

# D 7.2 Lessons Learnt on Training and Mutual Learning Activities and Outcomes

Date: February 2024



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101006386



## Deliverable description.

### Lessons Learnt on Training and Mutual Learning Activities and Outcomes

<b>Deliverable</b>	D 7.2
<b>Work Package</b>	7
<b>Due of Deliverable</b>	M <del>3632</del>
<b>Lead beneficiary of this deliverable</b>	ZSI
<b>Version</b>	01
<b>Author(s) and Institution(s)</b>	Elke Dall, Samire Gurgurovci, ilse Marschalek, Carmen Siller (all ZSI), contributing partner: Vicente Aylwin (SFC)
<b>Submission Date</b>	29 February 2024
<b>Reviewers</b>	Luciano D'Andrea (K&I), Lucia Recio (SFC)



---

**Project co-funded by the European Commission within the H2020 Programme  
(2014-2020)**

---

<b>PU</b>	<b>Public</b>
<b>CO</b>	<b>Confidential, only for members of the consortium (including the Commission Services)</b>
<b>CI</b>	<b>Classified, as referred to in Commission Decision 2001/844/EC</b>

---

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101006386



## Table of Contents

Table of Figures .....	5
Executive Summary .....	7
Chapter 1 - Introduction.....	8
Chapter 2 – Methodology .....	10
Chapter 3 – Reflection of Activities.....	11
3.1 - Training Activities.....	12
3.1.1 Training Needs.....	12
3.1.2 Training Sessions .....	14
3.2 – Assistance Activities – Open Fora.....	28
3.3. – Four Mutual Learning Events (MLEs) .....	32
3.4 – Networking Activities with other Projects .....	38
Chapter 4 – Topics and findings from the MLEs .....	41
Mutual Learning Event 1 .....	42
Mutual Learning Event 2 .....	45
Mutual Learning Event 3 .....	47
Mutual Learning Event 4 .....	49
Key lessons learnt on Training and Mutual exchange activities .....	53
References.....	57
Annex 1 – Questionnaire on Training Activities .....	58
Annex 2 - Survey on Step Change Mutual Learning Activities .....	60
Annex 3 – Survey on Identifying the Needs and Strengths in each CSI project .....	62



## Table of Figures

Figure 1: Mutual Learning Process.....	11
Figure 2: Interactive exercise: Needs for carrying out a CSI .....	14
Figure 3: The input on the basics of understanding citizen science is useful/relevant .....	15
Figure 4: The "Exchange on Do's and Don'ts in CS processes" exercise is useful/relevant .....	16
Figure 5: The exercise "Personas" is useful/relevant.....	16
Figure 6: The exercise "I Am, but I am Not" is useful/relevant.....	16
Figure 7: I feel confident for the next steps in my CSI .....	17
Figure 8: Brainstorming exercise 'How and what to communicate?' is useful .....	18
Figure 9: Input on 'Basic communication' is useful/relevant.....	18
Figure 10: The exercise 'Expert Tables' is useful.....	19
Figure 11: Input on 'Participatory evaluation' is relevant.....	20
Figure 12: Exercise 'Evaluation strategy' is useful/relevant.....	20
Figure 13: I feel confident for the next steps in my CSI .....	21
Figure 14: The exercise on "Where do the CSIs stand in the process" is useful/relevant .....	22
Figure 15: Kahoot as an engagement tool is useful .....	22
Figure 16: Input on 'Knowing your citizen scientists' is useful.....	23
Figure 17: Exercise on Communication items is useful/relevant.....	23
Figure 18: The discussion on 'Communication Item' is useful/relevant .....	24
Figure 19: I feel confident for the next steps in my CSI .....	24
Figure 20: Input on 'Legal issues in Citizen Science Initiatives' is useful/relevant.....	25
Figure 21: Input on 'Storytelling as an engagement tool for Citizen Science' is useful/relevant .....	26
Figure 22: The exercise 'Storytelling as an engagement tool for Citizen Science' is useful/relevant.....	26
Figure 23: Results of the learning quiz.....	26
Figure 24: Learning quiz: Reflection encompassing all four training sessions.....	27
Figure 25: I feel confident for the next steps in my CSI .....	27
Figure 26: Satisfaction with Open Fora meetings in general .....	29
Figure 27: Satisfaction with frequency - Open Fora.....	30
Figure 28: Satisfaction with length of Open Fora.....	30
Figure 29: Satisfaction with guiding questions - Open Fora .....	31



Figure 30: Satisfaction with notes on Miro Board - Open Fora .....	31
Figure 31: Satisfaction with implementation via ZOOM.....	32
Figure 32: Satisfaction with frequency of MLE .....	33
Figure 33: Satisfaction with topics chosen - MLE.....	34
Figure 34: Satisfaction with reflection template - MLE.....	34
Figure 35: Satisfaction with ML workshops overall .....	35
Figure 36: Satisfaction with summaries of lessons learned presented during MLE .....	36
Figure 37: Satisfaction with the invitation of external speakers - MLE .....	36
Figure 38: Satisfaction with length of MLE .....	37
Figure 39: Satisfaction with MLE output papers .....	37
Figure 40: Implementation of the activities.....	38
Figure 41: Specific activities with each CSI.....	39



## Executive Summary

This report synthesizes the experiences and insights gained from the implementation of Citizen Science Initiatives (CSIs) within the Step Change project, focusing on Work Package (WP) 7 – Mutual Learning and Training.

