roadmap functions as a project management tool, it should be maintained by people with management responsibility. However, the concrete contents, tasks and activities should be co-designed with Co-Researchers as far as possible. Because the project roadmap is a tool for organising and keeping an overview of a process, it is best employed from the very beginning and updated regularly to document any changes in the implementation process.

### 3.1.3 Citizen Social Science Impact House

The impact house is a tool that supports a group to define common foci for co-evaluation and collective impact assessment. We adapted a former version from Nyangala Zolho, The Innovation Growth Lab, for the specific needs of Citizen Social Science projects.

The method can be employed with a large scope to help structure the entire evaluation process at the beginning of a project in a participatory way. It can also be employed at a smaller scale to choose specific activities and outcomes to evaluate in a participatory way. This is especially helpful if there are limited time and resources available within a project.

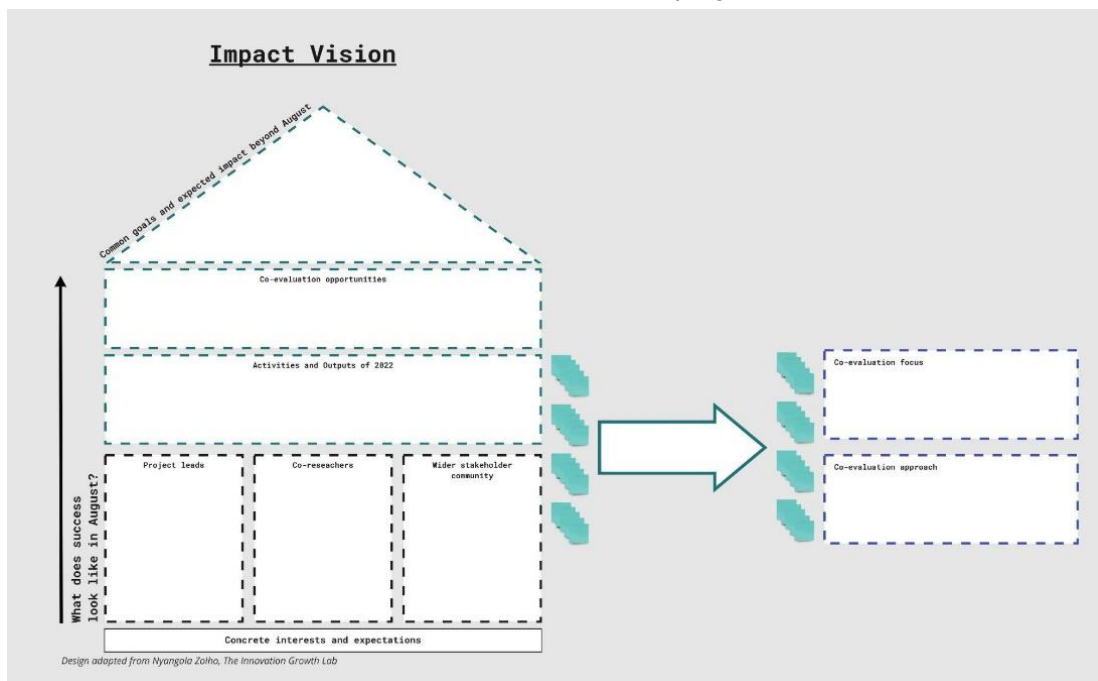


Figure 5: Citizen social science impact house



Furthermore, the impact house can support both formative and summative evaluation efforts. Therefore, it can be used as a tool to decide on project outcomes and longer-term impacts, and how these would be measured at any point in the implementation of the project. It furthermore can be used as a tool in the evaluation of the project process and thus support the smooth implementation of a project with many different stakeholder interests.

In any case, the impact house helps to define a common impact vision as a group, and decide how to measure and make measurable the effects of project activities.

### 3.1.4 Citizen Social Science Self-Assessment Survey

The Citizen Social Science self-assessment survey was designed specifically for Citizen Social Science projects and adapted from the self-assessment questionnaire for Citizen Science projects by Kieslinger et al. (2018). It is intended as a self-reflection tool for CSS projects and is best filled in the course of a group conversation. In the context of CoAct, all three core R&I Actions performed the self-assessment twice: once midterm and once at the end of the funding period. The gender-equality case actions of WP6 were offered to apply the self-assessment in the beginning as a planning instrument and where then jointly applying it with the evaluation team in reflective self-assessment sessions. The survey triggers reflection by jointly rating a series of statements that relate to three main areas: 1) the scientific process, 2) citizens & engaged actors and 3) socio-ecological aspects. In each of these three areas, statements focus on the perceived process of implementation as well as expected outcomes and impacts, and are rated on a Likert scale from 0 ("not at all") to 7 ("fully").

The aim of the self-assessment survey is to trigger a reflection on the process of implementing Citizen Social Science activities as well as on its impacts across the involved stakeholders. It can be undertaken at the beginning, during and towards/after the end of a project. Thus, it may help adjust a project's trajectory during its runtime and evaluate its impact after its activities have largely been implemented. When used at a very early stage, it can also support the planning and alignment of project activities and goals.

Ideally, the self-assessment survey is undertaken by a mixed group of involved stakeholders, including professional researchers, Co-Researchers, and possibly even members of otherwise involved stakeholder communities. As the content of the survey refers to all of these stakeholder groups, the negotiation process between these actors is highly valuable to the assessment of the project at hand.



A version of the self-assessment survey can be found on Zenodo under the following link:  
<https://www.doi.org/10.5281/zenodo.7456796>

### 3.2 Co-Evaluation Principles

Co-evaluation is designed as a transformative evaluation method that includes co-creation methods to learn about a situation and find solutions to problems. It focuses on stakeholder benefits and has a strong emphasis on marginalized perspectives. It is a reflective learning process that involves participants in evaluative decision-making, and adapts methods to situative contexts. Co-evaluation uses collective discussions, learning, and critical reflection, and can include various empirical data gathering methods.

In the course of implementing CoAct, it soon became clear that we could not pre-plan any fixed methods due to the complexity of the process and the situational flexibility. Rather, the respective adaptation to the needs of the CoAct R&I Actions required a framework of principles to which the evaluation could be aligned. In contrast to pre-defined evaluation processes, this principles-based approach allows for the involvement of research participants in the evaluation design and considers collaborative decision-making structures. The 6 co-evaluation principles listed below were derived from experiences in a collaborative research project involving local research teams, citizens, stakeholders, and academic researchers<sup>1</sup>. The principles (Fig.6) are considered useful guidance for complex projects involving multiple actors and requiring flexibility and adaptation.



Figure 6: CoAct principles of co-evaluation

<sup>1</sup> The principles were openly presented for public consultation in summer 2022 to gather additional experiences and expertise, and to encourage discussion. Around 50 individuals contributed to shaping the principles.



01. **Responsible Planning:** Co-evaluation requires careful timing to assess and value project processes and outcomes in a participatory way. Responsible planning involves carefully considering when and how to conduct the co-evaluation in the research process.
02. **Participant Ownership:** Ownership for evaluation processes should be taken gradually by project participants. It should lead to a shift from individual expectations of participants towards a more collective and strengthened view on expected project outcomes.
03. **Inclusivity & Responsiveness:** Co-evaluation should offer inclusive communication structures for participants to safely express themselves and empower marginalised perspectives.
04. **Flexibility & Reflexivity:** Co-evaluation is a flexible process in which participants negotiate evaluation instruments, analyse data, and discuss results adapted to the project needs. These results and further feedback are openly discussed and regularly revisited in a reflexive process.
05. **Openness & Transparency:** In line with the open science paradigm, co-evaluation should be made accessible and transparent to all participants and the public whenever possible and ethical.
06. **Transformative Perspective:** Producing actionable results is the main aim of co-evaluation. It thus cannot be a neutral observation by external evaluators. The focus is on identifying lessons learned and potential opportunities for transformation, both for individuals and society as a whole in a collaborative way.

These principles can help Citizen (Social) Science practitioners find practical solutions to challenges and create frameworks for learning through co-evaluation, to balance the scientific quality and social accountability of Citizen (Social) Science projects. They are also helpful to support a co-evaluation used to qualitatively enrich an evaluation based on predefined indicators. The principles are described in further detail in the Whitepaper on Co-Evaluation of Citizen Social Science (Kieslinger et al. 2022), where each principle is accompanied by concrete recommendations, followed by a list of proposed actions for implementers, research policy makers and funders.





### 3.3 Impact Stories

There are various approaches on how the impact of a programme, project or a specific intervention can be depicted. While impact is still often associated with numbers and interpreted in quantitative terms, there are also qualitative approaches towards impact telling. In transformative social research, such as Citizen Social Science, compelling stories about how the research has led to changes in or benefits to certain communities, or society at large, are a great way to present impact.

As previously stated, the logic model helped structure the KPIs for each of the CoAct R&I Actions. Following a co-evaluation approach, the qualitative KPIs were jointly defined with each action's stakeholders and reflected at various times during the implementation of the action. Next to these qualitative and quantitative KPIs, the logic model also offers an appropriate structure for narrative impact stories (see Fig. 7).

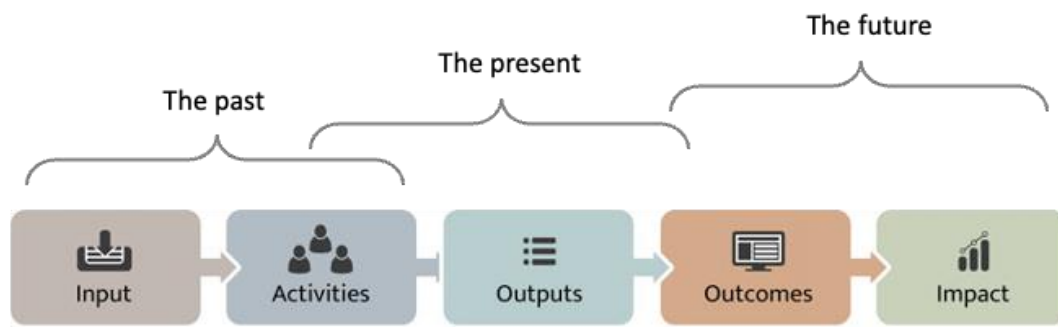


Figure 7: Logic model guide for Impact stories

Our CoAct impact stories are thus arranged along the following structure, preceded by a very condensed summary and complemented by reflections on internal and external factors that influenced the R&I Action:

- **The Past:** How the initiative started, what contributed to its development and what the main objectives were when starting the CoAct journey.
- **The Present:** Reflections on the ongoing progress of the project applying mostly a process view, and current results.
- **Future:** Expected future impact, especially policy impact, expected long-term impact, and any future planned activities; all based on the available data evidence collected during the three years of the CoAct project.



## 4 CoAct R&I Action Impact Stories

In the CoAct participatory research process, citizens act as Co-Researchers and are recognised as competent in-the-field experts. Multi-stakeholder collaborations have formed Knowledge Coalitions (KCs) to enable the provision of socially robust scientific knowledge to promote social change. Thus, the following impact stories will use these terminologies when referring to these groups of actors.



Figure 8: Citizen Social Science in Action

### 4.1 Mental Healthcare, Barcelona

The Mental Healthcare R&I Action positively impacted the lives of participating Co-Researchers, namely persons with mental health issues and their families. A better understanding of Citizen Science processes, the feeling of being heard and accepted, increased self-determination, and an increased awareness of the importance of social networks have been achieved. The scientific impact is manifested in new methodological insights into Citizen Social Science and Open Science, such as collective data analysis, new tools and open data, as well as personal gains on the side of the researchers, such as improved participatory research skills, publications, and recognition. At societal level, an increased awareness for the topic of social support networks in mental health has been achieved and the concrete policy recommendations will be transformed into improved support services for mental healthcare.



### 4.1.1 The Past

In 2015, over 1 million people visited primary care services for mental disorders in Catalonia alone, a Spanish region with approximately 7.6 million people in total. We assume that these figures proportionally apply to other European regions as well. With the pandemic, the number and care needs of persons with mental health issues has further increased. The Catalonia Mental Health Federation (FSMC) with more than 70 associated organisations identified the need for a more person-driven approach towards defining support services that positioned the individual's life experience and self-perception to take centre stage.

In 2017, the Federation teamed up with researchers from the Open Systems group at the University of Barcelona (UB), who already had experience in citizen engagement activities, and a first version of the CoAct Mental Healthcare R&I Action was born. With the start of the CoAct project in 2020 the cooperation had already intensified, and additional key stakeholders were brought on board, including associations and entities representing the interests of persons with lived experiences in mental health and their families, professional healthcare providers and other social activists, as well as governmental representatives at local, regional and national level. Involving these institutions early in the process as part of the Knowledge Coalition has been an important factor for the later uptake and translation of the project results into concrete actions. The second group of key stakeholders, the Co-Researchers made up of persons with lived experiences of mental illness and their families, was brought into the process very early on as well. This had equally positive effects, as they took ownership of project objectives and achieved other personal gains, such as increased self-assurance and increased scientific skills.

The 3-years implementation of the R&I Action was strongly influenced by the COVID-19 pandemic, which required a highly flexible management of the participatory activities and largely reduced stakeholder interaction to virtual encounters. During the (mostly) formative evaluation of the participatory process, we identified a number of key factors contributing to the impact of this action, as described in detail in Kieslinger et al. (2021) and Kieslinger et al. (2022). Above all, these are the creation of empathy and trustful relationships as well as the flexibility to allow stakeholders to grow and develop their assigned roles, among other benefits. The personal Co-Researchers' journeys have also been nicely visualised by [Harrison \(2022\)](#).



### 4.1.2 The Present

At the end of the CoAct journey, the collaborative research group in Barcelona – consisting of Co-Researchers, facilitators, scientists from different disciplines and representatives of organisations dealing with mental healthcare services – achieved measurable impact at various levels and for various stakeholders. We could already identify an increase in awareness, knowledge, and skills amongst all engaged stakeholders, especially the Co-Researchers and professional scientists, as well as a strong rooting of the actions in concrete social issues (Kieslinger et al. 2021). Personal development, learning and feeling empowered have been stressed as important benefits by Co-Researchers. During the engagement with peers, they achieved a better understanding of not being alone with their problems, while also developing greater appreciation of other actors in their care networks, such as family members and healthcare providers.

*"I am a truly lucky person to participate in this project, I have been greatly empowered as we travelled the journey together, I have grown as a person, I have learned, I also had a bad time sometimes, but you know at all times I have been excited because I was fighting to change lives, to improve the lives of all of us, the mentally ill, family members, doctors, caregivers and most of all people, without leaving anyone behind. Because we all have to get involved more and more with mental health, hand in hand, specifically with the social support networks that exist, making them known and creating many more. That is my dream."* Co-Researcher testimony (translated)

Key elements that contributed to achieving these impacts at personal level are empathy, trust, and open and transparent expectation management from the very beginning and continuing throughout the entire participatory research process.

Empowerment has not only been noted at individual level, as the participatory process of CoAct also strengthened the collective capacity of persons dealing with mental health issues. The project activities reinforced Co-Researchers' collective understanding and brought them together as a group, at least for those who participated throughout the project. While Co-Researchers did not know each other at the start of the project, they now keep in contact via a WhatsApp group.

At the end of the project, we also notice a reinforcement of networks and established connections at organisational level. New collaborations with other research departments or institutions and other NGOs in the field of mental health emerged and the project partners were able to strengthen their ties with public health authorities as well. At the level of the Knowledge Coalition, the



observable impact remained largely local or regional. The R&I Action contributed to creating more awareness across members at regional policy level. Overall, the expectations about national impact have not been fulfilled and the Knowledge Coalition was losing interest of some participants over time. This fact seems to be highly influenced by the specific administrative structures of field, as health policies are dealt with at regional level in Catalonia.

