

## Motivation of Austrian researchers for conducting citizen science and assumed added value for participants

---

**Barbara Heinisch<sup>a,\*</sup>**

*aCentre for Translation Studies, University of Vienna,  
Porzellangasse 4, Vienna, Austria*

*E-mail: [barbara.heinisch@univie.ac.at](mailto:barbara.heinisch@univie.ac.at)*

Citizen science and responsible research and innovation are often mentioned in the same breath, which is not surprising since there are several commonalities. As part of a study addressing the consideration of responsible research and innovation in citizen science projects, we conducted interviews with project coordinators all over Europe. This article focusses on the results from the Austrian interviews, especially the motivation of researchers to engage members of the public in their research projects and the assumed added value of citizen science for them. While the main motivation for researchers to conduct citizen science ranges from pure necessity to social responsibility, they see the added value for the participants mainly in the acquisition of knowledge. The interviewed Austrian researchers themselves benefit from the mutual exchange, not only as a researcher but also as a person. Although the study participants reported that citizen science requires compromises, they generally see citizen science as an added value.

*Austrian Citizen Science Conference 2022 – ACSC 2022  
28 - 30 June, 2022  
Dornbirn, Austria*

---

\*Speaker

© Copyright owned by the author(s) under the terms of the Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License (CC BY-NC-ND 4.0).

<https://pos.sissa.it/>

## 1. Introduction

Citizen science [1] is embedded in a larger research landscape and social context, among which are the Sustainable Development Goals (SDGs), open science as well as responsible research and innovation (RRI). With regard to the SDGs, citizen science has been acknowledged as means for raising awareness for the SDGs, providing data for the SDG indicators to monitor the progress of reaching the SDGs and for stimulating the required social transformation [2]. Moreover, citizen science can help to reach the SDGs or to find concrete solutions on various levels [3]. With regard to open science, citizen science, as it lives from the contributions of members of the public, often also makes results and data publicly available. In the following, the focus will be on RRI.

### 1.1 Responsible Research and Innovation

Responsible Research and Innovation (RRI) is a concept rooted in the European Research Area. Its aim is to create an inclusive and sustainable research and innovation culture throughout Europe by integrating a wide range of stakeholders from society, including researchers, NGOs, civil society or entrepreneurs. By designing the research and innovation process together, both the process and the outcome should be aligned to the needs and expectations of society and help to anticipate consequences. The six pillars of RRI are public engagement, open access, gender equality, ethics, science education and governance [4].

The relevance of these RRI principles for citizen science is reflected by the fact that citizen science networks, associations or platforms independently define criteria or characteristics of citizen science, which also incorporate principles of RRI, such as open science, ethics, collaboration, communication or science [5].

## 2. Study

This article presents side results of a study (related to the meaningfulness of implementing responsible research and innovation in citizen science projects [6], including semi-structured interviews with coordinators of citizen science projects). The aim of the study was to investigate the implications of citizen science in relation to RRI, and especially the aspect of meaningfulness (the participants and methods are described in [6]). The analysis also revealed interesting side results. Since the participants represented citizen science projects from different disciplines and a large number of study participants came from Austria, it was worth investigating the aspects of ‘motivation to conduct citizen science’ and ‘added value of citizen science’ in the Austrian interviews separately to assess the situation in Austria and learn why researchers engage in citizen science in Austria.

## 3. Results

The results are subdivided into two aspects, namely the motivation to conduct citizen science mentioned by the interviewees on the one hand, and the added value – for the researchers themselves and the expected added value for the participants in the citizen science project, on the other.

### 3.1 Motivation

Regarding the motivation of project coordinators to conduct citizen science, the majority of the Austrian participants responded that citizen science is a pure necessity. The reasons mentioned were getting access, e.g. to certain areas, or increasing data coverage. The reason of pure necessity is followed by the aspects of raising awareness, education, providing a service to society and entertainment/fun as well as self-interest of the project initiator.

### 3.2 Added value

The interviewed Austrian researchers reported that the added value they experienced through the project was that they could take on (or further define) social responsibility with their project. Another added value reported by the study participants was enrichment, which included both the academic aspect of the project and the person of the researcher.

According to the interviewees, the major added value they expected for the project participants is knowledge acquisition. While the researchers mainly referred to the knowledge of a certain topic, e.g. the investigated species in a biology project that participants may acquire, some interviewees also acknowledged that participants may gain hands-on experience in science.