To foster transdisciplinary collaboration, a range of activities centred on training and mutual learning of CSIs were developed. These included diverse training formats such as: four train-the-trainer sessions, four mutual learning events (MLEs), as well as different networking activities with other relevant projects. These activities aimed to explore Citizen Science as a tool for the socialisation of scientific research and innovation, including aspects related to Health, Energy, and the Environment, but also those related to trans-epistemic, societal, and institutional dynamics.

Additionally, regular informal dialogues, such as Open Fora, took place, providing opportunities for ongoing exchange and engagement among the CSI partners, with horizontal partners also invited to contribute. This format served to enrich collaboration and the exchange of knowledge during the implementation process of CSIs.

The present results relate to all above mentioned activities. On the one hand, they describe how the respective formats were received, and on the other hand, which topics and solutions were discussed. Overall, the CSIs were quite satisfied with the offers tailored to their needs and accepted them well. The report concludes with an overview of the lessons learned and recommendations for advancing Citizen Science initiatives, emphasizing the importance of transdisciplinary approaches and ongoing mutual learning in fostering innovation and societal impact.



## Chapter 1 - Introduction

The Step Change project hosted and accompanied five CSIs in different countries - even continents - and on completely different topics. Project partners implementing a CSI all had to develop and implement their CSIs during the project period and, after successful data collection, bring them to completion. Citizen science reflects a broader trend of public engagement spanning various disciplines and interdisciplinary collaborations by emphasizes the value of involving citizens in scientific research (Land-Zandstra et al., 2021).

To support the CSI journey in this endeavour, an ongoing mutual exchange of experiences and learning was the main task of the activities of this work package. Additionally, as part of the T7.4, five CS initiatives were identified to be involved in the learning processes to provide cross-fertilization beyond the project.

This report covers all activities in support of the CSIs that have contributed to learning and mutual exchange. It describes the methods and formats used and how they have been received by the CSIs, as well as the most relevant content and topics that have occupied the CSIs during their long journey.

To support the CSI teams in their journey of implementing their citizen science initiative, a set of training activities were developed, planned, and implemented (T7.2.1). All CSIs who still had very little experience in CS were beforehand asked by ZSI about their training needs. In accordance with those needs, the topics of the training modules were determined, and the training sessions were designed. Which training needs have been identified and how they were addressed can be found in Chapter 3 – Reflection of Activities .

Based on these identified needs, a series of train-the-trainer workshops (Task 7.2) were created and established, building upon the outcomes of the preparatory actions carried out in Task 7.1. These workshops were conducted across four training sessions, each focused on one of the following key topics:

- **Training 1:** Citizen science process
- **Training 2:** Recruitment and retention of citizen scientists
- **Training 3:** Internal and external communication in citizen science
- **Training 4:** Storytelling, legal aspects in citizen science and open issues

These trainings aimed at increasing CSI core teams' capacity for trans-disciplinary work and effective stakeholder engagement. The training formats were drafted and submitted in October





2021, before the trainings commenced. The formats were flexible and could be customized to align with the specific requirements of CSI partners, allowing for adaptation and reuse based on their specific needs. Each training was evaluated with ex-post questionnaires and adjustments were made based on the feedback received. Details regarding the perception of these training activities are provided in section 3.1.1.

In order to enable the exchange between the CSIs, further activities were organized. In Sub-Task 7.2.2, assistance activities are described which *“will be on-demand and will foresee an active engagement of task leaders and involved partners (whenever necessary) for preparing and reviewing this kind of activities foreseen in the CSIs.”* To this end, the format of a monthly Open Forum was developed, where the partners implementing a CSI could join and share challenges or issues for which they would like to receive advice or hear new ideas on how to tackle them. This open format allowed the CSIs to introduce their respective current topics and obtain feedback and support from partners. The Open Fora have been implemented once a month since June 2022 once all CSIs were on track and took place until October 2023. Section 3.2 describes how this open format was perceived by the participants and which were the most relevant topics discussed.

Task 7.3 foresaw four Mutual Learning Events which *“will allow for an in-depth exchange about the lessons-learnt during the implementation of the CSIs.”* Between March 2022 and December 2023, four virtual mutual learning events were held, with participation not only from project partners and CSIs but also from invited external experts. The CSIs reflected on their experiences on the respective topics in advance and discussed them with the external experts at the meeting. They worked together on ideas for solutions. Based on this, a report was prepared in each case, which was also published as an *“output paper.”*

Chapter 4 lists the most important results in terms of content, the challenges faced by the CSIs and the coping strategies developed. Drawing from these insights and the input from participants, we summarize the main lessons learned in Chapter 5.



## Chapter 2 – Methodology

The methodology employed for the training sessions includes both quantitative and qualitative methods to identify individual training needs. The process began with initial preparations within the framework of WP1. To identify individual training needs, a pre-questionnaire was prepared, which among others included background information on partners' experiences with citizen science, these answers were then reflected in interviews. As part of the T1.5 for each CSI team, in-depth group interviews were conducted to map the training needs of the different teams. Prior to the interviews, an interview guideline was prepared following the pre-questionnaire by SFC, with a focus on knowledge and experiences in CS, RRI, and mutual learning opportunities. In parallel, a literature review on existing trainings materials, tools and methods was conducted, encompassing an analysis of grey literature and training materials from previous projects. This approach incorporated various data sources and leveraged available project resources to address individual training requirements.