At the scientific level, collaborative research brought forward experiences with new research methods and tools, such as collective data analysis and the gamification of data interpretation, the use of a chatbot for data collection, as well as learnings from implementing participatory processes. All these learnings contribute to the transferability of results. We have already noted the interest of other research groups to build on these experiences and start new research collaborations, either in the area of mental health or in applying Citizen Social Science methods in other contexts. In terms of reusability and impact of results, the generated open data also plays an important role. Interest in the data has been expressed by various bodies already, including local health authorities, as available mental health data is scarce and limited.

When looking at the final self-assessment, we see a slight shift in the impact scores compared to the mid-term assessment (Fig 5). As can be expected, the overall scores for impact have increased, especially at the scientific level, and at the level of participating actors. However, we also see that the socio-political impact has great potential according to the core project team, made up by UB and FSMC. Because policy change is a long-term process, this impact area has not achieved yet 100%, but we received unambiguous confirmation from the public-bodies side that there is commitment to change – even if it takes time. Clearly, such impact expectations would need to be followed up and assessed in a longer timeframe, which is often not possible in project settings such as ours.

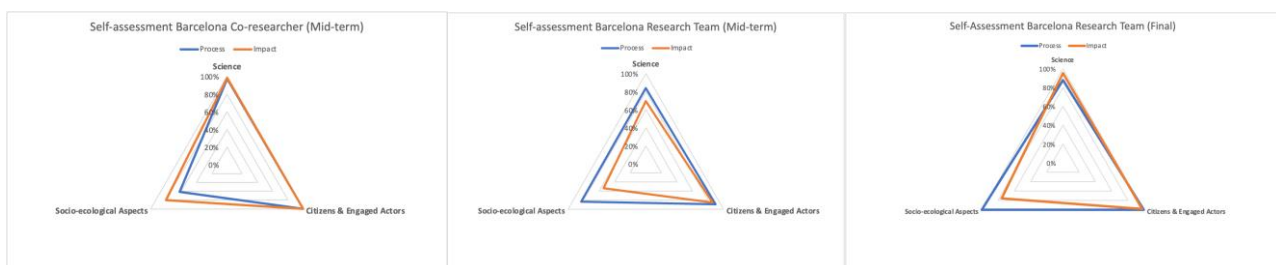


Figure 9: Self-assessment Barcelona mid-term (Co-Researchers and research team) and final (research team)

During the implementation of the research process, the core team gained important insights and reflected on aspects that could be improved for the future. These relate to the profile of



participants, where the majority of engaged Co-Researchers were women above the age of 30. Thus, a more heterogeneous group of Co-Researchers may have provided additional insights. Furthermore, the size of the Knowledge Coalition decreased over the years, which indicates a need for different strategies to engage KC members in the research process. A stronger commitment from the Knowledge Coalition may in turn contribute to additional impact at the wider societal level.

The following indicator matrix summarizes the main impacts that this R&I Action has achieved up to now, according to data self-reported by each R&I Action<sup>2</sup>. A more detailed table is provided in the Annex.

	<b>Impact on actors/participants</b>	<b>Scientific impact</b>	<b>socio-political impact</b>
<b>Output</b>	32 Co-Researchers signed IC, wrote 222 microstories and were involved in chatbot co-design: 24 CoRes with experience of mental health, 8 relatives, 2 double profiles. 10 Co-Researchers participated in collective data interpretation and transformation into actions.	- new cooperative approach for participatory research, incl. online co-design sessions, research diary, informal communication channels, web platform with private space for the Co-Researchers	65 Knowledge Coalition members at the local (Barcelona), regional (Catalunya), national (Spain) and international levels
	718 chatbot users (individuals with an experience of mental health, families, informal caregivers, professionals and anyone concerned by mental health). Data from 06.11.2022	methodology for collective data analysis	7 engagement sessions partly with Co-Researchers
	35 interactive engagement sessions with Co-Researchers (initiation, co-design, chatbot testing, collective data collection, etc.)	crowd-sourced data related to social support networks in mental health from multiple sources: - lived experiences of the Co-Researchers - the chatbot data	14 policy recommendations
	5 video testimonials	New approach for Informed Consent	

<sup>2</sup> Note that the researcher teams behind each R&I Action chose a slightly different focus for their self-reporting.



	<p>Participation of 9 Co-Researchers to the Final Assembly (18th November)</p> <p>2 Co-Researchers presented the project in 4 scientific conferences (local and international)</p> <p>5 Co-Researchers participated to a public event at Canodrom, a public presentation at Psychology Faculty and a presentation at the Mobile World Congress 2022</p> <p>2 Co-Researchers were interviewed for the CoAct videos of the toolkit</p> <p>2 Co-Researchers interviewed in Radio and TV.</p>	<p>Co-created prototypes</p> <ul style="list-style-type: none"> <li>- Chatbot</li> <li>- Research Diary</li> <li>- CoActuem web platform;</li> <li>- Communication material</li> </ul>	
<b>Inter-mediate outcome</b>	<p>Experiences of personal growth and better understanding of mental health issues from different perspectives; better understanding of certain situations or lived experience from another angle; learned how to take perspective and acknowledge personal growth</p>	<p>New insights about the co-research process: what worked well and what did not</p>	<p>Better understanding and awareness of social support networks</p>
	<ul style="list-style-type: none"> <li>- new resources or support strategies for persons with mental health issues</li> <li>- greater awareness of the importance that others (namely society at large) understand the importance of social support networks in mental health.</li> </ul>	<p>New insights into social impact assessment of Citizen Social Science activities</p>	<p>Networking and experience exchange with other Knowledge Coalition members</p>
	<p>increased data literacy</p>	<p>New scientific insights about roles and behaviour of all members of the mental health care ecosystem</p>	<p>Better understanding of Citizen Social science and how it aims to address societal challenges</p>
	<ul style="list-style-type: none"> <li>- Better understanding of Citizen Social Science processes</li> <li>- feeling of having 'their voices heard'</li> </ul>	<p>Lessons learned on how to use crowd-sourced data to understand mental health care ecosystems</p>	
		<p>Scientific publications in preparation</p>	
<b>Long-term</b>	<p>increased self-determination of people with mental health issues and their families as informal caregivers</p>	<p>New research collaborations with KC members and/or through TECSAM and other</p>	<p>new policies for better mental healthcare support services</p>



<b>outcome</b>		municipal/regional/international networks. New data for scientific research. Development of tools to be reused in future Citizen Social Science projects.	
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Table 1: Updated output/outcome matrix for the Barcelona R&I Action

### 4.1.3 The Future

The intermediate outcomes described above are in the long-term expected to increase empowerment, self-determination and the quality of life of citizen Co-Researchers, and lead to the implementation of new measures and regulations at policy level. Policies do not change quickly, as public administration tends to be slow moving. However, we have received clear indication that there is political will to implement changes for a sustainable improvement in mental healthcare services. During the final public event of the R&I Action in Barcelona – the “Mental Health Community Assembly” – representatives from public administration confirmed their support and stressed the importance of the project results for further policy action. According to the official representative from the City’s Health Council, a specific budget allocation would be important to move forward, and structures that go beyond the changing political mandates have to be created in order to support stable and continuous action.

At the same time, the public administrators expressed their desire to incorporate all the validated recommendations into the new 2023-2027 Mental Health Plan of Barcelona City Council and highlighted the need to collect data, following the recommendation to create a Data Observatory in mental health, to support higher quality and more targeted interventions:

*“The data is very important to be able to build a caring Barcelona in the field of mental health”* Gemma Tarafa, Councilor for Health, Aging and Care of Barcelona City Council

We see very favourable conditions that project results will be taken up by public policies. This is manifested by the working group called “Assembly of mental health”, which includes some of the CoAct Co-Researchers and is officially recognised by public authorities. The participants of the assembly are going to monitor the developments of the public health authorities in terms of mental health policies and will meet with their representatives in regular meetings in the future. During these encounters, public health policy makers will have to report back about what has happened in a 1-year timeframe, including how the CoAct recommendations have been or are being taken





up. There is thus some evidence that the National Mental Health Pact for Catalonia can be influenced, and the political representatives are strongly committed.

In the future, the actors engaged in this R&I Action also expect a growing public awareness for the topic, which has already been noted and was probably strongly intensified by the effects of the COVID-19 pandemic. Concrete suggestions for the future awareness from the CoAct actors include sensitising young people and dealing with mental health issues in schools. In addition, more understanding for the needs of individuals with mental health issues, such as more flexibility and understanding at the workplace for mental healthcare, is envisioned. Along with an improved support service for people with mental health issues, participants expect generally better therapeutic support and treatments, not only for individuals with mental health issues, but also for their families. Again, the political willingness for all these suggestions can be attested from our data, but the concrete realisation of these suggestions remains to be seen.

For example, Magda Casamitjana, Director of the National Mental Health Plan of the Generalitat de Catalunya, has affirmed the importance of following the recommendations of the WHO, which stress e.g., the importance of services and support for people with mental health conditions that extend beyond clinical treatment. According to the latest WHO recommendations on mental health, “transforming mental health means strengthening multisectoral promotion and prevention for all”<sup>3</sup>. Mrs. Casamitjana also reaffirmed the political commitment to incorporate the various actions proposed at the institutional level, emphasising the inclusion of peer-to-peer from the public sphere, as well as the indispensable interdepartmental and territorial cooperation and the involvement of the various agents participating in the project.

Figure 6 summarizes the most important expected results from the Co-Researchers and Knowledge Coalition members, collected at the end of the project. The ranking shows that most of the results indicate long-term impacts that require political actions.

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<sup>3</sup> World mental health report: Transforming mental health for all - executive summary. Accessed on 20.11.2023 from <https://www.who.int/publications/i/item/9789240050860>



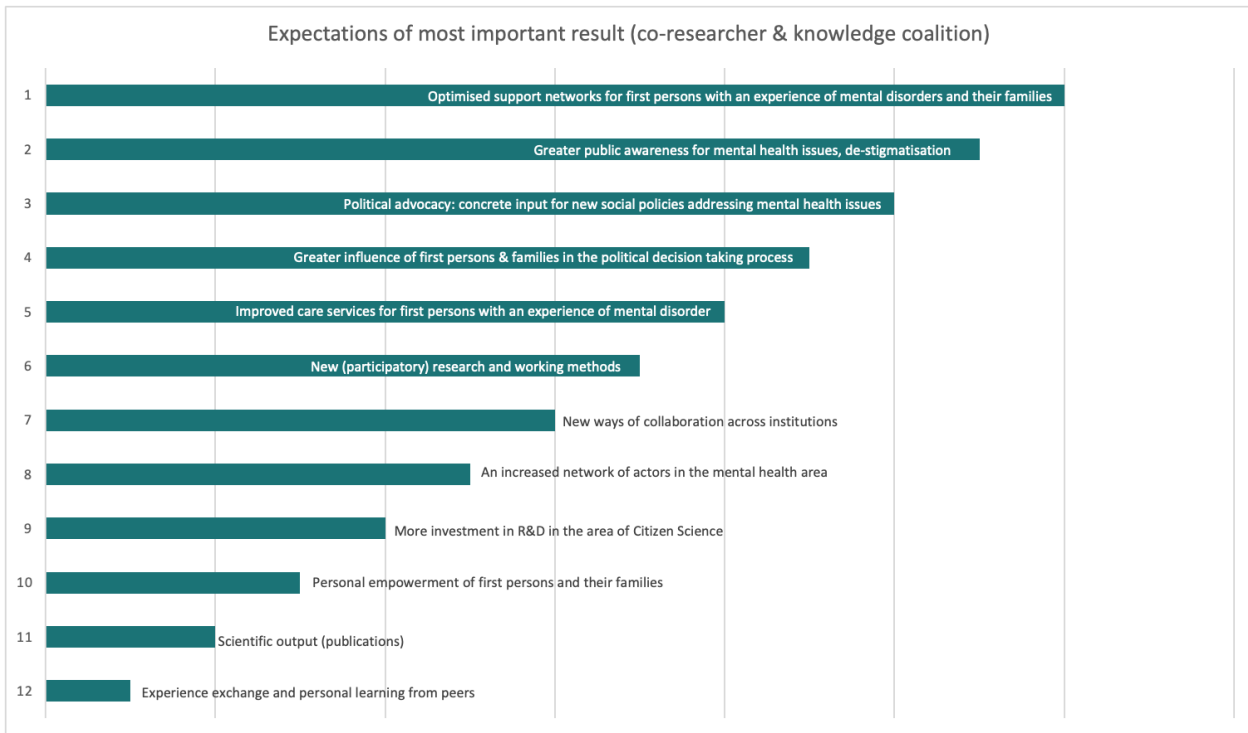


Figure 10: Ranking of most important results expected from Co-Researchers and Knowledge Coalition members

To sum up, there are good indications about the potential future impact of the R&I Action. However, real evidence can only be collected in a long-term assessment and follow-up activities. We see that some follow-up activities have already been initiated. Most importantly, for the transformative objectives of this action to create socio-political impact will be the work of the assembly, which has been established and is facing some favourable conditions at the moment.

## 4.2 Youth Employment, Vienna

The Youth Employment R&I Action collected evidence of the lifeworlds and needs of young people attending mandatory social policy measures. This data generated by Co-Researchers directly serves policy makers in evidence-based decision-making processes and negotiations on resources and policy implementation guidelines. For the Co-Researchers, an important achievement was a better understanding of the broader societal context they are embedded in, which allowed them to act as advocates for themselves and their peers. This also served as an important input for the trainers and social workers implementing social policy measures. On a scientific level, new



methodologies and participatory research tools could be developed while the effectiveness of Citizen Social Science for working with young people could be demonstrated not just for the field of social sciences but also for social and youth work. Furthermore, sustainable networks with important policy actors were built and new research questions developed.

### 4.2.1 The Past

In 2016, approximately 6.3 Million young people aged 15-24 across the European Union were classified as “NEETs” – not in education, employment or training. In Austria’s capital of Vienna, about 3,500 young people below the age of 18 could be categorised as such that same year. These young people are usually in precarious socio-economic positions and face significant difficulties entering the first job market, especially with the prospect of stable employment paying a living wage. In the wake of the financial crisis of 2008, a number of regional, national, and European initiatives were launched throughout the EU to support youth with NEET status. Austria initiated a legislative process that made education mandatory for young people until the age of 18 through the “Ausbildungspflichtgesetz” (Compulsory Training Act) in 2016.

Within the context of the “AusBildung bis 18” programme (Education & Training up to 18, henceforth E&T up to 18), a variety of measures are offered for young people to take part in, in case they are not attending conventional school or serve an apprenticeship. While this programme and its measures are intended to accommodate all so-called FABAs (Frühe AusBildungsAbbrecher\*innen or Early Education Dropouts), this umbrella term covers young people with a considerable variety of backgrounds, needs and challenges (see Wintersteller et al., 2022). Simultaneously, Austrian policy makers are interested in standardising the programme as much as possible and feasible, not least to ensure certain standards of quality.

In this context, the CoAct team at the University of Vienna (UNIVIE) offered to engage young people taking part in such measures in Participatory Action Research, to co-research their interests and needs and create evidence for future policy decisions with the aim of making the programme and its measures more effective. From the very beginning, the research team at the University of Vienna engaged various stakeholder groups from the policy level via public administration to the implementation level of the E&T up to 18 programme. After conducting several interviews with key stakeholders, a broad range of actors were invited to take part in a Knowledge Coalition. This coalition served to ease access to the field, provide valuable insights and context, enabled



networking and exchange between and within different stakeholder groups, and allowed the Vienna research team to build on existing expertise while also collecting open questions and existing gaps. Furthermore, calls to action developed by the young Co-Researchers could be shared directly with decision makers at all levels, while coalition members were continuously compelled to reflect on possible ways to address these needs.

