**International Citizen Science Stakeholder Analysis
on Data Interoperability**

INTERVIEW PROTOCOL

Introduction

This interview is part of study by Wilson Center Commons Lab on CS Data & Metadata standardization with specific focus of identifying project stakeholders. The study is linked to initiatives for the standardization of CS data and metadata – I'll talk more about that later. First I'd like to learn more about how your project works. For starting, could you please briefly introduce yourself & your role in the project.

Project Description

Project Contents, Structure & Participants

1. First, could you briefly describe the aims of [NAME OF PROJECT]?
2. Imagine I would participate in your project. Briefly describe the activities of your project, from start to finish? How does it work?
3. What other tasks do the volunteers perform (e.g. data collection, analysis, communication etc.)
4. How would you describe the types of volunteers you recruit? (e.g. age, gender, interests, other group characteristics e.g. school students, adults etc.)
5. How many volunteers do you have?
6. How many organizers do you have?
7. Who initiated the project? (community, a scientist, etc.)
8. Are or were volunteers involved in making any decisions regarding the project, e.g. the research question(s) addressed?
9. What is the duration / frequency of the project?

Project Stakeholders

10. Outside of the project, which people or partner organisations are important to make your citizen science project work well or be successful? (e.g. science, policy, education, civil society)
    a. What sort of support do these stakeholders give to the project (e.g. funding, resources, volunteers, administration, data support etc)?
    b. Which of them already use the information outputs (e.g. data, results, reports) from the project. In what way do they use this information (e.g. planning, decision-making, research, lobbying, etc.)?
11. Are there any other organisations or individuals *who you are not currently working with* but you think may be able to support your project in the future?

Project Data

Data Generation & Management

Next we are going to talk about the data or knowledge produced within your project.

12. How do you describe the type of data (or knowledge) your project generates (e.g. observational data on presence of shorebirds in eastern Australia)?
    a. Can you tell me more about the steps in your data *collection* process? How is it collected, what methods/technologies are used?
    b. Now, can you tell me about your data *management* processes? Where is kept, who manages the database, and who analyses it?

Access to Project Data, Use, Ownership

Next I would like to understand more about access to your project's data.
13. Do you share the data from your project?
    a. *If yes:* what data do you share (e.g. raw data, results, reports, data on participants activities etc.)?
    b. *If no:* Why? Do you plan on sharing your data in the future? If so, what are the barriers to sharing your data?
14. Why is it important for you to share your project data?
15. Who can access your data?
16. How is the project data accessed by others? (e.g. online database – open access, or subscription; contact us directly, smartphone apps, etc.)
17. If they are not the stakeholders you mentioned earlier, what do they use your data for?
18. Who owns the data collected by the project?

Optional Data Questions

19. What expectations, if any, do you have about the outcomes of sharing data?
20. What barriers are preventing access to your data?

Data & Metadata Standardization

Interoperability Initiatives Vignette

Next, I'll explain more about current standardization / interoperability initiatives, to set the context for the following questions.

Three citizen science associations, in the US, Europe, and Australia, are collaborating on a citizen science data and metadata standardization project. The goals of this project focus on the vocabulary and standards relating to citizen science data.

The first goal is to develop a standard and consistent vocabulary for talking about different aspects of citizen science. This vocabulary will build upon previous work, for example the different categorizations of how citizen science projects are organised. Building this vocabulary may result in new terms, such as a set of words to describe common quality assurance (QA) and quality control (QC) protocols. This vocabulary should be consistent across a range of fields, so that projects in the biological sciences can talk about their work with the same words that public health projects use.

The second goal is to compile a set of standards for citizen science data collection and sharing. These standards will be compatible with a number of existing domain-specific standards, such as Darwin Core for the biological sciences. Standards for citizen science data collection and sharing might also extend previous standards, for example by adding a field to record the name of a volunteer submitting an observation. The goal of these standards is to help new projects collect high-quality data that can support science and policy, to help existing projects share their data with other scientists and volunteers, and to support new types of research.

The vocabulary and set of standards will be hosted on a website. This website will also include a list of application programming interfaces (APIs) and data sets to support standardized data sharing.

Interoperability

The next questions are about interoperability of your data. Interoperability is understood here as the ability of different information technology systems and software applications to communicate, exchange data, and use the information that has been exchanged.

19.   Is data standardization and/or or interoperability important for your project?
20.   Does your project use any established industry and/or regulatory data standards? If so, which one(s)?
21.   What measures does your project (or you) undertake, if any, regarding data interoperability?
22.   If there was a general standard for collecting and organizing citizen science data, would you adopt it? Why, or why not?
23.   Do you anticipate that data standardisation within citizen science practice would affect your project activities in the future? If so, in what way?

Final Questions

24.   Are there any data standardisation issues in citizen science you would like to raise that have not been discussed today?
25.   Would you like to be involved in any future work towards data standardisation in citizen science?
26.   We may not be able to interview them for this current project, but is there anyone else you think we should talk to about this subject?
27.   Would you like to receive a copy of our final report on this study, which is due in February 2017?
Thank you very much for your time!