A concise LimeSurvey feedback questionnaire was prepared for each training session in T7.2.1. Its purpose was to anonymously gather participants' satisfaction regarding objectives, activities, and meeting organization. This approach enables an objective assessment and adjustment of methods and methodologies for the remaining events. The clearness and usefulness/relevance of each module of the training session as well as the overall event could be rated on a scale ranging between 1 (very much) and 5 (not at all). The survey questions were categorized into three distinct sections:

- **Objectives and activities** - which centred on input, relevance, and clarity.
- **Meeting organization** - which emphasized the practical aspects of the training, including interaction and timing.
- **Overall** - which delved into the overarching goals of the training and participants' level of confidence in their CSIs implementation after each training.

In addition, participants could provide suggestions in an open text box.

Furthermore, to obtain reliable data for the qualitative analysis of training activities and mutual learning activities (T7.5), a survey among beneficiaries was conducted to provide input to WP 8 and WP 9. To this end, a short survey (see [Annex 2 - Survey on Step Change Mutual Learning Activities](#)) was developed and



announced to Step Change partners in mid-April 2023. The survey covered two blocks of questions, one on the Mutual Learning Events (T7.3) and one on the Open Fora (T7.2.2). Except for the open questions, the scale for the answers ranged from 1 (very unsatisfied) to 5 (very satisfied). Out of 33 invitations sent, 35 individual records were noted and a total of 22 surveys were completed. For the analysis at hand, only completed surveys were considered.

## Chapter 3 – Reflection of Activities

From November 2021 to December 2023, a series of activities were conducted to facilitate the implementation of the CSIs. On one hand, in tasks 7.1 and 7.2, this work package supported the first stages of CSIs implementation by developing training activities for the core team while also fostering engagement with relevant stakeholders. Task 7.2 was organized into two separate but interconnected sub-tasks. Under sub-task 7.2.1 a set of train-the-trainer workshops was executed; the details of these workshops will be provided in the following section. Furthermore, as part of sub-task 7.2.2, assistance activities were implemented to support CSIs in their project in collaboration with the involved partners. For this task, an Open Forum was implemented where all the partners could participate on a voluntary basis. This format allowed for an open space to share concerns, experiences, knowledge, and everything related to the CSIs for peer feedback and support. On the other hand, in tasks 7.3 and 7.4 a set of four Mutual learning events were conducted which was later used in WP9 in the stocktaking process. Prior to each MLE, a 'reflection template' was created and distributed to participants. This template included guiding questions to facilitate reflection on challenges faced, and the key learnings derived from those experiences, specifically in relation to the upcoming topic of the MLE. Those challenges were then summarized by ZSI and addressed during the mutual learning events.

The execution of these activities involved four stages, each encompassing sub-activities, as illustrated in Figure 1. All these activities are described in detail in the following sections.



Figure 1: Mutual Learning Process



## **3.1 - Training Activities**

### **3.1.1 Training Needs**

A series of four online training sessions of 2.5 hours each were conducted between mid-November and February 2022. These sessions were conducted with a prior reading task in preparation for the upcoming topics, as well as homework exercises. These exercises were intended as outputs to be applied to the implementation of the CSIs, to maximize the impact of the training and motivate citizen scientists with their engagement. In order to assess the training needs of each CSI a baseline analysis was conducted which consisted of two parts:

- a pre-questionnaire for identifying training needs
- a series of in-depth interviews with each CSI core team to map the training needs

The aggregated assessment of the training needs presented below was integrated into the “Report on Training Needs of five CSIs” - D1.2- and fed into the development of the training formats. Based on the details gathered from the pre-questionnaires and the remarks shared during the interviews, it became evident that the central area requiring additional training for organizations involved in citizen science initiatives under the Step Change project is communication in its diverse forms. The second important topic in demand was “evaluation” and was further processed accordingly with the evaluation partners (K&I) in the project.

The identified training requirements have been grouped into specific key areas, providing direction for the creation of training materials. The listed points represent inquiries from CSI partners related to the overarching subject (Iacolina et al., 2021, pp. 26–27).

#### Recruitment of citizen scientists

- Professional approach for reaching out, recruitment strategy. How to enlarge the pool of people to contact?
- How to make sure to have a diverse group (elderly, gender balance, minority groups, secluded groups like LGBTQ+ etc.)?
- What is the optimum number of citizen scientists?

#### Design, set-up of CSI, data collection tools, data management

- Data and general management
- Which tools can be used for data collection, and how to ensure the proper use of tools and scientific methods?
- How to stimulate citizen scientists to propose additional activities?



### Engagement strategy and training of citizen scientists

- Advice on suitable and effective communication strategy. What is the best way to interact with citizen scientists, which channels are suitable for which group of people? Are there special tools to engage certain groups?
- How to build trust in virtual environments?
- Retention strategy: how to keep up the motivation of citizen scientists?
- How to deal with dropouts? How to ensure the sustainability of participants?
- General training of participants in citizen science

### Collaboration, feedback, recognition

- Which ways are there to recognize the contribution of citizen scientists?
- How to better recognize citizen scientists with low literacy levels?

### Evaluation

- Establishment of the evaluation system and indicators
- How to determine if the CSI has been successful?
- Aspects of unintended outcomes

### Communication strategy, science communication, social media communication

- How to communicate to the wider public/people not involved in the CSI, storytelling?
- Clear, reliable, and effective communication tools
- How to bring together different communication strategies for different target groups?

Furthermore, individual aspects such as strategies for upscaling, ethics, and open access issues were among the mentioned training needs. Due to the variety of topics mentioned, they were prioritized to address the most important issues not only theoretically but also to allow participants to experience and actively engage with different issues in an interactive manner. As a result, the training sessions tackled the following main themes:

- The citizen science process in general
- Communication and evaluation
- Internal and external communication
- Storytelling and open issues



### 3.1.2 Training Sessions

Originally, a physical train-the-trainer workshop was planned for each of the five CSIs. However, the pandemic situation in the participating countries made travelling and meeting physically too unpredictable to plan. Therefore, the **T7.2.1 – Train-the-Trainer workshops** were adapted and converted into virtual settings, to offer four online training sessions for all CSIs, which were also open for participation of horizontal partners as well.