Similarly to the Barcelona R&I Action, the ongoing formative evaluation of participatory processes implemented during the entirety of its 3-year runtime showed the value of approaching the research co-design with young people in a highly flexible manner. Both preparation and post-processing were important for maintaining trust with both the Co-Researchers and the members of the Knowledge Coalition, while the close collaboration with representatives of expert organisations was experienced as highly valuable to the entire process. This was especially true as E&T up to 18 measures represent a highly transitional state for the young people themselves, while trainers, social workers, administrators and policy makers represent much more stable stakeholder groups that are thus able to implement sustainable change.

#### 4.2.2 The Present

With the CoAct project coming to an end, the Co-Researchers and wider stakeholder communities of the R&I Action on Youth Employment were able to achieve measurable impact on several levels. For the young people and to a degree also their trainers, they gained an understanding of the entire social science research process. This gave both groups new tools to rely on in the future. For instance, the young Co-Researchers were enabled and empowered to identify and communicate their needs, not just as individuals but as part of a group. This de-individualisation allowed the participating young people to act as advocates both for themselves and for their peers in similar situations. As two trainers put it in their final feedback: "They were allowed to say something and were heard." and "They saw with glee that there was a world beyond their own." (quotes from the trainer reflection on 22. April 2022). A very important activity in this context were three roundtable discussions with representatives from ministries and other public bodies, where young Co-Researchers were able to share the positions developed in the context of earlier project weeks in direct conversations with different decision makers, while also providing their own situated expertise on these issues.

*"I think this is very well illustrated with the topic of mental health, where it was about how young people are struggling with particular mental strain during COVID-19. That*



*is something other people are talking about as well, that is not our outcome. What makes our research special is how the young people themselves are talking about it, and how they develop the topic for themselves, and what needs they are able to articulate from that.”* Teresa Wintersteller, academic researcher at the University of Vienna (translated)

Trainers remained an important stakeholder group throughout the research process, taking a much more active role than initially anticipated, with one even implementing their own co-research project. Despite some initial reservations regarding the feasibility of implementing social scientific research with educationally alienated young people, the trainers described the activities of the CoAct project as methodologically interesting and indicated their readiness to repeat such a process in the future. However, they noted that it might be difficult to implement without outside support. In this respect, the open tools developed by the UNIVIE team in the form of an [Actionbound](#) (described in more detail in D7.2 and D4.3) as well as a [participatory research board game](#) represent guides for implementing such research processes with young people in a pre-structured and somewhat gamified way. The UNIVIE team also organised a training session to support stakeholders working with young people in guiding such a gaming experience. Such interventions will in any case remain selective and serve mainly to broaden the toolbox trainers and social workers may employ in E&T up to 18 measures. Similarly, trainers mentioned being inspired by CoAct to draw on new types of external experts for special activities in the future, for instance by inviting graphics designers to guide young people in developing short movies on their interests. While the UNIVIE team offered to give more targeted feedback to institutions who hosted project weeks with young people, the Knowledge Coalition members found themselves overall reassured that the trajectory in which they were developing E&T up to 18 measures broadly aligned with the needs of the young people.

Finally, many of the trainers participating in Knowledge Coalition meetings also pointed out how these events fulfilled a need for exchange and strengthened connections at an implementation level – which was deemed especially helpful in the early pandemic. Such networking and outreach activities are usually relegated to the work of project managers and are potentially contentious, as organisations offering trainings in the E&T up to 18 measures operate in competition over limited funds. As such, these meetings outside of existing hierarchical structures served as a resource otherwise not available.

Aside from these more or less stable groups, the UNIVIE team made efforts to reach other relevant stakeholder groups, such as social workers and the broader youth work community. By sharing



resources through social media, organising a webinar on digital youth work, and taking part in conferences outside of the academic context, social science methodologies were made more tangible and accessible to a wider audience.

On the scientific level, the UNIVIE team has been prolific in its dissemination activities and exchanging with scientists from other fields on project results, especially regarding participatory research approaches. Further research proposals building on the results of CoAct are in the works, while lasting sustainable links to Knowledge Coalition members could be achieved. One important impact relates to the institutional informed consent procedures at the Department of Educational Sciences. The UNIVIE team cooperated with the data protection officer both to fine-tune established procedures and to offer a departmental training session on legal and ethical aspects of such procedures.



Figure 11: Self-assessment Vienna mid-term and final

Comparing the ratings provided through the mid-term and final self-assessment conversations with the UNIVIE team, the ranking regarding both project processes and its impacts has clearly improved in all dimensions. While the project experienced initial delays and ongoing challenges because of the COVID-19 pandemic, these could be addressed in a way that allowed the project to reach most of its goals. On the scientific level, scientific outputs could be successfully disseminated, networks strengthened, and synergies exploited. For the participants, the weakest aspects still revolve around ownership of and continued interest in the research process, which are both negatively impacted by the aforementioned transitional quality of E&T up to 18. However, the Co-Researchers showed ownership of the results of the process and demonstrated a willingness to take responsibility for its execution. As the weakest dimension of impact, the socio-ecological aspects remain. For one, this is due to ecological questions not being a thematic focus



of this R&I Action. However, in terms of policy and even economic impact, some progress could be achieved, as will be laid out in further detail in the next chapter.

The following indicator matrix summarizes the main impacts that this R&I Action has achieved up to now, according to data self-reported by each R&I Action. A more detailed table is provided in the Annex.

	<b>Impact on actors/participants</b>	<b>Scientific impact</b>	<b>Socio-political impact</b>
<b>Output</b>	<ul style="list-style-type: none"> <li>- 180 young people in E&amp;T up to 18 measures involved in total:</li> <li>- 12 young people in COVID-19 reflection</li> <li>- 7 young people in a pilot online research session</li> <li>- 26 young people in research weeks</li> <li>- 18 young people in 3 roundtables discussing main outcomes and developing ideas for solutions</li> <li>- 80 young people in a two-day special evaluation event</li> <li>- 25 young people in the development of an Actionbound "Action Research on Education and Employment"</li> <li>- 12 young people in the development of the research board game "FAB!"</li> </ul> <p>4 videos produced with young people as a result of research weeks</p> <p>3 graphic recording posters produced, summarizing roundtable discussions</p> <p>2 tools created as part of the Inclusive Toolbox for Citizen Social Science</p> <p>1 report (print &amp; online) in German for policy makers</p> <p>1 exhibition on the main results; 29 young people and their trainers visited and took a quiz designed to familiarize</p>	<ul style="list-style-type: none"> <li>- 2 tools for a low threshold approach to social science research developed</li> <li>- informed consent procedures advanced with visual materials and discussions</li> <li>- various materials created based on Co-Researchers results</li> <li>- methods on how to involve underage Co-Researchers in all research phases</li> <li>- new methodological questions defined</li> <li>- exhibition about main results visited by researchers from various fields of participatory research</li> <li>- presentation of outcomes and demands at the Tyrolean steering group with 40 participants</li> <li>- panel discussion on the potential of participatory research for transforming social policy with 19 attendees</li> <li>- teaching session with social work students from Switzerland</li> <li>- event in cooperation with the Data Protection Officer of the University of Vienna on legal and ethical aspects of informed consent</li> <li>- presentation of various results at 8+ conferences from the fields of Citizen Science, Social Work, Sociology and others (incl. 3 keynote lectures at national conferences)</li> <li>- initiation of a local participatory research exchange group</li> <li>- paper on feminist ethics and informed consent</li> <li>- paper on challenges young people</li> </ul>	<ul style="list-style-type: none"> <li>- 73 KC members from various fields connected to E&amp;T up to 18 involved in total, e.g. ministries, administration offices, social workers and coaches, coordination offices, researchers, youth organisations</li> <li>- 10 conversations with KC members on E&amp;T up to 18</li> <li>- 3 meetings with KC members (all)</li> <li>- 6 meetings with social- and youth workers, trainers and other practitioners of E&amp;T up to 18</li> <li>- 3 roundtables with altogether 6 policy stakeholders</li> <li>- 1 cooperation with the federal ministry of labour and economy on a special event for participatory evaluation of an E&amp;T up to 18 measure</li> <li>- 1 report (print &amp; online) in German for policy makers</li> <li>- 1 presentation of the outcomes and demands of young people at the Tyrolean steering group</li> <li>- 1 exhibition about the main results of the co-research process visited by several members of the Knowledge Coalition</li> <li>- 1 presentation about main results, visited by several members of the KC with 40 attendees in total</li> <li>- 1 homepage in German featuring continuous updates</li> <li>- 1 Instagram profile continuously informing about the research processes (also connected with numerous youth work institutions)</li> <li>- 2 tools as part of the Inclusive</li> </ul>



	<p>young visitors with the content.</p> <p>1 Instagram profile continuously informing about the research processes</p>	<p>face during the transition from school to work</p> <ul style="list-style-type: none"> <li>- homepage in German featuring continuous updates</li> <li>- report (print &amp; online) in German for policy makers</li> </ul>	<p>Toolbox for Citizen Social Science</p>
<b>Inter- mediate outcome</b>	<ul style="list-style-type: none"> <li>- reflecting and evaluating their experiences in educational institutions</li> <li>- self-confident expression of experiences and reflections</li> <li>- experiencing that their opinions matter</li> <li>- being authors/co-creators of videos for dissemination of research results</li> <li>- understanding of social structures and inequality</li> <li>- experiencing a participatory social science research process and gaining skills on doing research on topics relevant to young people</li> <li>- increase in data literacy due to practical involvement in research process</li> </ul>	<ul style="list-style-type: none"> <li>- learning from practice of co-creation for further Citizen Social Science research</li> <li>- sharing young Co-Researcher perspectives and lifeworlds with KC members</li> <li>- advocating for including the perspectives of affected young people in the evaluation and adaptation of policies</li> <li>- insight into the lifeworld of youths and the needed measures to lead them to employment or alternative occupational opportunities</li> <li>- best practice experiences when coaching Co-Researchers (dealing with group dynamics, marginalisation, etc.)</li> <li>- increased understanding of citizen science's ideal learning environments</li> <li>- scientific publications</li> </ul>	<ul style="list-style-type: none"> <li>- stakeholders might include the perspective of young people in their work</li> <li>- increased awareness of the challenges young people face</li> <li>- cooperations with KC member beyond the KC activities</li> <li>- policymakers, providers, social workers, pedagogues, parents learn about the ideas &amp; living worlds of the pupils in E&amp;T up to 18 measures</li> <li>- networking and experience exchange with other stakeholders</li> <li>- presentations at the meeting of the advisory board of E&amp;T up to 18 on a national level (expected participants: 20)</li> <li>- presentation at the meeting of the Lower Austrian contact group on E&amp;T up to 18 and Transition from School to Work (expected participants: 20)</li> </ul>
<b>Long- term outcome</b>	<ul style="list-style-type: none"> <li>- empowerment</li> <li>- alternative measures and youth-appropriate offers</li> <li>- positive connotation with participatory (research) processes and increase in openness towards possibilities for participation in research and social policy agendas</li> </ul>	<ul style="list-style-type: none"> <li>- demonstrated effectiveness of Citizen Social Science</li> <li>- sustainable links to the Knowledge Coalition members</li> <li>- new research questions related to youth employment</li> <li>- new research building on the approaches and insights of R&amp;I Action #2</li> </ul>	<ul style="list-style-type: none"> <li>- implementation of better measures and youth appropriate offers</li> <li>- increase in participation opportunities of young people in the design of social policy measures</li> <li>- increase in support of Citizen Social Science projects about social policy measures for young people</li> </ul>

Table 2: Updated output/outcome matrix for the Vienna R&I Action

### 4.2.3 The Future

As laid out above, because the E&T up to 18 programme represents a highly transitional stage for all young people taking part in it, lasting change within these measures needs to be anchored in policy decisions and institutional change. To improve the chances of sustainable impact, the calls



The CoAct project has received funding from the European Union's Horizon 2020 Research and Innovation programme under grant agreement No. 873048



to action developed by and with the young Co-Researchers were widely disseminated by the UNIVIE team, in various formats: both videos and information graphics were produced with the help of graphics designers, while both a policy brief and a long-form project report were written to provide data and background information useful to policy makers, E&T up to 18 organisations and practitioners in the field, but also scientists to build on in future research. These materials were also disseminated in a targeted manner to the members of the Knowledge Coalition. At a dedicated final event, they were invited to think about changes they were willing and able to implement in their respective field of influence.

For the trainers, social workers and project managers on site, meeting the needs expressed by the young Co-Researchers means working within the existing system. Stakeholders from these groups indicated their motivation to take up calls to action within the space of possibilities, including: allowing opportunities for young people to take short mental health breaks when needed, e.g. by dedicating office space to serve as a safe haven; allowing for more participatory decision-making on training activities with young people where feasible; and generally raising awareness among trainers – especially those not trained as social workers – regarding complex issues such as mental health needs of young people, intersectionality and discrimination, and extra-school burdens experienced by young people.

*"I found all topics of interest and I'm looking forward to discussing [the results] with my colleagues and together think about what we can implement at our level. And a thing or two is definitely actionable without too much of a financial investment."*

Testimony from a Knowledge Coalition member (translated)

On a regional level, one responsible agency indicated that it initiated a process to clarify the obscure and overly complex system of providers and educational tracks that has been identified as problematic by the young Co-Researchers. This process is intended to be accompanied by an overhaul of the website to make information on the regional providers of the E&T up to 18 programme more accessible to young people in the future.

*"I think the participatory approach is very intriguing and important. We are already working to make the system of offers more transparent and clear."* Testimony from a Knowledge Coalition member (translated)

On a ministerial level, awareness was expressed about the key role government agencies play in defining framework conditions. For instance, further education on certain topics such as diversity and discrimination can be mandated for recipients of E&T up to 18 funds, and evaluation



procedures can be adapted to involve the voices of young people in a more participatory way. However, as the biggest hurdle to any kind of change, the always limited resources, complex interdependencies and distributed responsibilities between different policy actors, and the slow pace of institutional change were put forth.

*"If we can arrange for resources, we can set a good ground for implementing new ideas. There is awareness on these topics now, and we are about to discuss them together. Within the framework of the Austrian Youth Strategy, for example, we are currently working at an interdepartmental level to share research results and see what is done and what is possible within each department. And it often depends on the mindset of the people in the administration as well as their competencies and their position in the organisation, on communicating and trying to change something together. [...] I see it as our task to make change happen, not just at our department. But in the end, the administrative level cannot make these political decisions alone."*  
Kai Hartig, Ministry of Labour and Economy, Austria (translated)

As such, the evidence provided through the project activities was positioned as the most valuable output of CoAct, which provides the most significant opportunity to achieve sustainable political and societal impact.

*"We were lucky that the University of Vienna [team] contacted us because CoAct is an extremely interesting and useful project to us. It gives us evidence for the issues and topics the young people are interested in and struggle with, which we can build on in our future offers and when developing our policy implementation guidelines. [...] In the best case, we have now argumentative support for things that we want to do for the young people and the [E&T up to 18] projects."* Kai Hartig, Ministry of Labour and Economy, Austria (translated)

This process will be further supported by the UNIVIE team, which is planning further cooperation on the scientific monitoring of E&T up to 18 measures with the Vienna Employment Promotion Fund and the Federal Ministry of Labour and Economy. This includes additional presentations in committees and network meetings of E&T up to 18 to promote the project results developed by Co-Researchers.

In summary, there is a significant trajectory promising future impact of the R&I Action, although most follow-up activities necessary to achieve these goals are situated after the end of the CoAct project. Thus, capitalising on the results of the project and thus creating socio-political impact is



now mostly up to the members of the Knowledge Coalition, who proved highly dedicated in this regard.

### 4.3 Environmental Justice, Buenos Aires

The Environmental Justice R&I Action achieved its main objective, the co-design of a Citizen Science platform for open data. The citizen-generated data will contribute to environmental and sanitation policy making, creating long-term impact. The growing recognition of Citizen Science methods by public authorities and the legal mandate for participation in sanitary policy making are two highly favourable conditions for achieving this impact. The core research team was able to establish new and intensify existing collaborations, e.g., with community libraries and educational institutions, for the use of Citizen Science in environmental education. A transfer of knowledge in scientific methodologies has been achieved at national level, where CoAct is showcased as good practice in citizen science, gaining recognition and visibility of the researchers and the project outcomes. At individual level, the participatory activities raised the awareness for the river and environmental protection amongst the local population.