## 4. Discussion and conclusion

While the primary aim of academic research projects is the acquisition of new knowledge by academic means, some of the projects represented in the study are also long-term monitoring projects that rely on continuous contributions by participants and generate knowledge over longer time spans. Although none of the interviewees explicitly mentioned ‘knowledge generation’ as a motivation to conduct citizen science, the aspect of ‘pure necessity’ may already allude to the need for generating new knowledge, which requires the support from citizens.

While the aspect of ‘pure necessity’ is based on the RRI principle of ‘public engagement’, other aspects addressed by the interviewees are related to the RRI principle of ‘science education’ (such as ‘raising awareness’, ‘education’). However, from the interviews we can derive that these aspects of raising-awareness and education are (partially) also aimed at achieving social change, such as a change in behavior or attitudes towards the object of research. Examples given are increasing biodiversity and engaging in species and environmental protection.

Interestingly, the RRI principle of ‘gender equality’ was not targeted by the participating Austrian projects. According to some interviewees, gender equality should be rather taken for granted nowadays. Although it was not mentioned explicitly by the study participants, in some cases, the motivation was also ‘giving back’. On the one hand, this can be derived from the statement that participants should have fun and on the other hand of contributing to preservation (not only of nature but also of human history).

‘Governance’, which can be understood as shared responsibility and accountability as well as de facto governance, was not mentioned by the interviewees. This may also be due to the fact that the projects are designed by researchers, while citizens are asked to contribute their time and effort to an already developed research design. Although the interviewed researchers stated that they had to adjust the project (to the participants’ needs and/or requests), the overall (research) project structure remained the same.

These aspects and the reported added value demonstrate that the study participants already (partially) implemented RRI principles although the participants were generally not familiar with RRI and none of them actually deliberately followed these principles.

Therefore, future research may address the question whether adhering to the RRI principles can be considered an inherent element or rather a byproduct of citizen science. Moreover, future studies may compare the expected or assumed added value and the actual added value for both researchers and the participants. An additional area of research is whether the researchers expected certain added values and deliberately intended to reach those in their citizen science project or if there were added values that they did not expect.

Although the majority of the Austrian interviewees reported that citizen science is a pure necessity to reach the research objectives and that citizen science might require compromises, they also stated that citizen science and the exchange with participants resulted in an (unexpected) added value for their research and themselves.

## Acknowledgement

I would like to thank the interviewees, and the researchers (see [6]) involved in data validation and data analysis.

## References

- [1] F. Heigl, B. Kieslinger, K.T. Paul, J. Uhlik, and D. Dörler, *Opinion: Toward an International Definition of Citizen Science, Proceedings of the National Academy of Sciences of the United States of America*, 2019.
- [2] S. Fritz, L. See, T. Carlson, M. Haklay, J.L. Oliver, D. Fraisl, R. Mondardini, M. Brocklehurst, L.A. Shanley, S. Schade, U. Wehn, T. Abrate, J. Anstee, S. Arnold, M. Billot, J. Campbell, J. Espey, M. Gold, G. Hager, S. He, L. Hepburn, A. Hsu, D. Long, J. Masó, I. McCallum, M. Muniafu, I. Moorthy, M. Obersteiner, A.J. Parker, M. Weisspflug, and S. West, *Citizen Science and the United Nations Sustainable Development Goals, Nat Sustain* 2, 2019.
- [3] E. Proden, K. Bett, H. Chen, S. Duerto Valero, D. Fraisl, G. Gamez, S. MacFeeley, R. Mondardini, L. See, and Y. Min, *Policy Brief: Citizen science data to track SDG progress: Low-hanging fruit for Governments and National Statistical Offices*, 2022.
- [4] Rome Declaration on Responsible Research and Innovation in Europe. Available at [https://ec.europa.eu/research/swafs/pdf/rome\\_declaration\\_RRI\\_final\\_21\\_November.pdf](https://ec.europa.eu/research/swafs/pdf/rome_declaration_RRI_final_21_November.pdf).
- [5] F. Heigl, D. Dörler, P. Bartar, R. Brodschneider, M. Cieslinski, M. Ernst, S. Fritz, I. Greilhuber, J. Hatlauf, S. Hecker, T. Hübner, B. Kieslinger, P. Kraker, T. Krennert, G. Oberraufner, K.T. Paul, B. Tiefenthaler, M. Vignoli, T. Walter, R. Würflinger, M. Zacharias, and D. Ziegler, *Quality Criteria for Citizen Science Projects on Österreich forscht | Version 1.1*, 2018.
- [6] L. Tauginienė, E. Butkevičienė, B. Heinisch, L. Massetti, S. Popov, F. Ugolini. *Echoing Responsible Research and Innovation in Citizen Science Projects: What Makes it Meaningful?*, forthcoming.