The design for the online trainings mixed theoretical inputs providing the most relevant information on a specific topic, practical exercises to apply and try out methods, and reflection sessions to deepen and integrate what was learned. The mix of methods implemented allowed participants to practice the usage of interactive tools. After each of the training sessions, participants received a follow-up message indicating resources and links as further reading materials to deepen the knowledge gained, as well as the PowerPoint presentations delivered by the ZSI team and the documentation of the training sessions including visualizations (Miro boards, Mentimeter) of the exercises. All materials have also been uploaded to MS teams.

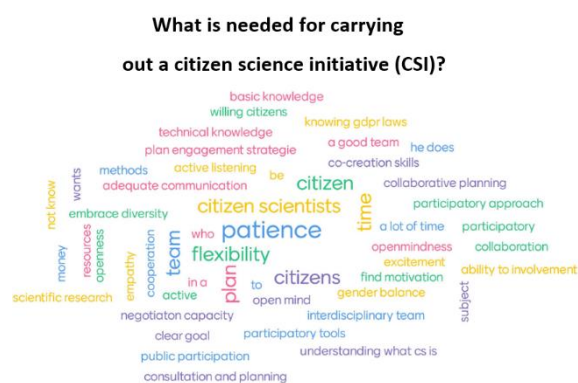


Figure 2: Interactive exercise: Needs for carrying out a CSI

Additionally, a feedback survey was distributed to the training participants, giving them the chance to evaluate their satisfaction with the training's input, interactive exercises, provided materials, and overall structure.

The feedback received after each training was gathered, analyzed, and utilized to make continuous improvements that cater to the specific needs of CSI partners for the remaining planned training sessions. Participation in the workshops was consistently high, both among CSI teams and horizontal partners. In the following, each training session is outlined, including details of the process, the exercises conducted, and the feedback received.

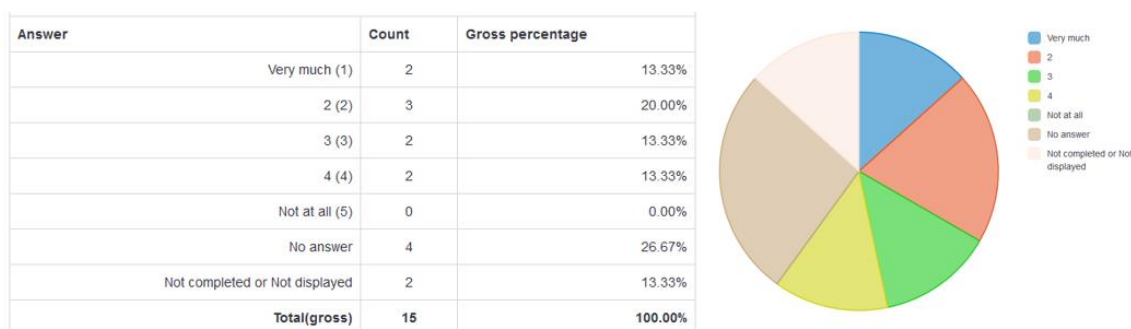


## Training 1

On November 16, 2021, the first training session on the “citizen science process” was conducted. A total of 21 participants, including CSIs and horizontal partners, were present. The aim of this training was to foster a basic understanding of the significance of placing individuals at the core of the Citizen Science process, setting the roles and purpose of this participatory approach. Additionally, the session aimed to illuminate the stereotypes that CSIs might encounter in their projects by incorporating an exercise to raise awareness on the topic. Throughout this session, input was provided, and participants engaged with three different interactive exercises. The structure also included opportunities for addressing open issues, moments of reflection, and the exchange of feedback.

a) The first session began with an activity, wherein participants were prompted to the question “what is needed for carrying out a citizen science initiative?” This introductory activity served as a purposeful warm-up, specifically tailored to assess the participants' knowledge, experience and familiarity with CS initiatives. [Figure 2](#) captures the interactive nature of the session, which produced insights into the diverse perspectives within the group.

b) Following the reflection exercise an input on the basic understandings of citizen science was given by ZSI, whereas participants showed different opinions on the usefulness/relevance of this input to their CSI implementation as shown in [Figure 3](#).



c) Continuing the “Exchange on Do's and Don'ts in CS process” exercise, the objective was to discuss and collect the recommendable and avoidable aspects of citizen science processes. The participants were organized into small work groups to examine and compile the essential elements of CSI. The feedback from participants revealed differing opinions on the significance of this activity, as shown in [Figure 4](#).



Answer	Count	Gross percentage
Very much (1)	1	6.67%
2 (2)	3	20.00%
3 (3)	3	20.00%
4 (4)	0	0.00%
Not at all (5)	1	6.67%
No answer	5	33.33%
Not completed or Not displayed	2	13.33%
<b>Total(gross)</b>	<b>15</b>	<b>100.00%</b>

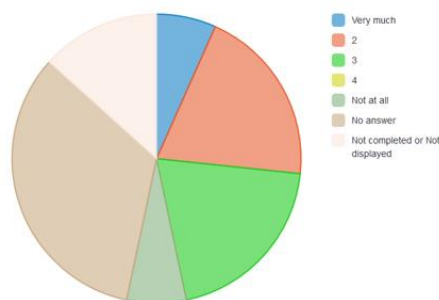


Figure 4: The "Exchange on Do's and Don'ts in CS processes" exercise is useful/relevant

d) The exercise "Personas" was used as a practical tool to help CSIs to get to know their expected participants. The usefulness and relevance of this exercise showed divergent responses, with 26.67% expressing satisfaction and 33.33% indicating dissatisfaction (Figure 5Figure 5).