#### 4.3.1 The Past

The Matanza Riachuelo is a heavily contaminated 64 km long river that runs along the southern limit of the City of Buenos Aires. According to a population census in 2010, 1 million out of the 6 million people living in the river basin (in total about 12% of the entire Argentinian population) live in shantytowns and emergency settlements. It is estimated that health and living conditions are highly risky for at least 1.7 million people living in the basin, as 35% of the basin population does not have access to sewers and 40% does not have access to potable water. Over 1,200 families have even been relocated due to the poor sanitation situation and health risks. Environmental NGOs as well as some resident groups have been active over previous years, organising several participatory activities with the community to, e.g., discuss alternative options for the resettlement process. However, these voices and activities have not yet led to beneficial policy changes. Policies affecting the neighbourhood have been developed without considering the particular situation of the local residents.

This situation triggered the Environment and Natural Resources Foundation (FARN) and the National University of General San Martín (UNSAM) to join forces and implement participatory



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activities in the context of Citizen Social Science. The main aim was to gain further insights into the matter, specifically the socio-environmental risks the residents are facing in the basin, to create wider awareness for the issue, and to provide concrete support structures, such as a Citizen Science platform for open data. This citizen-generated data is expected to contribute to new sanitary and environmental policies in the long run.

As the activities were set up as a truly participatory process from the very beginning, the core team was faced with many changes and challenges along the way. Certainly, the outbreak of the COVID-19 pandemic required a lot of adaptations in the setting, as many activities with the local communities were planned on site and formats of engagement were largely reduced to online settings. Only at a later stage could activities in face-to-face settings be taken up again. We also observed changes in the thematic focus of the platform, driven by the input of Co-Researchers during the many co-design sessions of the platform. Thus, flexibility was one of the core characteristics of this participatory research process. The learnings from this dynamic process adaptation was described in detail in previous deliverables (Kieslinger et al. 2021).

### 4.3.2 The Present

At the end of the CoAct funding period we have a truly co-designed platform for the sharing of citizen-generated data and related activities that led to a wider awareness for the topic of environmental pollution and sanitation in the river basin. As the project has been following a transformative goal from the very start, the most important impact from the perspective of environmental NGOs and activists is currently recognised in the application of Citizen Science methodologies for transformative change and the empowerment of citizens. The platform for collecting authentic data is expected to contribute to such transformation:

*"The platform is a tool for people to become aware of the river's situation and to realise that we can all participate in something that can help improve the situation [...] The tool that we were looking for and could not find to be able to transmit what science needs most, which is the amount of data over time. Data, data. So this tool is going to help us in the best way to collect data from a place and that can be generated by anyone. And that data will be taken to the specialists, which is more than important".*

Co-Researcher testimony (translated)

Similarly to the Barcelona R&I Action, there are clearly highly favourable factors to achieve such transformation, namely the official mandate for participation in sanitation policy making by



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National Environmental Law, and the National Integrated Law on Environmental Education that seeks to generate environmental skills and attitudes at all levels. Thus, the platform may have been established just at the right time in a favourable political environment.

At a scientific level, the project contributed to the increasing recognition of Citizen (Social) Science as a valid scientific method. While at the start of the project and during the initial interviews with stakeholders from the Knowledge Coalition, Citizen Science was poorly recognised in the Argentinian scientific landscape, this image has changed. Evidence confirms the growing recognition from science policy makers, as policy recommendations stress the potential that Citizen (Social) Science can have for policy making and policy improving. The stakeholders recognise that such participatory methods can be favourable for all parties involved – the citizens and their communities, policy makers, and scientists.

For the driving organisations, the project was very useful in establishing new and intensifying existing connections and networks. The collaborations with community libraries and educational institutions for the future use of Citizen Science in environmental education have already been confirmed by some recently signed collaboration agreements.

At an individual level, we can also detect some personal benefits. Participants in the participatory research process are more conscious of the river and how far it affects their living:

*"The truth is, I used to pass nearby the Riachuelo like that, and now every time I pass it, every time I am close to it, I look at it with different eyes and I collect all the data I can without hesitation. It's incredible, I gave it the value that I wasn't giving it. This helped me to see it from another point of view and every time, I repeat, every time I pass by, every time I look at it and observe all the details that I didn't give it any importance before."* Co-Researcher testimony (translated)

This impact at individual actors' level is also recognised in the final self-assessment exercise that was performed towards the end of the project (see Fig. 8). While the socio-ecological focus was already high during the mid-term reflection and slightly increased towards the end, the attention for the engagement of individual actors and their potential personal benefits has increased according to the core research team consisting of UNSAM and FARN members. At the scientific level, we can see a slight decrease in the impact rating compared to the mid-term reflection. This is mostly due to the fact that scientific publications are still to come, while originally, they were expected to be complete by the end of the funding period. As mentioned above, a main characteristic, but also a main challenge for this R&I Action has been the required flexibility. The



many changes and adaptations to contextual factors, such as COVID-19 restrictions or the establishing of new collaborations, also required more time than originally foreseen and in turn affected the timing and resources of scientific publications.



Figure 12: Self-assessment Buenos Aires mid-term and final

The main impacts that this R&I Action has achieved up till the end of the CoAct funding period are summarised in the following indicator matrix, as self-reported by the R&I Action. A more detailed table is provided in the Annex.

	<b>Co-Researchers and Citizen Scientists</b>	<b>CoAct for Environmental Justice Professional Researchers</b>	<b>Knowledge Coalition</b>
<b>Output</b>	142 community actors reached (signed IC forms) 71 active Co-Researchers 28 workshops organised 4 onsite meetings organised by the community, several virtual meetings 10 videos including testimonials of Co-Researchers 6 co-designed questionnaires for data collection + 1 questionnaire to share community news and events. Co-designed guidelines to share experiences in the three themes. Crowd-source data to be published in December 2022	<ul style="list-style-type: none"> <li>- human-centred participatory design methodologies inspired by design thinking.</li> <li>- engagement with network of universities working on outreach activities for environment and inclusion</li> <li>- UNDP and UNESCO gathering on the potential of Citizen Science for transformation.</li> <li>- R&amp;I Action in a map developed by UNDP and Ministry of Science on Citizen Science initiatives</li> <li>- session with undergraduate students from UNSAM university on "How to do research on water?"</li> <li>- ECSA 2020 participation</li> <li>- Citizen Science in the SDG Conference session</li> <li>- National Conference of Open and</li> </ul>	<ul style="list-style-type: none"> <li>- 27 professional researchers and 41 policy actors reached (36 Argentinean + 5 international, who signed IC forms)</li> <li>- news through CENIT/UNSAM and FARN websites</li> <li>- website for the R&amp;I Action #3 CoAct Environmental Justice in FARN</li> <li>- Beta version of the platform</li> <li>- Contribution to National recommendations for Open Science policies with a chapter on citizen and participatory research</li> <li>- R&amp;I Action was presented as a case to the Minister of STI during the National Citizen Science Program's launch.</li> <li>- policy brief reporting the results of the policymakers perspectives</li> </ul>



		<p>Citizen Science organisation and participation</p> <ul style="list-style-type: none"> <li>- SwafS Citizen Science Working Group</li> <li>- Co-creating digital platforms for Citizen Science</li> <li>- Panel on "Policies for citizen science: issues and challenges" of the 2nd Workshop of the Brazilian Citizen Science Network</li> <li>- ECSA Conference 2022 (3 sessions)</li> <li>- GOSH 2022</li> <li>- ESOCITE/4S annual meeting</li> <li>2 CENIT/UNSAM working papers</li> <li>33 short notes related to the R&amp;I Action published on websites</li> <li>1 paper in Citizen Science Theory and Practice (2022)</li> </ul>	<p>study and recommendations on policy options to promote the link of Citizen Social Science and public policy.</p> <ul style="list-style-type: none"> <li>- working papers cited as part of a section on citizen and participatory research in Recommendations for the National Open Science Policies of the Ministry of STI.</li> <li>- study to understand sanitation policy makers perceptions of the potential link of CS to decision-making processes in policy</li> <li>- workshop with policymakers to discuss the study's results, in collaboration with the Argentinian UNDP and the Ministry of STI.</li> </ul>
<b>Inter-mediate outcome</b>	<ul style="list-style-type: none"> <li>- Capacity building, increased knowledge, Engagement, Mobilisation and Data literacy.</li> <li>- use of results &amp; platform for Environmental Education</li> <li>- educational uptake by schoolteachers discussed</li> <li>-platform usage by community libraries</li> <li>- connection to open scientific hardware for water quality monitoring.</li> <li>- use the platform in water monitoring activities, data interpretation and policy aspects</li> <li>- awareness raising too in the basin</li> </ul>	<p>2 publications: on research processes involving citizens and on policy perceptions of Citizen Social Science knowledge.</p> <ul style="list-style-type: none"> <li>- open crowd-source dataset</li> <li>- promoting the need of building new community-based indicators on socio-environmental issues.</li> <li>- developing interdisciplinary and transdisciplinary networks for doing Citizen Science research.</li> <li>- conversations with CoSensores, an inter-institutional group that produces open scientific hardware for environmental monitoring activities.</li> <li>- conversations with local artists and a museum in the basin to implement the platform in their activities.</li> </ul>	<ul style="list-style-type: none"> <li>- showcase our R&amp;I Action as one national example of doing Citizen Social Science in Argentina, during the launch of the National Programme of Citizen Science</li> <li>- continue developing the alliances to create a network of 'coordinating' users of the platform for transformative actions.</li> <li>- established contacts with community libraries and formal learning institutions,</li> <li>- preparing presentations for funding calls connecting with other initiatives that engage communities in research processes.</li> </ul>
<b>Long-term outcome</b>	<ul style="list-style-type: none"> <li>- improve the quality of life and community engagement in knowledge production activities and in policy processes.</li> <li>- collective knowledge production processes and outcomes may contribute</li> </ul>	<ul style="list-style-type: none"> <li>- Validity of Citizen Social Science models for policy making</li> <li>- Sustainable links to the Knowledge Coalition members</li> <li>- New research questions related to social risks mapping and Citizen Science practices</li> </ul>	<ul style="list-style-type: none"> <li>- UNSAM initiated steps to create an Ethical Committee.</li> <li>- impact on policy: Implementation of recommendations on how to improve the sanitation policy. Changes of regulations</li> </ul>



	<p>towards social cohesion in the basin.</p> <p>- platform and website will be a channel for contact points.</p>		<p>- The information produced in the platform may provide support to legal complaints, if it becomes a legitimate data source.</p>
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Table 3: Updated output/outcome matrix for the Buenos Aires R&I Action

### 4.3.3 The Future

We currently see a window of opportunities for Citizen Social Science to increase in acceptance as a scientific method in Argentina. The recognition that we have seen by science policy makers indicates that participatory methods will see more use in the future. The CoAct experience will be an important reference and its learnings will be shared. There has already been a demand for sharing e.g., the CoAct informed consent procedures and guidelines with other scientific institutions in the country. We expect that this uptake will continue to have an impact in the national science community as it also gets support from public authorities.

Likewise, we expect the socio-political impact to grow in the future, in the sense of civic engagement, activism and the achievement of social aims. Resilience and activism of NGOs that contribute to realising the expected impact have been stressed by the core team as important factors contributing to the possible achievement of these impacts. The legal mandate on participation in sanitation policy making is again a great opportunity for reaching further impact in environmental justice, while the CoAct activities in the basin have shown that this is possible. The established dialogue with all stakeholders, including representatives of public bodies, has clearly contributed to opening up this avenue for the future. NGOs and environmental activities will still have a core role in this process, as they serve as important mediators and spokespersons for residents. With the launch of the platform to share open citizen-generated data that would not have been accessible otherwise, an important tool has been created for citizen empowerment.

For the future impact, the importance of the established collaboration networks with libraries and educational institutions to make active use of the platform and integrate Citizen Science practices in their educational scenarios needs to be stressed. Collaboration agreements have already been signed that will allow the use of the platform in educational settings, in formal and informal contexts. For example, there are scenarios for the use of the platform and Citizen Science activities for historical documentation and common memory. In collaboration with community libraries, information and visualisation of the current status can be collectively achieved and sustained for future generations. The platform will also be used for environmental protection and environmental





conservation for the future, as it allows different forms of citizen engagement, including gaining knowledge about biodiversity.

There are already concrete exploitation plans of the platform for educational purposes, including Citizen Science activities for young people. There is a clear educational focus of community libraries, who envision the platform being in use when working with schools and see great benefit in having data available for teaching and interventions. With the teacher education association, the local CoAct team has already started to discuss how to use Citizen Science for environmental education. They developed a guide on how to use the platform for environmental education in different school subjects (e.g., geography and biology). This can clearly be seen as a main strength for the future impact and supported by the new Environmental Education law in Argentina, which makes it obligatory to teach environmental aspects in school in an integrated way, combining different subjects.

Finally, there are clear indications that the use of the platform and related activities in the future will contribute to even more awareness for Citizen Science practices and democratisation of science on the one hand, and environmental aspects on the other:

*"But since this project and this platform, we have started to pay more attention to it. Today we are passing by the Riachuelo and we are looking at it from a different perspective. And the truth is that I think it will help all of us who are committed in some way and concerned about socio-environmental problems, that we can each contribute from our own place a grain of sand so that this can be solved, so that people can understand their problems from a place where they can do something about them".*

Co-Researcher testimony (translated)

This CoAct R&I Action has thus produced highly promising results that have already started to create impact at various levels, and there are very promising indications and some favouring conditions for the project outcomes to create long-term impact, especially in socio-political terms and at the interface of science, society, and policy.

#### 4.4 New Citizen Social Science Spaces: Gender Equality

In 2021, CoAct launched three Open Calls to support the use of Citizen Social Science methods and tools in projects related to gender equality in Berlin and the Brandenburg area, Eastern Europe, and Pan-Europe. Each call had a different focus on gender perspectives, including



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Sustainable Cities and Communities, Decent Work and Economic Growth, and Gender Equality and Opportunities and Risks. Three organisations from Berlin, Bulgaria, and Greece were selected to join the CoAct consortium team to form a trans-disciplinary collective.

#### 4.4.1 The Past

**Founderland** is a Berlin-based non-profit organisation that uses an intersectional lens to collect data on women of colour (WoC) entrepreneurs. The motivation for Founderland to submit to the open call was the opportunity to create systematic knowledge on an under-researched demographic using an intersectional approach. The open call allowed Founderland to lay the groundwork for new and innovative research on this demographic that can be built upon by other organisations and researchers. Additionally, the open call created an opportunity for the organisation to engage with ecosystem players, such as policy makers and start-up investors, in critical conversations. Their project uses Citizen Social Science methods to research this demographic group while engaging their community. Founderland data shows that women of colour are significantly underfunded, which is the reason for the organisation's existence. It allowed them to build a solid evidence-based foundation for their advocacy and to plan future research projects on the issue.

**Single Step**, based in Bulgaria, focuses on supporting the local LGBTQI+ community with research and advocacy. The motivation for Single Step to submit a proposal to CoAct was the urgent need for research data to substantiate advocacy work and legislative changes to support the trans and non-binary community and professionals who work with them. There was also a pressing need for data on employment opportunities and difficulties for trans and non-binary people to introduce good practice on the labour market. The CoAct project allowed them to conduct the first Bulgarian study on the experiences of trans and non-binary individuals in the job market, as well as the level of readiness of Bulgarian employers to address issues specific to their community. Single Step, already building on social science expertise, used Citizen Social Science to improve their processes and enrich their advocacy actions.

