

# POPULARIZATION COMPONENT – DISSEMINATION

## DISSEMINATION 1 – CITIZEN SCIENCE AND STUDENTS' PARTICIPATION IMPROVEMENT

### CONTEXT

#### GENERAL CONTEXT

Citizen sciences projects are increasing in number and diversity, and the interest of the general public for this kind of programs is increasing accordingly. The recent events due to the pandemic context have shown a desire of the general public to be more involved in science and to “do their part”.

In this context, documentation for improvement of the general public's participation is necessary in order to provide a frame for citizen science. Programs that are scientifically framed show more accurate data with less preventable bias (see Deliverable 2). Scientific involvement in this improvement is also important from the scientists' point of view, as the data gathered by these programs are more and more frequently used in scientific programs, and their quality is a major concern.

#### INSIDE THE PROJECT

The Deliverable 2 has shown different kind of citizen science programs currently ongoing in Estonia, and had pointed out some issues that could be improved quite easily.

### BACKGROUND AND PURPOSE

#### BACKGROUND

This documentation is mainly based on the results obtained and exposed in Deliverable 2, and on their comparison with data gathered in Deliverable 1.

#### PURPOSE

The purpose of this documentation is to improve the current quality of citizen science, and consequently, of the data they gather.

### PRACTICAL ASPECT

#### METHODS AND TECHNIQS

An example of the documentation is available in Annexe (section Documents). This example show the different aspects of the documentation, what item must be included and how it is supposed to be treated. The documentation includes:

- A part about the subject of observations. This part is focused on the species targeted by the observations or the program. It includes:
  - o Help to identify specimens: both photos, description – and, if they exist, sounds – should be used. All the different names by which the species could be known should be given, with an

- explanation on why Latin names are useful in disambiguation, especially in the context of citizen science.
- General biology elements: both elements of physiology and behaviour are given to the participants, in order to help them finding good spots, good time and good way to do the observations. If multiple species are observed, a short briefing of interactions between these species (especially prey-predator relationships) is given.
  - Behaviour toward humans: this part is important for safety compliance. Any sensitive points about humans (possibility of aggressive behaviour, dangerousity of the species by poison or injury, long-term memory, risk of panic reactions etc.) are mentioned in this part.
- A part about the observations of field. This part is focused of the practical aspect of observations. It includes:
- Explanations about the material: material provided or recommended is explained in details. Possibilities and limitations of the material which can impact the observations are mentioned – like the shortened life of camera batteries in cold weather.
  - Data collection: this part is a collection of both good practices – how to record easily and with good quality, how to keep track – and safety procedures – both for participants and material. It must be adapted to local climate, environmental hazards and societal risks. A part is focused on ethical compliance – do not record people's faces, conversations, private spaces etc.
  - Data storage: depending on the storage used – open data base, shared platform or hard-drive etc. – and the kind of data needed – photos only, field diary, complete recordings etc. – different kinds of advices are provided for good practices in data storage, especially harmonized nomenclature for data base.
- A part about participation to citizen science:
- Local database: advices of good practices for relevant data gathering are provided. This section insists also on spreading awareness about local programs: a strong data base is a data base with a lot of contributors involved.
  - Communication: this section explained the importance of communication about citizen science, and an example of the ongoing program should always be given to the participants, as resource and reference – in our case, it was the website of the project, see document COM1, and link in References section.
  - Local events: this section can be used to advertise local events linked to the project, to encourage the creation of local events or to gather wishes of local events from the participants.

---

#### ETHICAL AND SAFETY COMPLIANCE

Ethical and safety warnings are included in the material, especially regarding the management of the environment during observations, the care of the video material, and the good attitude to adopt with the observed species.

---

#### FEEDBACK

The material was used to sensitize and train students from the Practical Semiotics Class (by Lona Päll, Semiotics Department). They then went on field work, during two observation sessions. From the first session, they were able to differentiate between the key-species observed and had good automatisms – like looking for the partner of an individual foraging on the ground. They easily manipulate the video material, even if they needed a bit of practice, but knew how to position themselves, in their environment and regarding to the target individual or group.

The material was efficient in providing them basic knowledge, which improve their ability to gather useful and quality data from the first session.

### GENERAL PROJECT – CURRENT STATE OF PLAY

#### IMPORTANCE OF THE CURRENT STEP

This step is the logical consequence of the data gathered on Workpackage 1. It can also be useful for potential future involvement of students in Workpackage 3.

#### PROPOSITIONS FOR OTHER ASPECTS OF THE PROJECT

---

#### ACADEMIC ASPECTS

This step will be introduced in academic interventions (see Conference 1 and International 1), with the aim of sensitize the academic scholar to the importance – for the quality of their data as well as for the good relationship between scientists and general public – to be involvement in the improvement of citizen science programs.

---

#### RESEARCH ASPECTS

The documentation created will be used with potential students involved in Workpackage 3 as a preparation and training for good quality field work.

#### NEXT STEPS

This documentation is going to be introduced in Gathering in Biosemiotics in Olomouc (see C1) and in the French Society of Zoosemiotics public seminar of July (see I1).

### ANNEXES

#### REFERENCES

Website of the project: <https://www.crows.ut.ee/>

#### ACKNOWLEDGEMENTS

Egert Käesel and Hanna-Annika Kuulmets, students at the Semiotic Department, for their participation to two sets of observations, and to the first test of this pedagogical material.

Lona Päll, for the organization of the session where the material was tested with the students.

#### DOCUMENTS

Citizen science improvement example (PDF version – 10/06/2022)