Answer	Count	Gross percentage
Very much (1)	2	13.33%
2 (2)	1	6.67%
3 (3)	1	6.67%
4 (4)	5	33.33%
Not at all (5)	0	0.00%
No answer	4	26.67%
Not completed or Not displayed	2	13.33%
<b>Total(gross)</b>	<b>15</b>	<b>100.00%</b>

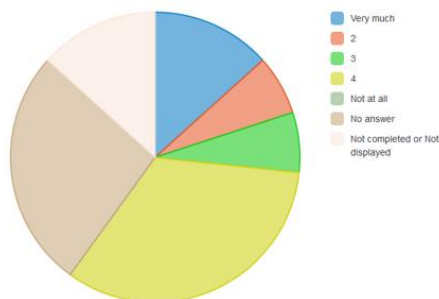


Figure 5: The exercise "Personas" is useful/relevant

e) After a reflection round, this session continued with the last exercise which was focused on raising awareness of stereotypes with the exercise called "I Am, but I am Not." Responses regarding the usefulness/relevance of this exercise to the implementation of their CSIs varied. Whereas 33.33% stated that they did not find this exercise useful, while 20% indicated that they found it somehow useful to very useful, and 46.66% did not provide any responds (Figure 6Figure 6).

Answer	Count	Gross percentage
Very much (1)	1	6.67%
2 (2)	0	0.00%
3 (3)	2	13.33%
4 (4)	2	13.33%
Not at all (5)	3	20.00%
No answer	5	33.33%
Not completed or Not displayed	2	13.33%
<b>Total(gross)</b>	<b>15</b>	<b>100.00%</b>

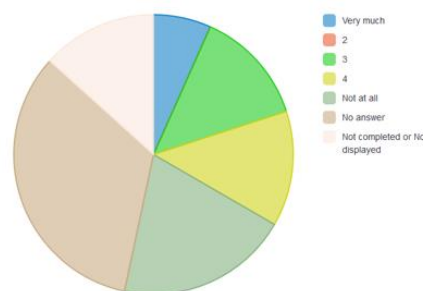


Figure 6: The exercise "I Am, but I am Not" is useful/relevant





Following the conclusion of the first training, participants were asked about their confidence in taking the next steps in implementing the CSIs, and only 20% of them indicated feeling confident (Figure 7).

Answer	Count	Gross percentage
Very much (1)	0	0.00%
2 (2)	3	20.00%
3 (3)	0	0.00%
4 (4)	2	13.33%
Not at all (5)	1	6.67%
No answer	5	33.33%
Not completed or Not displayed	4	26.67%
<b>Total(gross)</b>	<b>15</b>	<b>100.00%</b>

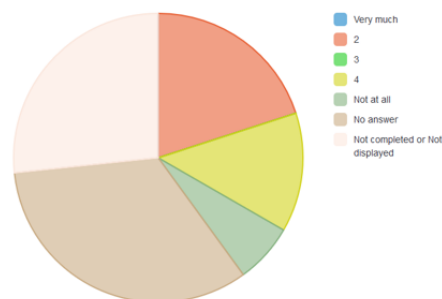


Figure 7: I feel confident for the next steps in my CSI

Feedback suggested that the training was well-prepared and structured. Participants felt that the interactive elements were satisfactory. Areas for improvement included the “Personas” and “I am...BUT I am not...” exercises, which were not very well-received. The allocation of time for agenda items and the overall training objective were identified as areas that could be enhanced. Additionally, participants indicated that having more time for questions would be beneficial.

Looking at the overall picture, 40.71% of responses were positive, 27.14% were neutral, and 32.14% were negative.



## Training 2

The second training focused on “communication & evaluation.” The training took place on November 23, 2021, and a total of 21 participants were present. The objective of this training was to expound upon fundamental concepts related to process management, specifically addressing the effective outreach and recruitment of citizen scientists. The emphasis was on equipping participants with a thorough understanding of key principles in science communication, campaigning, and strategies for recruitment.

a) The session started off with a warm-up activity in the plenary setting, following a brainstorming on “How and what to communicate?” This technique was used to encourage participants to think outside the box and to collect as many options/answers to the posing question as possible. The feedback on whether this was useful differentiated ([Figure 8](#)[Figure-8](#)).

Answer	Count	Gross percentage
Very much (1)	2	22.22%
2 (2)	1	11.11%
3 (3)	1	11.11%
4 (4)	2	22.22%
Not at all (5)	0	0.00%
No answer	2	22.22%
Not completed or Not displayed	1	11.11%
<b>Total(gross)</b>	<b>9</b>	<b>100.00%</b>

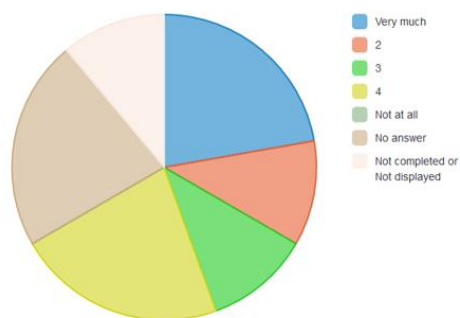


Figure 8: Brainstorming exercise 'How and what to communicate?' is useful

b) The next session followed an input on “Basic Communication,” addressing the basic principles, communication strategies and different forms of communication. 66.66% found these insights useful and relevant, while 11.11% (one individual) indicated that it was not useful, as shown in [Figure 9](#)[Figure-9](#).