**Women on Top** (WoT) is a Greek community-based organisation focused on gender equality in the workplace. The motivation for Women on Top to submit a proposal was to strengthen their capacity to gain a critical understanding of the new, digitised reality that affects women's lives and inclusion in Greece and Cyprus. The team used Citizen Social Science methods to gather data on the difficulties faced by working women in Greece and Cyprus, as the pandemic pushed many



employees to work remotely and shift to online collaboration platforms. Women on Top plans to use the Knowledge Coalition they built through their CoAct-funded project to support future research projects.

#### 4.4.2 The Present

In the context of the selected projects, ZSI worked to create awareness of the co-evaluation approach and support the projects in setting up their co-evaluation activities. ZSI provided guidance and training, as well as tools and further resources to help the three organisations implement this process effectively. However, these efforts were actively mindful of the limited budgets and time constraints of the selected projects. Finally, ZSI also engaged the three project teams in self-assessment reflections on the process and expected outcomes of their actions. This involved working with the project teams to reflect on their experiences with the co-evaluation approach and to identify areas of improvement or further development.

The three organisations faced different challenges in their participatory research process. Founderland and Women on Top had little difficulty collecting data on their Co-Researchers and communities, but Single Step had to spend more time reinforcing their data protection measures and convincing their community that participating in the research would not put them at risk. Women on Top struggled to attract Co-Researchers from rural areas because they relied on online communication to reach out to their community. Founderland, which worked with WoC entrepreneurs, faced planning challenges for their workshops because their Co-Researchers had limited time available once their professional and personal obligations were accounted for.

Besides the multiple challenges, also resulting from conducting participatory research during a global pandemic, all three teams highlighted the achievements of working with Knowledge Coalitions and Co-Researchers under the Citizen Social Science paradigm. Especially in conducting expert interviews, it became clear how the participation enabled both Co-Researchers and interview partners to take ownership and feel empowered, while interviewees felt more comfortable sharing their experiences with someone with a similar background. Furthermore, the collective design of research questions, data collection instruments like questionnaires, and the data analysis process positively impacted all projects. It helped them shed light on different ways to approach an issue and how the data can be interpreted and allowing for discussions on the research findings that helped shape the outcome of the project.



By offering mentoring in research methods, CoAct supported the CSOs in developing the capacity to conduct research and produce systematic knowledge. This helped ensure that the research is of high quality and is relevant to the needs of communities but also other stakeholders, such as policy makers. Additionally, mentoring in research methods guided participating organisations in developing new skills and expertise, which can be applied in other areas of their work. For example, organisations learned how to design and implement research studies, collect and analyse data, and report on the results of their research. To give an example, mentoring has helped in balancing the respect for participation and collective discussion of methods and results “without sacrificing the diversity and statistical accuracy of our sample” (representative from Women on Top). CoAct mentoring enhanced the organisations' ability to advocate for change on issues related to inequality and gender, based on systematic contribution of knowledge.

The three projects also contributed to the overall CoAct KPIs, which are summarised in the following table:

WP6 KPIs	Co-Researchers & Citizen Scientists	CoAct Professional Researchers	Knowledge Coalition
<b>Output</b>	30 Co-Researchers engaged in CoAct 9 Co-Researchers trained on (open) data literacy 2 Co-Researchers presenting at interactive events	3 open datasets prepared for GitHub/Zenodo	38 public bodies and institutions effectively engaged in R&I Actions
<b>Outcomes</b>	Many Co-Researchers interested in further participating to R&I processes Most Co-Researchers felt that they really contributed to the research and innovation process	2 open access papers in preparation for scientific journals Several presentations at international scientific conferences planned 2 public and/or scientific conference presentations of results made by Co-Researchers 29 events and engagement opportunities organised	3 action plans or policy recommendations in the making
<b>Impact</b>	Creation or fostering of self-sustained communities of practice. Establishment of contact points for affected individuals. Empowerment through access to	Improved approaches to handling informed consent procedures and project evaluation Improved understanding and approaches for project planning considering flexibility issues	New policy measures based on insights from citizen participation New exchange platforms/initiatives for stakeholders Better understanding for the



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	tools of systematic observation and documentation and community building	Open Educational Materials for further training in Citizen Social Science Successor Citizen Social Science projects	potential of using Citizen Social Science in science-policy-society interactions
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Table 4: Indicator matrix of the three CoAct gender equality projects

### 4.4.3 The Future

All three teams indicated that they would continue to use elements of Citizen Social Science from now on, and to make their work more research-intensive where appropriate. The scientific foundation is particularly interesting for cooperation with other stakeholders. Although it is only the beginning for potential partnerships, there is already great interest in exploring ways to collaborate.

**Founderland** was able to connect the business world to civil society work with the help of Citizen Social Science. The research results opened new opportunities not only for the community itself, but also to initiate new collaborations for the investor portal (i.e., finance sector, such as Goldman Sachs) and get funding for follow-up collaborative projects (i.e., with BIWOC, an intersectional co-working space in Berlin). The intention underlying these cooperations is to further initiate social change. Based on the solid evidence created in the project, government entities and investors alike now have a better understanding of the situation. Whereas in the pilot study the focus was on creating the evidence to highlight the problem, follow-up activities will focus more on inducing and supporting change of behaviour and institutional change. The Founderland team developed a social media campaign to inform about project results and methods, and will present the project report at a large event at the end of 2022.

For **Single Step**, there are several future cooperations and projects being planned that focus on different ways to support the trans and non-binary community in issues of health care and the labour market. The plan is to create a platform for medical students to engage in conversations and share knowledge. Another aspect to be tackled in cooperation with legal scholars and lawyers in Bulgaria is legal issues affecting the transgender community. There, the Single Step team has been able to provide mutual support and has already started collecting data. Additionally, Single Step is planning to host three seminars for social workers and psychologists, using research data to design the workshops. These seminars will be part of a national project and will bring together people from all around the country. There are also plans to engage further with employers from



different fields on the labour market, to explore potential areas of collaboration. Finally, Single Step is co-organising an event at an upcoming conference in Sofia to share their work and engage with others working on similar issues. Moreover, based on the positive feedback received, the team plans to further develop the pilot version of the glossary explaining relevant terms of gender identity and sexuality not well known by the general public or employers. Whereas cooperations with the medical community and employers have already started, collaborating with policy will be challenging, given the volatile political situation in Bulgaria. However, the team will approach interested representatives in the administration and observe when the right moment in time has come for use of the project results by policy makers.

**Women On Top** is planning to leverage the results of their project to support and inspire data-informed empowerment initiatives, which could potentially include a range of activities, such as using data to inform policy recommendations, developing educational programs or resources for community members, or conducting further research to better understand the needs and experiences of specific communities. WoT plans to continue regular exchanges with the Knowledge Coalition they have built to support their future research projects. Based on their experiences, WoT will try to engage more policy makers in the next iterations of their research. The first follow-up project will focus on assessing the state of professional and educational opportunities for Greek women living in rural areas. Instead of delegating the project design to a third party, they will use the CoAct Citizen Social Science project cycle and their existing Knowledge Coalition to reach out to this new target audience. This will give them more ownership of the project and allow them to use a more rigorous methodology.

Due to the short time frame and the scope of the projects, the focus of all three projects was on the application of scientific methods for the concerns of the communities. Scientific publications, for example, were not the focus of interest. So far, only Single Step is planning more concretely to write two scientific papers for journals for social and public health (Open Access). For the future, however, the three project teams can imagine further systematizing the knowledge collected in this way. All three projects emphasise that they want to continue to work scientifically in the future based on the scientific approaches they have now used. A central future goal is not only to make the data collected in the project and beyond available to the communities, but also to prepare it for further use in science. The representatives of the CSOs indicated that they also plan to collaborate with Co-Researchers for these publications and to enlist them as co-authors as well.

Overall, the three projects demonstrated that Citizen Social Science provides several benefits for civil society organisations that focus on inequality and gender and that their experiences are



transferable to other issue areas. Civil society organisations can use Citizen Social Science to involve members of the community in the research process, which can help ensure that the research is relevant and meaningful to the community. This can also build trust and foster collaboration between the organisation and the community. Additionally, involving members of the community in the research process provides opportunities for community members to develop new skills, science literacy, and gain a deeper understanding of the issues being studied. This empowers individuals and communities to take action, as well as to address and involve other stakeholders from economy and policy in these actions.

## 5 CoAct Results

Similarly to D7.2, we performed a symmetrical, comparative analysis across all cases. The following methodology section describes the overall methodological approach and the data sources we used for developing the findings in each of the cases as presented above, as well as the cross-case analysis that is presented below.

### 5.1 Method

For our data analysis, we again applied a hermeneutic approach to qualitative content analysis across a set of data sources, such as research notes and transcripts of reflection sessions, video statements and other documents produced by the R&I Actions, including the gender equality actions of WP6. A detailed overview table of all the data sources that we included in the analysis is provided in Annex 1.

Our focus of the content coding this time was on project outcomes and impact. Three researchers from the ZSI were involved in the coding, using MaxQDA software as a support tool. The coders started by applying the code categories that had been applied in D7.2 in a deductive way, and inductively expanded them with new insights discovered in the data material. As the coders also guided the partners in the co-evaluation process, interacting with the local research teams in each of the three core R&I Actions as well as the gender equality projects, it was possible to compare the coding and code documents in communicative validation cycles. Thus, the final cross-case findings emerged through reflection and comparing individual findings.



## 5.2 Results

As discussed above, the methodological approach of WP7 followed the original framework for evaluation and impact assessment in Citizen Science by Kieslinger et al., which focuses on both formative and summative aspects of project implementation through the lens of three dimensions, namely 1) science, 2) citizens and participating actors and 3) socio-ecological/economic systems.

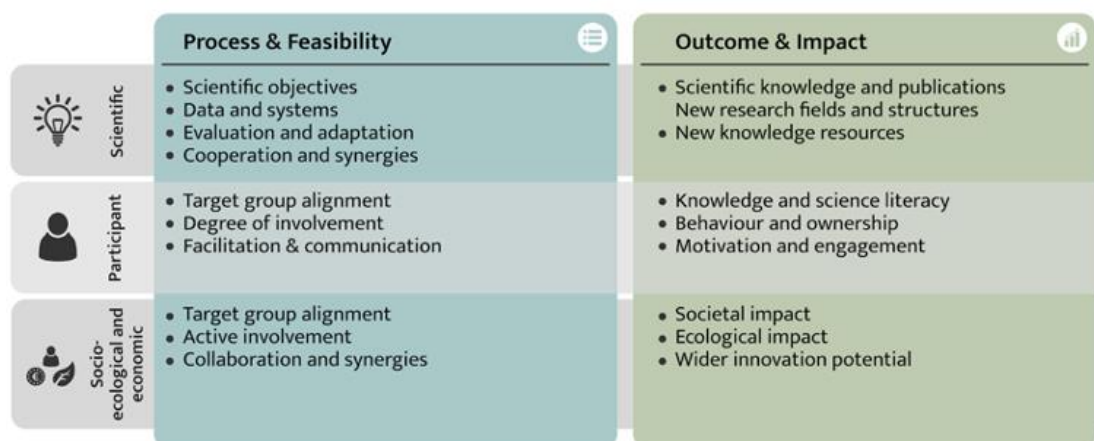


Figure 13: Citizen Science Evaluation Framework by Kieslinger et al., 2018

Building on the findings described in D7.2, which had a more formative or process-oriented view, we will focus our analysis in this document on the achieved and prospective impact across the cases. Following the structure of the framework, which served also as the basis for our combination of inductive and deductive handling of the data, we will arrange the discussion of our analysis along the three main aspects: 1) scientific impact, 2) impact on the engaged actors, and 3) societal impact, followed by a general reflection on challenges and limitations.

### 5.2.1 Scientific Impact

The scientific impact of CoAct has been measurable at various levels: CoAct has contributed to **expanding the knowledge base** on the specific areas of interest in which the different R&I Actions were embedded. Most importantly, these newly gained scientific insights are characterised by the active involvement of people or collectives whose daily lives are directly impacted by said issues. Thus, it was possible to generate data that would not have been available without their active contributions. The research teams confirm that science or scientific findings and its generated data gain in quality with the inclusion of citizens as Co-Researchers and following a participatory approach.





*"Citizen Social Science gave us totally new perspectives and causal insights, which were blind spots before. It ignited new conversations and sparked new potential, as it helped us also to make visible the capacities that were already there, but not made productive."* Stephanie von Behr, director of CSO Founderland

CoAct has thus had an important impact on advancing Citizen Social Science in various ways. It has contributed to an **increased visibility and acceptance of Citizen Social Science** as a scientific practice. We could find evidence for increased awareness for CSS practices across all actors: citizens and communities, policy makers, and scientists. While the original policy makers to be addressed by the project were those working in the specific topic areas (e.g. environmental or health policies), it was somewhat surprising to see that CoAct research teams were also able to impact research and innovation policy makers, especially in the case of Argentina.

The experiences in CoAct led to **new methodological insights** that impact the scientific practices of the involved actors within their institutions and beyond. This includes improved methods to learn from and with communities (and not individuals), improved approaches to handling informed consent procedures and project evaluation (co-evaluation), an improved understanding and approaches for project planning considering flexibility issues, as well as new tools for Citizen Social Science that can be applied in other contexts and in new projects.

*"Through the continuous support of the CoAct partners we have not only acquired new tools and methodologies that we are now going to use in a host of other projects of ours, but we have also realised how much of our work over the last 10 years has been based on those same principles, even without us fully knowing it."* Stella Kasdagli, co-founder of CSO Women on Top

Some of these methodological insights have already led to Open Educational Materials for further training in CSS and have been applied in successor CSS projects. While these are all important indications, we do expect more long-term scientific impact to come with the further dissemination of upcoming publications, the sharing and reuse of the generated data, and further methodological advances.

### 5.2.2 Impact on Engaged Actors

The involved citizens, citizen communities and civil society groups actively shaped the research processes in all CoAct R&I Actions, and their expertise and lived experiences formed the basis for



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all generated outputs of the project. For Citizen Social Science their active participation is crucial. Actively contributing to the research process, even driving it at times, was not only beneficial to the scientific impact of the actions, it also affected the engaged actors at an individual, often very personal, level.

What we have observed across the cases is an **empowerment of individuals**. While this effect has already been noted during the mid-term evaluation, at the end of the project this effect was further elevated by more direct interaction with decision makers at various levels. Most prominently, this entailed the creation of scientific evidence that in turn is contributing to public discourse and long-term change. Especially in vulnerable situations, participants realised a de-individualisation of their issues, achieving a better understanding of their societal situatedness. In the case of participants from Barcelona, the de-stigmatisation of mental health issues was felt at a very personal level. The feeling of empowerment is enforced for some of the participants by the fact that they are now actively contributing to policy making, either by monitoring the policy advances (e.g., Barcelona) or by actively contributing data that is feeding into policy changes (e.g. Buenos Aires).

*"From these small daily moments to the great moments of life ... All of us who have participated in the generation of chatbot stories have shared thousands of vital moments and have come out very strengthened and empowered. Now you can be part of a great social support network by joining this great common Citizen Science effort."*

Co-Researcher testimony

As in many Citizen Science and participatory projects, we can also observe a number of **learning outcomes**. An increase in knowledge and skills on the side of all actors has originally been envisioned, and we do have concrete evidence that learning has taken place at an individual level. Some of the participating actors were completely new to scientific methods and clearly advanced their skills throughout the whole research process, from the clear definition of research questions, the design of questionnaires or other data collection instruments, to scientific data analysis and presentation techniques. The learning effects have also been confirmed by the participating scientists. Most of them were able to expand their repertoire of participatory methods, which they are planning to apply in future participatory projects and in some cases, transferring their gained experiences to others via experience sharing and the provision of open educational resources.

