

# STAKEHOLDER ANALYSIS ON INTERNATIONAL CITIZEN SCIENCE DATA & METADATA STANDARDIZATION

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In the past year, regional, national, and global initiatives have emerged in citizen science practice with the aim of fostering interoperability and developing joint standards as well as infrastructures for project data and metadata. Examples of initiatives include an ontology for citizen science data and metadata, the development of linkages between existing projects and data repositories, and a reference model for sharing citizen science IT tools (Wilson Center, 2016). Actors from around the globe are involved, including working groups in the US-based Citizen Science Association (CSA) and European Citizen Science Association (ECSA), platforms like CitSci.org, SciStarter and the Atlas of

Living Australia, the Joint Research Center of the European Commission, and the Open Geospatial Consortium.

In this context, the Commons Lab at the Woodrow Wilson International Center for Scholars, in Washington, D.C., is leading an exploratory analysis of stakeholders in citizen science in 2016. The main goal of this study is to identify individuals, groups, and organizations involved in citizen science activities as well as those affected by the data collected in such projects, to then understand how these stakeholders will be impacted by data and metadata standardization efforts.

REGIONS COVERED BY INTERNATIONAL CITIZEN SCIENCE STAKEHOLDER ANALYSIS AND EXAMPLES OF ACTORS INVOLVED IN INTEROPERABILITY INITIATIVES BASED ON CECCARONI, 2016



## RATIONALE OF THE STUDY

Mobilizing data for research and making them count as evidence (Kullenberg and Kasperowski, 2016) appear to be among the main driving forces of participatory research. Considering the diversity of emerging citizen science initiatives along with the specificities of their local implementations, it is no wonder that data access, licenses, ownership, credibility and quality are at the forefront of citizen science endeavors. Current efforts to improve interoperability and develop global standards for citizen science data and metadata need to be seen in this context. Interoperability is a key ingredient to make citizen science research more widely accessible to science in general, politics, and society at large, and can spur further cooperation between parties. However, standardization requires agreement on common rules and templates that accurately reflect

certain characteristics of citizen science research. These requirements can be well suited for some purposes, and less so for others.

Therefore the stakeholder analysis will explore potential stakeholders of the standardization initiatives currently under way, gain insights into the data-related concerns of various communities and project types, and co-generate solutions for the future. The ultimate aim is to understand who is affected by citizen science generated data, who is missing from the table, and to then facilitate broad participation in standardization initiatives. It is crucial to develop these methodologies now to ensure the development, accessibility and uptake of widely applicable data standards for citizen science.

## STUDY DESIGN



### STAKEHOLDER ANALYSIS

A stakeholder analysis is a methodology originating in the social sciences used to identify parties that will be affected by, and thus have stakes in, a political program or particular issue, such as an oil spill or the plan to construct a factory in a given location. While it is a common approach in business and natural resource management, it has become popular as a preliminary study for designing and implementing stakeholder engagement mechanisms in recent years (Schramm, 2012; WWF, 2005).



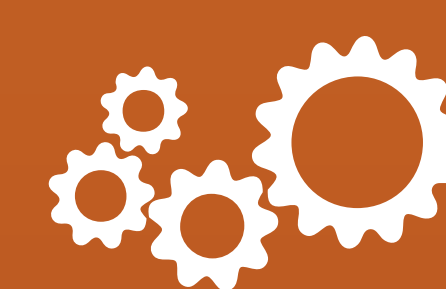
### KEY QUESTIONS

The International Citizen Science Stakeholder Analysis organized and funded by the Wilson Center addresses two main questions with a focus on citizen science data and metadata:

→ WHO WILL BE IMPACTED BY ONGOING DATA AND METADATA STANDARDIZATION INITIATIVES?

→ HOW WILL THESE STAKEHOLDERS BE AFFECTED?

Standardization efforts will benefit the broad range of citizen science communities in different ways. For example, a local community-led air quality monitoring project will face different issues regarding data gathering and protocols, quality, and access compared to a project using an online platform for image analysis by large numbers of volunteers for basic medical research or galaxy identification. In addition to considering varying impacts based on different characteristics of stakeholder groups, the study also seeks to identify secondary consequences of standardization efforts beyond the data and infrastructure level. This may include how data standards could be designed for community groups or be adopted by government agencies or research funders to structure their interaction with citizen science approaches.



### IMPLEMENTATION

The study is intended to provide a global perspective on data and metadata standardization in the citizen science landscape in 2016. As a starting point it will be conducted in the US, Europe, and Australia – the three continents that have established citizen science associations and are involved in the interoperability initiatives mentioned above.

The Commons Lab is working with a team of researchers from each geographic region – Claudia Göbel, Headquarters Coordinator for the European Citizen Science Association, Vicki Martin, a citizen science researcher at Southern Cross University in Australia, and Mónica Ramírez-Andreotta, an Environmental Health scientist and Assistant Professor at the University of Arizona. The involvement of other regions is intended.

The stakeholder analysis includes a literature review and interviews with research domain experts and stakeholders. A focus group workshop to introduce and test the framework for the research was conducted in January (JRC 2016). The study design is based on the literature review and the methodology has been refined to facilitate a joint global study. Interviews will be conducted during mid-2016 and the presentation of results is planned for the CSA conference 2017 in Raleigh, North Carolina, US.

### MORE INFORMATION

If you would like further information on the study please contact the Commons Lab, at [commonslab@wilsoncenter.org](mailto:commonslab@wilsoncenter.org). For getting in touch with the European node of the study, contact [claudia.goebel@mfn-berlin.de](mailto:claudia.goebel@mfn-berlin.de).



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