Answer	Count	Gross percentage
Very much (1)	1	11.11%
2 (2)	2	22.22%
3 (3)	3	33.33%
4 (4)	1	11.11%
Not at all (5)	0	0.00%
No answer	1	11.11%
Not completed or Not displayed	1	11.11%
<b>Total(gross)</b>	<b>9</b>	<b>100.00%</b>

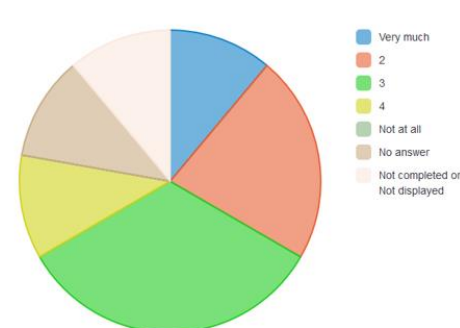


Figure 9: Input on 'Basic communication' is useful/relevant



c) The concept of “Expert Tables” was conceived as an avenue for sharing experiences and receiving insights from experts across three specific topics. The purpose of this exercise was to provide the group with access to the expertise and experiences of particular individuals, fostering a collaborative exchange of knowledge.

The group was divided into three breakout rooms each hosted by a designated expert on the topic. The topics covered in this exercise were the following:

- Social media campaigning
- Recruitment strategy
- Main principles of science communication (including language and visualization)

Participants' opinions on the usefulness of this exercise were evenly split, with 33.33% expressing a positive view, 33.33% indicating that they did not find it useful, and the other 33.33% did not respond ([Figure 10](#) ~~Figure 10~~).

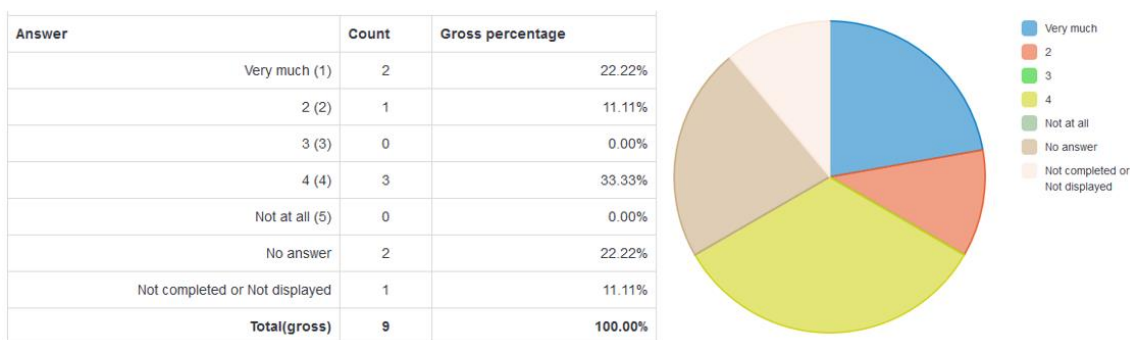


Figure 10: The exercise 'Expert Tables' is useful

d) Furthermore, an input on “Participatory Evaluation” was given by ZSI covering the three basic choices at the basis of the evaluation; theoretical background, the evaluation model and how will the evaluation work practically. The feedback of the participants shows that 55.55%



Answer	Count	Gross percentage
Very much (1)	2	22.22%
2 (2)	1	11.11%
3 (3)	2	22.22%
4 (4)	2	22.22%
Not at all (5)	0	0.00%
No answer	1	11.11%
Not completed or Not displayed	1	11.11%
<b>Total(gross)</b>	<b>9</b>	<b>100.00%</b>

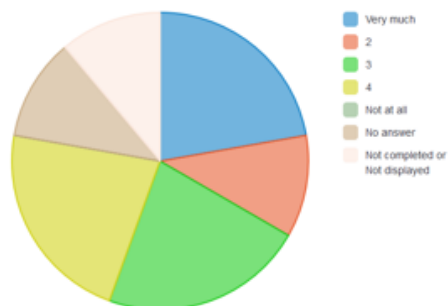


Figure 11: Input on 'Participatory evaluation' is relevant

found the input on this topic relevant, whereas 22.22% not so relevant and 22.22% did not answer the question, as shown in [Figure 11](#).

e) Following the input, an exercise on evaluation strategy occurred. Its purpose was to internally engage CSI teams in discussing insights from the input session and developing a preliminary evaluation strategy with the help of an evaluation tool. The feedback on this exercise consisted of 44.44% positive and 33.33% negative, while 22.22% did not answer, as depicted in [Figure 12](#).

Answer	Count	Gross percentage
Very much (1)	2	22.22%
2 (2)	2	22.22%
3 (3)	0	0.00%
4 (4)	2	22.22%
Not at all (5)	1	11.11%
No answer	1	11.11%
Not completed or Not displayed	1	11.11%
<b>Total(gross)</b>	<b>9</b>	<b>100.00%</b>

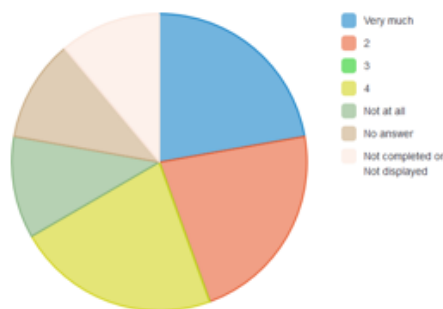


Figure 12: Exercise 'Evaluation strategy' is useful/relevant

f) Following the conclusion of the second training, participants were asked about their confidence in taking the next steps in implementing the CSIs; only 22.22% of them indicated feeling confident ([Figure 13](#)).