Next to the methodological skills, participants also expanded their knowledge on the respective topic of concern, increasing their **personal awareness** of the issue. In the case of Buenos Aires,



e.g., people take more notice now of the river and its role in the local ecosystem. In Barcelona, individuals with mental health issues and their carers are more aware that others have the same issues and that they are not alone, similar to the mutual support that participants from Single Step in Bulgaria have reported.

Through collaborations in the various actions, the **personal contacts and networks** of involved actors were increased and strengthened. There are indications that the intensified connections amongst some of the participants will last beyond the project. Concretely, in the case of the mental health group in Barcelona, the establishment of contact points for affected individuals has already been planned.

### 5.2.3 Societal Impact

As a Citizen Social Science project, CoAct was following a **transformative perspective**. The starting point for each of the actions was a social concern that required policy action to realise the expected social change. From the very beginning, CoAct laid the foundation for translating co-developed scientific findings into policy action, by involving relevant policy stakeholders and civil society organisations. As each R&I Action of the CoAct project developed its findings into a variety of policy relevant documents or events, the scientific evidence created through the co-research process directly informed decision makers.

On a societal level, it is thus safe to say that the various CoAct actions contributed to policy setting and it has already started to create concrete **political impact**, as new policy measures are currently defined, based on insights from the projects' citizen participation. We have identified very concrete favourable conditions that serve as possible pathways for transformation in at least two of the R&I Actions. These include recently approved laws that request public participation and implemented policy changes in the topic of concern. In other cases, there are affirmative statements from policy actors that give credence to the policy influence of CoAct activities.

Overall, the engagement of all stakeholders and the efforts dedicated to establishing the Knowledge Coalitions created benefits at organisational level and across them. The participatory actions **strengthened the collaboration** between CSOs, NGOs, public authorities and academia. This impact is confirmed by our data, which already mentions some follow-up activities across some of the stakeholders (such as in Buenos Aires and Barcelona), as well as the positive networking character the Knowledge Coalition had (such as in Vienna). Very concrete examples of the strengthened collaboration between science, society, and policy are also the newly created



exchange platforms and initiatives for continuous stakeholder collaboration, such as the Assembly for Mental Health working group in Barcelona or the ¿Qué pasa, Riachuelo? Citizen Science platform in Buenos Aires.

Another important societal impact that the project has achieved is the better understanding of the potential of using Citizen Social Science in **science-policy-society interactions**. Policy makers have started to recognise the value of citizen-generated data for policy making. This is confirmed across all cases, as political decision makers report valuable experiences through this participatory exchange they did not previously have.

*"Policy makers highly value these types of inclusive knowledge of social issues, because they do not have the means to generate these insights themselves."* Júlia Miralles de Imperial, Delegate for Science and University Policy at the Barcelona City Council

The transformative character of the CoAct R&I Actions led to the creation of collective action, building on the de-individualisation of problems. While this effect has already been mentioned with regard to the impact on individual actors, this collectivity also has a wider social impact. We have not only noted empowerment of individuals, but also empowerment for disadvantaged groups and increased civic engagement across the involved local or regional communities. Participants report that they feel such **collective empowerment** was achieved through access to tools of systematic observation and documentation and community building activities, which are part of the participatory research process. This community building and community strengthening activities contributed to fostering self-sustained communities of practice.

The **increased awareness** for topics of concern has also been mentioned at an individual impact level. Yet it is worth noting that we also recognise a growing awareness across the population at large, or at least beyond the participating actors. In the case of mental health issues (Barcelona) or women working from home (Women on Top), the COVID-19 pandemic clearly pushed the topic to wider societal recognition. As previously noted, this actually served as a favourable condition driving societal awareness. In other cases, conditions were less favourable, such as the still existing reservations against the trans and non-binary community in Bulgaria reported by Single Step. However, through the CoAct participatory action, the research team at Single Step noted a positive change in perceptions and is keen on continuing their activism.

Finally, the **educational perspective** of the actions has also created impact at societal level. While the above-mentioned increased awareness may be seen as a learning process, there are



also clear indications of educational impact that the actions have created with their open learning resources that will be used even more in the future.

*"...interactions with stakeholders made us realise the potential of combining Citizen Social Science with environmental education to promote transformation towards Environmental Justice."* Valeria Arza, CoAct researcher at UNSAM

Fig. 8 depicts the various impact levels that have been achieved across the various actions of the CoAct Citizen Social Science project.

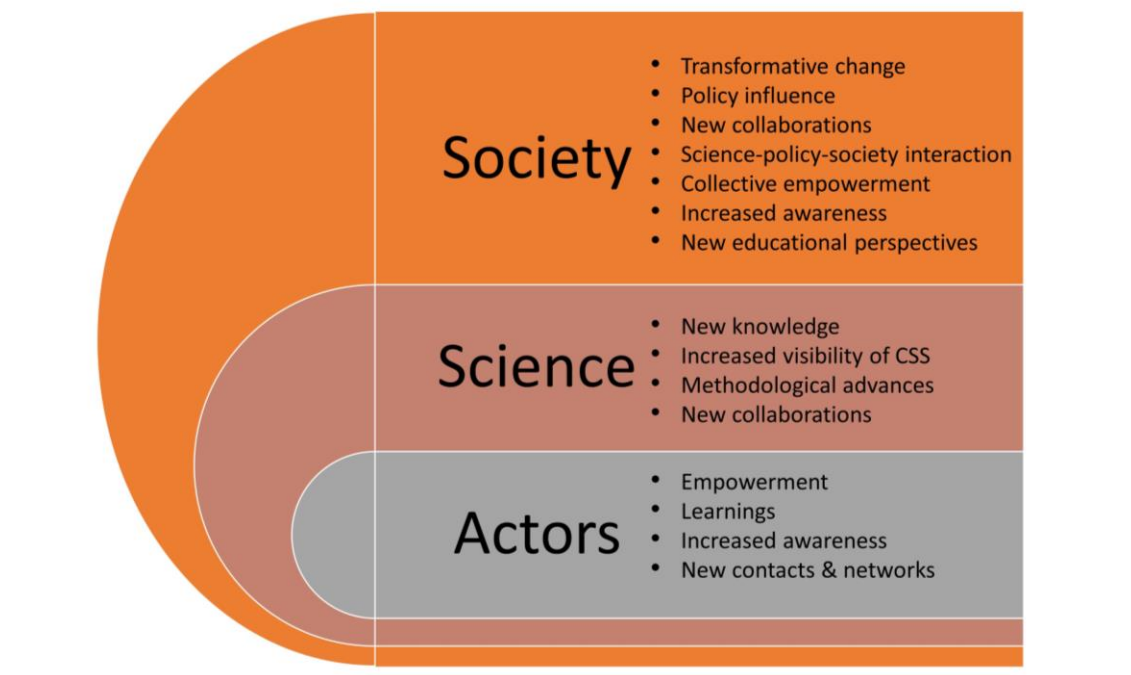


Figure 14: Impact levels of CoAct Citizen Social Science actions

### 5.2.4 Challenges for Impact

Challenges and limitations of implementing Citizen Social Science practices have already been described in D7.2 and have been reflected again in the policy report D2.5. Here, we would like to point out the core challenges that we have detected in our data analysis that relate specifically to the update of project results and sustainable impact.

Most importantly, a challenging factor for any transformative action is the provisioned timeframe. The funding period of three years is often too short for a research and innovation action to generate measurable long-lasting societal impact. We have observed across all CoAct case actions that implementing a successful participatory process based on trustful relationships takes



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considerable resources and requires more time than often foreseen, especially when activities have to be flexibly adapted to the requirements of the participants and external factors such as COVID-19. Thus, most of the cases are still working towards the publication of their scientific papers, providing access to their open data or launching the platform. For the gender equality cases, it was even more challenging, as they were working with a much tighter schedule. They all confirmed that it is hard to achieve scientific impact during the project time. Publishing papers, seeing whether they are read and cited, and noting whether data is taken up and used for further research definitely needs time to unfold.

Likewise, policy change is not taking place in the short term. Thus, any impact assessment that ends with the funding period of the research process can only collect indications that show the likelihood of recommendations being taken up and leading to change. It would need a much longer timeframes and follow-up monitoring activities to show long-term societal impact.

A core factor for policy recommendations to be taken up is the socio-political context in which the action is embedded. In our cases, we have seen some favourable and some challenging conditions, influenced by the political situation in each country. When the political system changes, e.g., after elections, the conditions for policy impact may completely change as well.

## 6 CoAct Indicator Set

The CoAct project enabled a rich set of outcomes spanning scientific, social, and political impacts.

### 6.1 Key Performance Indicators – KPIs

Next to the specific indicator matrix for each of the R&I Actions, we also defined a set of KPIs to be gathered across the R&I Actions that can be regarded cumulatively as general project KPIs. The three indicator tables above, each corresponding to one of the three R&I Actions, all feed into achieving these general KPIs, which were complemented with the impact achieved by the gender-equality R&I Actions of WP6. These key performance indicators were pre-defined during the project set-up and have already been presented in Deliverable D7.1 (Schäfer et al. 2020) and interim results included in D7.2 (Kieslinger et al. 2021). The following table shows the KPIs at the end of the funding period of CoAct. The numbers in bold indicate the achieved results, while those in (parenthesis) are the expected numbers defined at the proposal stage.



	Co-Researchers & Citizen Scientists	CoAct Professional Researchers	Knowledge Coalition
Output	<p><b>313</b> (+250) Co-Researchers engaged in CoAct R&amp;I Actions</p> <p>1040+ citizen scientists engaged (broader engagement)</p> <p><b>160</b> (+70) Co-Researchers trained on (open) data literacy</p>	<p><b>3</b> (+3) inclusive and open tools created for Citizen Social Science practices, open access on GitHub/Zenodo and CoAct website</p>	<p><b>240+</b> (+15) public bodies and institutional representatives effectively engaged in R&amp;I Actions<sup>4</sup></p> <p><b>2</b> (+2) new digital platforms for collaborative Citizen Social Science created and open access on GitHub</p>
Outcomes	<p>most (+70%) of Co-Researchers interested in further participating to R&amp;I processes<sup>5</sup></p> <p>most (+70 %) of Co-Researchers felt that they really contributed to the research and innovation process<sup>6</sup></p> <p><b>7</b> public and/or scientific conference presentations of results by Co-Researchers</p>	<p><b>0</b> (+5) Open Access scientific papers with Co-Researchers as co-authors (2 in preparation)</p> <p><b>15+</b> (+4) scientific Open Access papers<sup>7</sup></p> <p><b>40+</b> (+15) CoAct presentations at international scientific conferences, open access on Zenodo</p>	<p><b>2</b> Whitepapers</p> <p><b>4</b> (+3) actions plans or better or new policies measures proposed</p> <p><b>24</b> (+20) public and/or scientific conference presentations of results made by Co-Researchers, open access on Zenodo and CoAct website</p>

Table 5: Overview of CoAct Results

<sup>4</sup> While we could reach a high number of people in our Knowledge Coalitions, not all participated as *representatives* of their respective public bodies or institutions. Rather, some explicitly joined as individuals with a personal interest in the project who, as *members* of these institutions, provided highly specialised knowledge and institutional expertise.

<sup>5</sup> Due to the specific structural contexts in which the R&I Actions operated, as well as the general approach of allowing Co-Researchers to participate in the formats and intensities that best fit their needs and interests, it was not possible to systematically collect data to evaluate this performance indicator in a quantitative form. However, the feedback received from participants was overwhelmingly positive and often exuberant.

<sup>6</sup> Similarly to the above indicator, while participant feedback was overwhelmingly positive and Co-Researchers tended to assess their participation as meaningful, it was not possible to collect this data in a systematic way, making the evaluation of this indicator impossible in this quantified form.

<sup>7</sup> While 15 Open Access papers have currently been published by CoAct partners, there are additional papers not yet published currently being written or already in review. If accepted by journals, all will be available in Open Access.



Next to the quantitative KPIs, the project also worked with qualitative R&I Action indicators to understand outputs and outcomes from each action in more detail and see which R&I Action impacted the participating Co-Researchers, professional researchers and Knowledge Coalition members in the short- and long-term.

## 6.2 Co-Created R&I Action Indicators

In Chapter 4, we introduced the outputs, and intermediate and long-term outcomes that we expect from the Citizen Social Science activities, addressing Co-Researchers, professional researchers, and Knowledge Coalition members for each of the R&I Actions. A first version was presented in Deliverable D7.1 (Schäfer et al. 2020) an update in D7.2 (Kielsingner et al. 2021). The following table summarises the co-created, mostly qualitative, CoAct indicators across the three R&I Actions at the end of the CoAct funding. As presented in Chapters 4 and 5 above, we found evidence for all these indicators across our cases with the long-term indicators clearly not fully realised yet, but showing indications of their potential realisation in the future.

	Co-Researchers & Citizen Scientists	CoAct Professional Researchers	Knowledge Coalition
Output	Engagement of identified and involved Co-Researchers Workshop and engagement opportunities organised; active engagement of Co-Researchers Perceived usefulness of engagement activities and research process	Developed methods and a process how to involve citizens in Citizen Social Science; formative feedback and practical experience Developed prototypes, tools and materials that help to investigate the research topic Crowd-sourced data Open discussions on social problems and potential solutions	Knowledge coalition members identified and actively involved; workshops, interviews & bi-directional meetings, other engagement opportunities organised; Perceived usefulness of workshops and involvement activities Policy briefs and guidelines





<b>Inter-mediate outcomes</b>	Capacity building, increased knowledge Engagement, Mobilisation Awareness, consciousness, understanding of the topic under research Higher data literacy Better understanding of Citizen Social Science processes	Richer expertise on the case-specific social topic under investigation Lessons learned and experiences on Citizen Social Science processes (what works and what does not work) New insights into social impact assessment of Citizen Social Science activities Scientific publications Open Data publication (upcoming)	Capacity building of the Knowledge Coalition members Networking and experience exchange with other stakeholders Acceptance of citizen expertise by authorities; learning about the living world of citizens. Better understanding of Citizen Social Science and how it aims to address the selected societal challenges
<b>Long-term outcomes</b>	Empowerment Decision power Self-determination Improved quality of life Alternative and appropriate measures that address the case-specific social challenges	Validity of Citizen Social Science models for policy making Sustainable links to the Knowledge Coalition members New research questions related to the topic of research and Citizen Science practices Scientific publications (upcoming, some co-authored with KC and CoRe members) Enhancement of multi- and transdisciplinary research processes	Implementation of new tools and strategies to address the case-specific social challenges Changes of regulations

Table 6: Co-created R&I indicators

## 7 Capacity Beyond the Project

Deliverable D7.2 (Kieslinger et al. 2021) includes a set of activities that contributed to capacity building in co-evaluation beyond the project consortium. In the course of three years, we reached out to the wider Citizen Science community to share experiences on participatory evaluation. The event-focused activities, which are described in detail in D7.2, include a webinar, a conference workshop, a summer school session, and a full conference track.



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In the final project year, we shifted our activities from an events-focus to a more publication-focus approach and brought forward some important contributions to advance the international discussion on participatory evaluation in Citizen Social Science. These publications are presented in the following:

## 7.1 Special Issue: Participatory Evaluation and Impact Assessment in Citizen Science



### Assessment in Citizen Science

The ZSI team edited a special issue of the open access fteval journal. The fteval Journal for Research and Technology Policy Evaluation positions itself at the interface between research and technology policy practice and academic quality, thereby contributing to the exchange between the various stakeholder groups in the RTI evaluation field. The special issue was published in June 2022 with 8 contributions (Mayer et al. 2022).