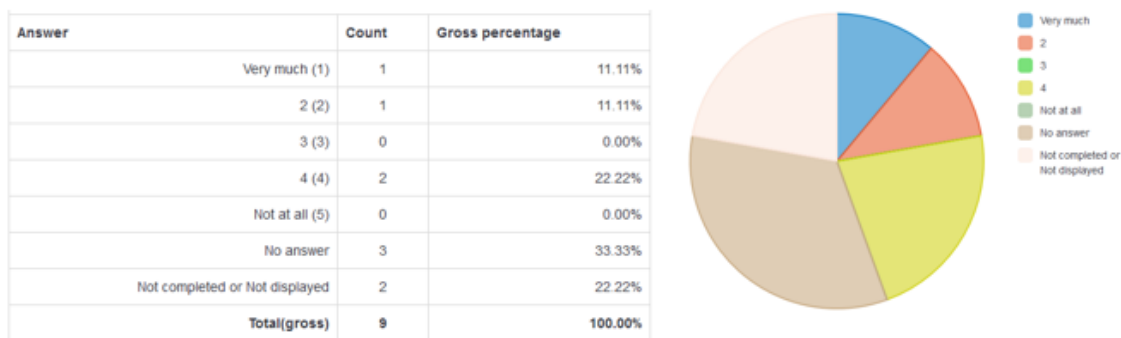


Figure 13: I feel confident for the next steps in my CSI

The feedback suggested that the effectiveness of exercises varied among individuals, with some finding them helpful and others not indicating individual preferences. Overall, participants felt that the interactive elements were satisfactory. Areas for improvement included the input on “Basic communication”, the information and materials provided prior to the training, which were not very well received by the whole group. The time given for questions and interactivity were identified as areas that could be enhanced. Looking at the overall picture, 47.54% of responses were positive, 24.59% were neutral, and 27.87% were negative.

After the experience of the first two training sessions and based on the results of the evaluation gathered, the format was adjusted to better tailor the training sessions to the expressed needs of the CSIs. The different levels of experience and differing expectations of participants, as well as the diversity and varying level of implementation of the CSIs, proved to be quite challenging. On one hand, suggestions to improve the training sessions included stating more clearly the purpose of each input/exercise and its relevance for the Step Change CSIs and including individuals from various partners in the breakout room activities. On the other hand, participants were content with the exchange with others and the opportunities to learn from each other, the level of interaction and the usage of hands-on tools such as Mentimeter and Miro. Feedback provided by participants was analysed and used to re-design the remaining trainings.



### Training 3

The third training session centred on “internal and external communication in citizen science.” This training took place on February 2, 2022, with a total of 19 participants. The aim of this training was to learn about the hard facts about communication channels by delving into the practical aspects of retention strategies, and various methods to employ in communication. This session started with a warm-up and proceeded with an exercise which was tailored as an overview session to discuss the current status of CSIs. This exercise provided a platform for CSIs to share their strategies, experiences, and knowledge in their implementation. Positive feedback was received for this exercise, with 75% of participants expressing that they found it to be useful as seen in [Figure 14](#).

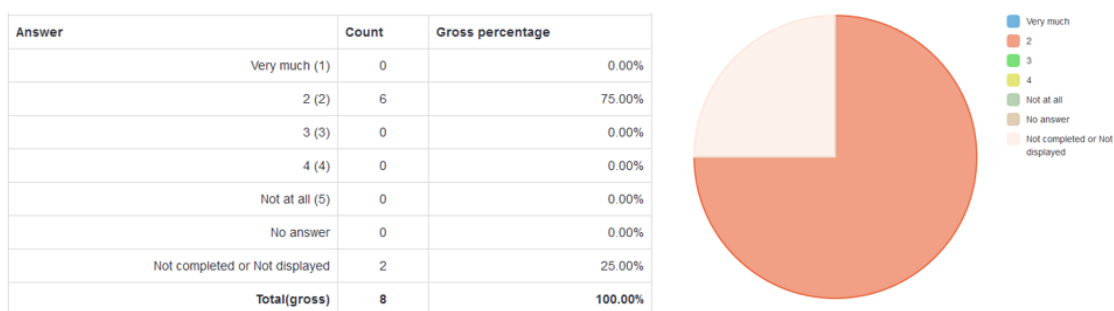


Figure 14: The exercise on “Where do the CSIs stand in the process” is useful/relevant

Following the above-mentioned exercise, the ZSI team introduced an online tool (Kahoot) to engage with participants. For the partners to get familiar with this tool, a quiz on the topic “Sustainable Development” Goals was played out, whereas according to the feedback 62.50% found this tool to be useful, while 12.50% did not find it useful at all ([Figure 15](#)).