<https://repository.fteval.at/id/eprint/625/>

## 7.2 Whitepaper on Co-Evaluation in Citizen Social Science



The Whitepaper on Co-evaluation in Citizen Science (Deliverable D7.3; Kieslinger et al. 2022) is based on the co-evaluation experiences of the three main R&I Actions of CoAct. It presents its core set of six principles that CoAct has identified as highly relevant for implementing co-evaluation practices in Citizen Social Science. They are intended to guide the participatory approach to project evaluation and to sharpen the focus for impact assessment. In addition to the findings from CoAct, the public consultation process led to additional reflections with other participatory researchers from a global community, who shared their experiences and added valuable insights to advance the principles for co-evaluation.

The Whitepaper was presented to a wider audience for the first time at the international ECSA Conference 2022 in Berlin, where it received a lot of attention and recognition from the community. It will hopefully spark more participatory approaches in evaluation in the future.

<https://zenodo.org/record/7139025#.Y43pduzMKcg>



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### 7.3 Other Publications and Presentations Reaching New Audiences

Marschalek Ilse, Kieslinger Barbara, Schuerz Stefanie, Schaefer Teresa. Adapting public funding schemes for participatory research: Managing expectations, overcoming structural constraints. Proceedings of Science (PoS). PoS(ACSC2021).

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Mayer, K., Schürz, S., Kieslinger, B. und Schäfer, T. (2022). Transformation messen und verstehen: partizipative Evaluationsansätze für Citizen Science. In: Howaldt, J., Kreibich, M., Streicher, J. und Thiem, C. (Hrsg.): Zukunft gestalten mit Sozialen Innovationen. Neue Herausforderungen für Politik, Gesellschaft und Wirtschaft. Campus-Verlag. S. 207-223. [https://www.campus.de/produkt-detail/zukunft\\_gestalten\\_mit\\_sozialen\\_innovationen-17595.html](https://www.campus.de/produkt-detail/zukunft_gestalten_mit_sozialen_innovationen-17595.html)

## 8 Conclusions

CoAct has been overall a long and intense learning journey for all engaged actors. It brought forward highly relevant results that have already started to impact individuals, communities as well as science and society at large. And there are indications that this impact will increase in the future. We have learned about the needed flexibility and trust in the process, the importance of networks and collaborations with all stakeholders, as well as the benefits of finding favouring socio-political conditions.

The transformative perspective of Citizen Social Science has been very present from the beginning, by involving Co-Researchers early on, also in the evaluation process. Thus, each of the R&I Actions were driven by the clear aim to contribute to transformational change, while generating scientific knowledge was almost considered a subgoal by some participants. However, while the scientific outcome was not so much in the focus, embedding the actions in an authentic scientific process has been key from another perspective. It gave credibility to the action and was important for the justification of the created evidence.



From the implementation of the co-evaluation we have also learned a lot. It has been very rewarding to find evidence that some stakeholders gradually took on more ownership during the process. An important lesson learned is the challenge that we still need to develop better mechanisms to feedback the ongoing co-evaluation systematically into the ongoing research process, while evaluation and impact assessment need to find a balanced engagement and be focused. We should not try to co-evaluate everything, but rather find a way to best integrate co-evaluation activities naturally in the participatory research process.

The co-evaluation principles published in the Whitepaper have already gained attention at international level across Citizen (Social) Science actors and we expect to work further with them and continue to shape the discourse on participatory evaluation methods in the future.

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## Annexes

### Annex 1: Table of Data Sources for Qualitative Coding

The following data was used in addition to the data depicted in D7.2 Interim Impact Assessment Report (coded documents marked orange):

Spain	Austria	Argentina	Founderland	Step Change	Women on Top
Policy brief	Policy brief	Policy brief	Policy brief	Policy brief	Policy brief
Final Self-assessment	Final Self-assessment	Final Self-assessment	Final Self-assessment	Final Self-assessment	Final Self-assessment
Impact house	Impact house	Impact house	Impact house	Impact house	Impact house
KPIs table	KPIs table	KPIs table	KPIs table	KPIs table	KPIs table
Roadmap	Roadmap	Roadmap	Video transcript final event	Video transcript final event	Video transcript final event
Observational notes from BCN Open Meeting	Roundtable Results	Transcripts of video testimonials	Final report	Final report	Final report
Mentimeter + Padlet from CoRE + KC meeting on expectations & outcomes	Project Report (German)	Blog posts on project implementation with libraries	Grantee workshop documentation	Grantee workshop documentation	Grantee workshop documentation
Testimonials by co-researchers and chatbot participants	Final KC Meeting: Observational notes + padlets	Agreement on collaboration with the Professorship and the Dean of UNSAM institution			
Newspaper article with quotes from policy makers	Interview with 2 policy makers	Documentation of policy workshops on linking Citizen Science to policymaking processes: National Ministry of STI National mapping of CS initiatives CoAct's information post about policy workshop			



Video testimonials	Observational notes and Miro reflection board with KC	Documentation of hackathon with professorship: First contact through the library that was involved in the water quality theme of the platform's co-design Co-design of platform's use in environmental education activities			
	Evaluation event: Observational notes, Kahoot reflection				
	Various videos with calls to action developed by and with young peoples				

## Annex 2: Detailed KPI Tables

### Annex 2.1 KPI Table Barcelona

	Co-Researchers & Citizen Scientists	CoAct for Mental Health Professional Researchers	Knowledge Coalition
<b>Output</b>	<p>x 32 Co-Researchers signed IC, wrote 222 microstories and were involved in chatbot co-design: 24 CoRes with experience of mental health, 8 relatives, 2 double profiles.</p> <p>x During the last phase of collective data interpretation and transformation into actions, 10 Co-Researchers participated very actively (3 face-to-face sessions of 3 hours).</p>	<p>x Developed methods on how to engage Co-Researchers in all research phases; formative feedback from Co-Researchers: Yes: 'cooperative approach which complement heterogeneity (of motivations, interests, abilities, weaknesses etc..) and place strong emphasis on human relationship building. Also: online co-design sessions with reduced groups of Co-Researchers to give room to everybody to feel comfortable and have a voice. Also: research diary to support the Co-Researchers during the codesign process. Also: informal communication channels (i.e., email) to share questions, doubts and/or</p>	<p>x 65 Knowledge Coalition members at the local (Barcelona), regional (Catalunya), national (Spain) and international levels</p>



	material that the Co-Researchers wanted to share. Also: a web platform with private space for the Co-Researchers where all the session material is shared	
<p>x 718 chatbot users (Citizen Scientists) formed the IC and are participating in the research. Data from 06.11.2022: individuals with an experience of mental health, families, informal caregivers, professionals and anyone concerned by mental health.</p> <p>x 3 out of 4 chatbot participants experience or have experienced mental health problems. 3 out of 10 chatbot participants identify themselves as caregivers. 7 out of 10 chatbot participants are women.</p>	<p>x Developed methodologies for collective data interpretation; formative feedback from Co-Researchers and citizen scientists: a set of methodologies and practical exercises have been developed based on gamification and data literacy concepts. The corresponding tool can be found in the CoAct toolkit.</p>	<p>x 1 plenary session to present the projects (july 2020); 2 participatory evaluation session to discuss what is being done around social support networks in mental health, what is working well and what should work better (July 2020 and September 2020); chatbot launching together with the Co-Researchers (july 2021); presentation of communication material and diffusion strategy (october 2021); 3 collective data interpretation sessions (May and September 2022); a collective session with Co-Researchers (October 2022).</p>
<p>x 2 plenary session at the beginning of the codesign to explain the project (Nov 2020)</p>	<p>x A set of crowd-sourced data related to social support networks in mental health: Data from multiple sources: on the one hand the lived experiences of the Co-Researchers which represent the very same definition of social support strategies in mental health from the lived experience. On the other: the chatbot data. A very rich set of data was analysed, opening the way to a new way of "hybrid" citizen social science based on qualitative and quantitative data.</p>	<p>x policy recommendations: 14 policy recommendations have been delivered.</p>
<p>x 1 focus group session to explore motivations, expectations and perspectives on social support networks in reduced groups (Dec 2020)</p>	<p>x New approach for IC process, including new materials (e.g., video) and a wider timescale (see Deliverable D3.2)</p>	





	x 3 co-design session in small groups (5 to 12 people per group) to co-design the chatbot (Jan2021-Feb2021)	x Developed prototypes of materials and tools; formative feedback from Co-Researchers: Yes: Chatbot prototype; Research diary; CoActuem web platform; Communication material (emailing, material for social networks, animated videos) and video of Co-Researcher testimony.	
	x 1 plenary session to share the co-design experience and results between Co-Researcher groups (March2021)	Validation of methodologies that can involve Co-Researchers over a long period of time (more than 2 years) and place them at the centre of the research.	
	x 3 chatbot testing session to test the chatbot functioning, user experience and collect feedback with the Co-Researchers (March2021-April 2021)	Validation of the "people to people" chatbot as a useful tool for citizen social science research.	
	x 2 launching session: one with Co-Researchers only and 1 with both Co-Researchers and Knowledge Coalition (July 2021)	Validation of microstories writing as a new and powerful tool to engage Co-Researchers and the society at large.	
	x 1 conference abstract drafted together with the Co-Researchers (September 2021)	The project was presented in a variety of local, national and international conferences and public events. The researchers were also contacted in order to present the results to other institutions, for example ones promoting the work of people with mental health problems.	
	x 2 conference presentations done between one member of the professional research team and one member of the Co-Researcher team (September 2021)		



	<p>x 2 follow-up sessions to prepare official launching of the chatbot and brainstorm communication materials and strategies (including a workshop on 'communication tips') (October 2021)</p>		
	<p>x 1 physical meeting to get together and to record a testimonial video (November 2021)</p>		
	<p>x 2 physical meetings to collective analyse the chatbot data (6 and 20 May 2022). 3h each</p>		
	<p>x 1 physical meeting to conclude the data analysis and propose actions (14 September). 3h</p>		
	<p>x 1 online meeting with the Knowledge Coalition to prepare the Final Assembly (October 2022)</p>		
	<p>x Participation of 9 Co-Researchers in the Final Assembly (18th November)</p>		
	<p>2 Co-Researchers presented the project in 4 scientific conferences (local and international)</p>		
	<p>5 Co-Researchers participated in a public event at Canodrom, a public presentation at Psychology Faculty and a presentation at the Mobile World Congress</p>		
	<p>2 Co-Researchers were interviewed for the CoAct videos</p>		



	of the toolkit		
	2 Co-Researchers were interviewed in Radio and TV.		
<b>Inter-mediate outcome</b>	<p>× Self-reflections on Co-Researchers’ role inside mental health ecosystems: Most individuals with experience of mental health issues were strongly advocating for the importance to include the experience of first persons when discussing mental health issues. Yet, they commented that listening to other Co-Researchers during the co-design sessions in small groups helped them to look at certain situations or lived experiences from another perspective, this was especially the case in 'mixed' groups (with both relatives and individuals with a mental health experience): they said that listening to the lived experience of a relative (or of a Co-Researcher) helped them to understand certain situation or lived experience from another angle. This was also the case for the microhistory drafting process: some Co-Researchers said that by putting down into words and thinking about present or past situations (and difficult moments) helps him/her to take perspective and acknowledge his/her personal growth</p>	<p>× New insights about the co-research process: A) What worked well: strong emphasis on human relationship building; the research diary; informal communication channels. B) What did not work so well: in terms of participants profiles: the majority are women, and there are no young participants (below 30 years old); also: the size of the Knowledge Coalition group reduced from one year to the other, maybe we could find better strategies/dynamics to engage Knowledge Coalition members (yet on a different levels compared to Co-Researchers)</p>	<p>× Better understanding and awareness of social support networks: Yes.</p>



	<p>x Awareness for and understanding of social support networks in mental health: In general, all the Co-Researchers advocated for the importance of social support in mental health since the very beginning (many are part of some mental health advocacy group) so they were already aware of its importance before the project. What they did share is that during the co-design process, by listening to others' lived experiences, they learned new resources or support strategies that they were non aware of. Also, they are particularly aware of the importance that others (namely society at large) understand the importance of social support networks in mental health.</p>	<p>x New insights into social impact assessment of citizen social science activities: the impact has been assessed at individual level (see Co-Researchers' storytelling). At the policy level, at least two high profile policy makers (director of the Catalonia Mental Health Pact and Barcelona Commissioner for Health) compromised themselves to implement the recommendations in their upcoming action plans: Barcelona Mental Health Plan 2023-2027 and National Mental Health Plan.</p>	<p>x Networking and experience exchange with other Knowledge Coalition members: partly</p>
	<p>x Higher data literacy of Co-Researchers: they have participated to 3 collective data interpretation sessions where such concepts were explained and worked on: demographic survey, representativity, statistics, networks theory and node degree. 22 scientific observations were collectively discussed.</p>	<p>x New insights about roles and behaviour of all members of the mental health care ecosystem: ongoing work, from the chatbot data.</p>	<p>x Better understanding of citizen social science and how it aims to address societal challenges: yes.</p>
	<p>x Better understanding of citizen social science process: certain committed Co-Researchers pointed out the importance of citizen social science projects in the sense of having 'their voices heard' while emphasizing the importance of undertaking the research together with professional scientists who could guide them through the process. They said</p>	<p>x Lessons learned on how to use crowd-sourced data to understand mental health care ecosystems: Yes. Important advances have been made in order to relate chatbot data and social support networks functioning.</p>	<p>x Popularization of the Citizen Social Science "culture" for civil society organisations. x Favouring the approach/dialogue to institutions of Co-Researchers and civil society organisations.</p>



	<p>that it is exactly the central/organisational role and strategies of professional scientists that helped the whole process</p>		
<p><b>Long-term outcome</b></p>	<p>6 Co-Researchers participated in an in-depth interview with a graphic artist in order to allow her to draw their personal experiences in the form of storytelling. Final artworks are available <a href="#">here</a>:</p>	<p>x Scientific publications: Not yet</p> <p>x New research collaborations with KC members and/or through TECSAM and other municipal/regional/international networks. New data for scientific research.</p> <p>x Development of tools to be reused in future citizen social science projects.</p>	
	<p>10 Co-Researchers actively participated in the final phase of collective data interpretation and action proposals. They have expressed their willingness to continue to be involved in the project and wish that the project do not abruptly stop. 14 Policy Recommendations were elaborated and presented by them to the Barcelona and Catalonia Public Authorities.</p>		



## Annex 2.1 KPI Table Vienna

	Impact on actors/participants	Scientific impact	Socio-political impact
<b>Output</b>	<p>All in all, we worked with 180 young people in social employment measures in various formats.</p> <p>x 12 young people participated in talks about the changes in how measures were implemented due to COVID-19</p> <p>x 7 young people participated in a 2-day online pilot research session</p> <p>x 26 young people participated in research weeks</p> <p>x 18 young people participated in 3 Roundtables with stakeholders of E&amp;T up to 18 to discuss the main outcomes and formulate ideas for solutions in a collaborative manner</p> <p>x 80 young people participated in a two-day special event to participatorily evaluate a low threshold measure. The event was accompanied by graphic recording to directly visualize the discussions of young people.</p> <p>x 25 young people participated in the development of the research tool Actionbound "Action Research on Education and Employment"</p> <p>x 12 young people participated in the development of the research tool "FAB!" which is a board game</p> <p>4 videos were produced as a result of the research weeks together with young people who participated in the</p>	<p>x 2 tools developed for a low threshold approach to social science research also usable by professional researchers in their participatory research projects</p> <p>x advancing informed consent procedures with visual materials and discussions</p> <p>x creating material (videos) based on Co-Researchers' results</p> <p>x Developed methods and a process on how to involve underage Co-Researchers in all research phases</p> <p>x Negotiations with young people about social methods for youth employment &amp; their adaptations</p> <p>x Rethinking and adopting new social methods for youth employment</p> <p>x Defining new methodological questions</p> <p>x Developed prototypes of youth employment measures and tools (also an output for Co-Researchers); formative feedback from Co-Researchers</p> <p>x 1 Exhibition about the main results of the co-research process visited by researchers from various fields of participatory research.</p> <p>x 1 presentation of the outcomes and demands of young people at the Tyrolean steering group about young people not in education, training or employment. The presentation of the results were commented by a member of the Institute for Advanced Studies. 40 people visited the event.</p> <p>x 1 Panel discussion about the potential of participatory research for</p>	<p>x 10 conversations with KC members on E&amp;T up to 18</p> <p>x 3 Meetings with KC members (all)</p> <p>The third meeting discussed the demands developed in the co-research process with young people in regard to implementing ideas in the current educational landscape in Austria.</p> <p>x 6 Meetings with social and youth workers, trainers and other practitioners of E&amp;T up to 18</p> <p>The meetings provided a platform for social workers to discuss their challenges when working with young people in E&amp;T up to 18 measures and enabled cooperation and the discussion of initial results for application in practice in low threshold E&amp;T up to 18 measures</p> <p>x 3 Roundtables with altogether 6 policy stakeholders to discuss the main outcomes and formulate ideas for solutions in a collaborative manner with young people</p> <p>x 1 cooperation with the federal ministry of labour and economy regarding the special event to participatorily evaluate a specific low threshold measure of E&amp;T up to 18</p> <p>x 1 report (print &amp; online) in German for policy makers based on the co-research activities with young people, featuring the demands and outcomes for improving social policy measures for young people who dropped out of regular educational settings</p> <p>x 1 presentation of the outcomes and demands of young people at the Tyrolean steering group about young</p>



	<p>research process.</p> <p>3 graphic recording posters were produced, summarizing the discussions at the roundtables about the main challenges identified by the Co-Researchers and possible solutions on how to improve social policy measures.</p> <p>2 tools as part of the Inclusive Toolbox for Citizen Social Science were created and are openly accessible to be used by young people, educators and researchers in the future</p> <p>1 report (print &amp; online) in German for policy makers based on the co-research activities with young people, featuring the demands and outcomes for improving social policy measures for young people who dropped out of regular educational settings</p> <p>1 Exhibition about the main results of the co-research process. 29 young people and their trainers of E&amp;T up to 18 measures visited the exhibition and took part in a quiz designed to familiarize young visitors with the content.</p> <p>1 Instagram profile continuously informing about the research processes</p>	<p>transforming social policy with with 3 discussants from participatory research projects. 19 visitors attended the panel discussion.</p> <p>x 1 teaching session with social work students from Switzerland</p> <p>x 1 event in cooperation with the Data Protection Officer of the University of Vienna on legal and ethical aspects of informed consent</p> <p>x Presentation of various results of R&amp;I Action #2 at over 8 conferences from the fields of Citizen Science, Social Work, Sociology and others (including 3 keynote lectures at national conferences)</p> <p>x Initiation of a local participatory research exchange group together with other participatory researchers</p> <p>x 1 paper on feminist ethics and informed consent</p> <p>x 1 paper on challenges young people face during the transition from school to work</p> <p>x 1 homepage in German featuring continuously the outcomes of the research process and the materials generated during the process</p> <p>x 1 report (print &amp; online) in German for policy makers based on the co-research activities with young people, featuring the demands and outcomes for improving social policy measures for young people who dropped out of regular educational settings</p>	<p>people not in education, training or employment.</p> <p>x 1 exhibition about the main results of the co-research process visited by several members of the Knowledge Coalition</p> <p>x 1 presentation about the main results of the co-research process in the course of the exhibition, visited by several members of the Knowledge Coalition. 40 people visited the event. The presentation of the results were commented by a member of the Institute for Advanced Studies</p> <p>x 1 Homepage in German featuring continuously the outcomes of the research process and the materials generated during the process</p> <p>x 1 Instagram profile continuously informing about the research processes (also connected with numerous youth work institutions)</p> <p>x 2 tools as part of the Inclusive Toolbox for Citizen Social Science were created and are openly accessible to be used by young people, educators and researchers in the future</p> <p>all in all, 73 KC members from various fields connected to E&amp;T up to 18 e.g., ministries, administration offices, social workers and coaches, coordination offices, researchers, youth organisations participated in activities of R&amp;I Action 2.</p>
<p><b>Inter-mediate outcome</b></p>	<p>x reflection on and evaluating their experiences in educational institutions</p> <p>x self- confident expression of experiences and reflections</p> <p>x experiencing that young people's opinions matter</p> <p>x being author/co-creators of videos for dissemination of</p>	<p>x learning from practice of co-creation for further Citizen Social Science research</p> <p>x sharing young Co-Researchers' perspective and lifeworlds with KC members</p> <p>x advocating for including the perspective of affected young people in process of evaluation and adaptation of policies</p>	<p>x stakeholders might include the perspective of young people in their work</p> <p>x awareness of the challenges young people face might increase</p> <p>x cooperations with KC member beyond the KC activities</p> <p>x Policymakers, providers, social workers, pedagogues, parents learn about the ideas &amp; living worlds of</p>



	<p>research results</p> <ul style="list-style-type: none"> <li>x Understanding of social structures and inequality</li> <li>x Experience a participatory social science research process and gain skills on doing research on topics relevant to young people</li> <li>x Increase in data literacy due to practical involvement in research process</li> </ul>	<ul style="list-style-type: none"> <li>x Insight into the lifeworld of youths and the needed measures to lead them to employment or alternative occupational opportunities</li> <li>x Best practice experiences when coaching Co-Researchers (dealing with group dynamics, marginalisation, etc.)</li> <li>x Increased understanding of expectations of citizen science's ideal learning environments</li> <li>x Scientific publications</li> </ul>	<p>the underage pupils of E&amp;T up to 18 measures</p> <ul style="list-style-type: none"> <li>x Networking and experience exchange with other stakeholders</li> <li>x Presentations at the meeting of the advisory board of E&amp;T up to 18 on a national level (expected participants: 20)</li> <li>x Presentation at the meeting of the Lower Austrian contact group about E&amp;T up to 18 and Transition from School to Work (expected participants: 20)</li> </ul>
<p><b>Long-term outcome</b></p>	<ul style="list-style-type: none"> <li>x Empowerment</li> <li>x Alternative measures and youth-appropriate offers</li> <li>x We expect a positive connotation with participatory (research) processes and an increase in openness towards possibilities for participation in research and social policy agendas</li> </ul>	<ul style="list-style-type: none"> <li>x Demonstrated effectiveness of citizen social science</li> <li>x Sustainable links to the Knowledge Coalition members</li> <li>x New research questions related to youth employment</li> <li>x new research building on the approaches and insights of R&amp;I Action #2</li> </ul>	<ul style="list-style-type: none"> <li>x Implementation of better measures and youth appropriate offers</li> <li>x Increase in participation opportunities of young people in the design of social policy measures</li> <li>x Increase in support of Citizen Social Science projects about social policy measures for young people</li> </ul>





## Annex 2.1 KPI Table Buenos Aires

	Co-Researchers and Citizen Scientists	CoAct for Environmental Justice Professional Researchers	Knowledge Coalition
<b>Output</b>	<p>We reached 142 community actors who signed IC forms to participate in some of our activities</p> <p>71 of them acted as Co-Researchers (co-re: community actors who participate in co-designed workshops)</p> <p>28 workshops organised (6 for KC building (T5.1); 5 for research co-design (T5.2); 15 for platform co-design (10) and implementation (5) (T5.3); 1 for platform exploitation -hackathon- (T5.4) and 1 for transformation into action -policy workshop- (T5.5). Participation in four onsite large meetings organised by the community and several virtual meetings.</p> <p>Workshops were an opportunity for people to reconnect in the context of COVID-19 social-distance restrictions. They were an opportunity to share experiences and to jointly reflect on socio-environmental problems, data, and potential solutions</p> <p>We produced ten videos: 1 to explain the IC process, 1 to promote the platform by reflecting on the co-design participatory process, 5 videos of testimonies by Co-Researchers sharing their experiences with Citizen Social Science (3 of them 5" long for YouTube and 2 for IG of 1.30" long); 3 video-tutorials to explain how to use the platform (yet to be released)</p> <p>We co-designed six questionnaires for data collection in three themes (three are fill out forms and three have open questions and possibility</p>	<p>Methods: We have been using human-centre participatory design methodologies inspired in design thinking.</p> <p>Outreach:</p> <p>We participated in a conversatory about Citizen Science organised by a network of universities working on outreach activities for environment and inclusion (2021)</p> <p>We participated in UNDP and UNESCO gathering to discuss about the potential of Citizen Science for transformation (2021). Our R&amp;I Action has been included in a map developed by UNDP and Ministry of Science on Citizen Science initiatives on environmental topics.</p> <p>We have organised a session with undergraduate students from UNSAM university on "How to do research on water?" presenting our css approach.</p> <p>Scientific events:</p> <p>We presented a short presentation in ECSA 2020</p> <p>We co-organised a session on Citizen Science in the SDG Conference (2020)</p> <p>We participated together with Co-Researchers on a National Conference of Open and Citizen Science (2021) (one presentation and one poster)</p> <p>Joint SwafS Citizen Science Working Group – Co-creating digital platforms for Citizen Science (2022)</p> <p>We participated in a panel on "Policies for citizen science: issues and challenges" with Muki Haklay and Sarita Albagli part of the Second Workshop of the Brazilian Citizen Science Network</p> <p><a href="https://youtu.be/UmyvNnvkTSo">https://youtu.be/UmyvNnvkTSo</a></p>	<p>We reached 27 professional researchers and 41 policy actors (36 Argentinean + 5 international) who signed IC forms to participate in some of our activities. We disseminate news through CENIT/UNSAM and FARN websites. We have developed website for the R&amp;I Action #3 CoAct Environmental Justice in FARN website</p> <p><a href="https://farn.org.ar/coact-justicia-ambiental/">https://farn.org.ar/coact-justicia-ambiental/</a> We developed the beta version of the platform</p> <p><a href="https://mapaqpr.farn.org.ar/page/about">https://mapaqpr.farn.org.ar/page/about</a> and a landing page for QPR</p> <p><a href="https://quepasariachuelo.farn.org.ar/">https://quepasariachuelo.farn.org.ar/</a>. By November 2022 the beta version of the platform with main planned user functionalities is ready. However, some key functions are not ready yet: i) the most important is the development of a dashboard for reviewing and publishing the reports uploaded by citizens through the open forms (this was started in April 2022 and we had problems with the software developers) ii) several public datasets have not been uploaded and displayed in the platform's map yet (we hope this to be done by December 2022); iii) functionalities to group datasets from community monitoring activities (this has not been initiated)</p>



The CoAct project has received funding from the European Union's Horizon 2020 Research and Innovation programme under grant agreement No. 873048

	<p>to attached pictures and files) and a seventh questionnaire to share community news and events.</p> <p>We co-designed guidelines to share experience in the three themes. These field guides for water quality and natural areas explain the concepts included in the forms. In the case of resettlements, the field guide works as a tutorial on how to fill out the form – it works less as a pedagogical tool.</p> <p>Crowd-source data has not been published yet – planned for December 2022</p>	<p>(2022)</p> <p>The RIA's results were presented in three sessions in the ECSA Conference in October 2022, and in informal conversations in the GOSH 2022. It will also be presented in the ESOCITE/4S annual meeting in December 2022.</p> <p>Publications</p> <p>We wrote two CENIT/UNSAM working papers: one on citizen social science benefits and challenges and another on Citizen Science policies and 33 short notes related to the R&amp;I Action published on our websites (7 of them were reflection about Citizen Social Science and its impact, 18 were comments about recent activities, 8 were comment about other events or news related to the basin)</p> <p>We published a paper in Citizen Science Theory and Practice (2022)</p>	<p>We have contributed to the National recommendations for Open Science policies with a chapter on citizen and participatory research in which CoAct is mentioned and in discussions for the National Program on Citizen Science of the Ministry of Science and Technology. Our RIA was presented as a case to the Minister during the Program's launch. Oct 2022</p> <p><a href="https://www.argentina.gob.ar/noticias/se-presento-el-programa-nacional-ciencia-ciudadana">https://www.argentina.gob.ar/noticias/se-presento-el-programa-nacional-ciencia-ciudadana</a></p> <p>We developed a policy brief reporting the results of the policymakers perspectives study and recommendations on policy options to promote the link of Citizen Social Science and public policy.</p> <p>Our working papers are cited as part of a section on citizen and participatory research included in the Recommendations for the National Open Science Policies of the Ministry of STI.</p> <p>We conducted a study to understand sanitation policymakers perceptions of the potential link of CS to decision-making processes in policy and conducted a workshop with policymakers to discuss the study's results, in collaboration with the Argentinian UNDP and the Ministry of STI.</p>
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<p><b>Inter-mediate outcome</b></p>	<p>We still have similar expectations as mentioned at the beginning of the project on intermediate outcomes related to Capacity building, increased knowledge, Engagement, Mobilisation and Data literacy. We also expect to contribute with a tool that could be used in the context of the new Law on Environmental Education. Two of the platform themes can be easily taken up for pedagogical use. We worked with another UNSAM group developing ideas for the platform's educational uptake using a problems-based learning approach and discussed it with schoolteachers in the hackathon.</p> <p>There are plans to continue using the platform with community libraries in their activities and extending their networks with other territorial actors. We have also started conversations and expect to involve a group that develops open scientific hardware for water quality monitoring and has extensive experience involving communities in research. We plan to develop workshops with these groups to use the platform in water monitoring activities and upload this data, contributing to develop capacities to interpret the existing regulation and involve the communities in the discussions over its enforcement.</p> <p>We expect the platform to work as a tool for making widely visible some relevant and urgent issues affecting the community in the basin -this information is seldom published otherwise.</p>	<p>We have participated in one scientific publication to be published in Citizen Science: Theory and Practice about building participatory infrastructure. <a href="https://theoryandpractice.citizenscienceassociation.org/collections/special/disaster-infrastructure-and-participatory-knowledge/">https://theoryandpractice.citizenscienceassociation.org/collections/special/disaster-infrastructure-and-participatory-knowledge/</a></p> <p>We are currently working on another two publications: on research processes involving citizens and on policy perceptions of CSS knowledge. We expect to build an open crowd-source dataset</p> <p>We expect the platform and the coproduced knowledge contributes to promoting the need of building new community based indicators on socio-environmental issues.</p> <p>We expect to continue developing interdisciplinary and transdisciplinary networks for doing Citizen Science research. Apart from the UNSAM team that was involved in the educational materials development we are also in conversations with CoSensores, an inter-institutional group that produces open scientific hardware for environmental monitoring activities. Through our connections to the community libraries and professorship we are in conversations with local artists and a museum in the basin to implement the platform in their activities.</p>	<p>We managed to showcase our R&amp;I Action as one national example of doing Citizen Social Science in Argentina, during the launch of the National Programme of Citizen Science</p> <p>We plan to continue developing the alliances we have established to create a network of 'coordinating' users of the platform: community organisations with regular territorial links and that perform activities related to the environmental injustice issues. These communities would use the platform for their organisational goals and transformative actions. So far, we have established contacts with community libraries and formal learning institutions, and we are preparing presentations for funding calls connecting with other initiatives that engage communities in research processes.</p>
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<p><b>Long-term outcome</b></p>	<p>We expect the project may improve the quality of life and community engagement in knowledge production activities and in policy processes.</p> <p>We expect the collective knowledge production processes and outcomes may contribute towards social cohesion in the basin. While people working for the basin consider it as a single territory, at the jurisdictional/regulatory level it is very atomised (nation, provinces, municipalities, etc.)</p> <p>The platform and the new website will be a channel for contact points. None of them fully working yet.</p>	<p>Validity of citizen social science models for policy making</p> <p>Sustainable links to the Knowledge Coalition members</p> <p>New research questions related to social risks mapping and Citizen Science practices</p>	<p>UNSAM initiated steps to create an Ethical Committee.</p> <p>We still have the same expectations regarding impact on policy</p> <p>The information produced in the platform may provide support to legal complaints – if it becomes a legitimate data source.</p>
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