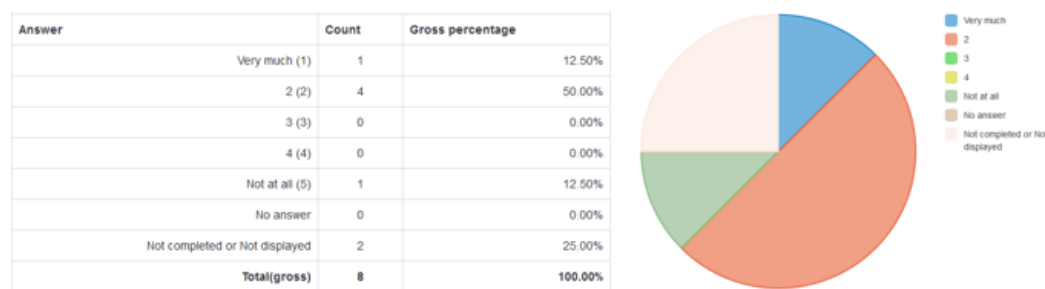


Figure 15: Kahoot as an engagement tool is useful

Before delving into other exercises, an input session was given on the topic “Knowing your Citizen Scientists.” This session offered different insights, including an exploration of the motivations that drive individuals to become citizen scientists. While also looking at more specific considerations to take into account when implementing CSIs. This session provided



guidance on effective communication strategies with citizen scientists. In this regard, the feedback received outlines that 62.50% were somehow satisfied and/or very satisfied, while 37.50% did not respond ([Figure 16](#)~~Figure 16~~).

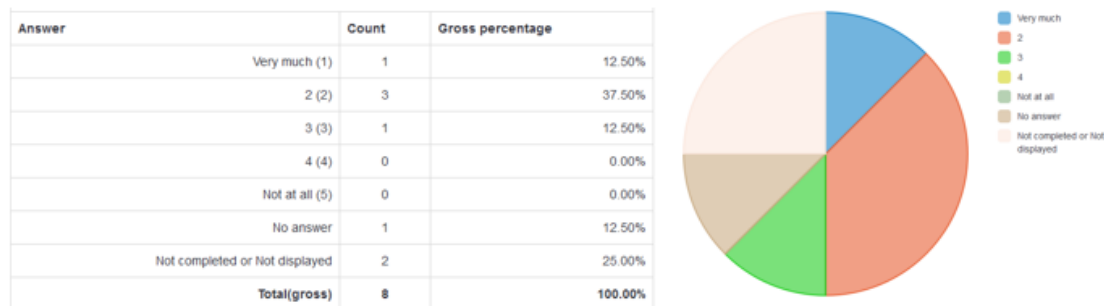


Figure 16: Input on 'Knowing your citizen scientists' is useful

This session continued with another exercise on communication items. The group was divided into small groups where they were asked to analyse five communication items per group. The target topics were divided into four parts: i) Language, ii) Motivation of the target group addressed, iii) Accessibility and inclusiveness iv) Special features & particularities. The feedback on this exercise was positive as 62.50% found this exercise relevant, as shown in Figure 17.

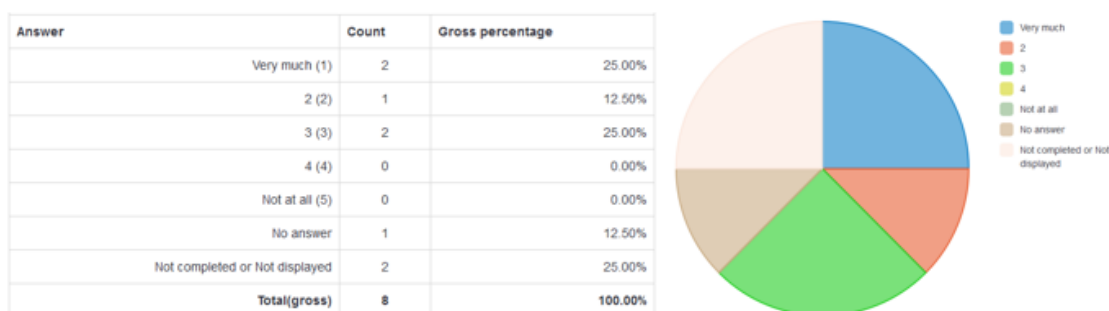


Figure 17: Exercise on Communication items is useful/relevant

After the exercises, a plenary discussion on the communication items followed. During this discussion, a rapporteur from each group presented their analysis. The feedback on this part of the session was 62.50% positive and 37.50% did not respond, see [Figure 18](#)~~Figure 18~~.

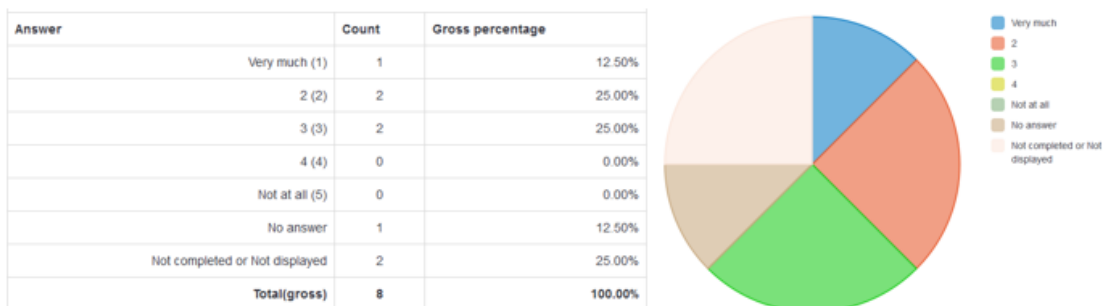


Figure 18: The discussion on 'Communication Item' is useful/relevant

At the end of training 3, participants were asked about their confidence in proceeding with the implementation of CSIs, 62.50% of respondents answered to be somewhat confident and very confident. The enhanced confidence of participants demonstrated progress, particularly when compared to their assessment in the initial two training sessions ([Figure 19](#)Figure-19).

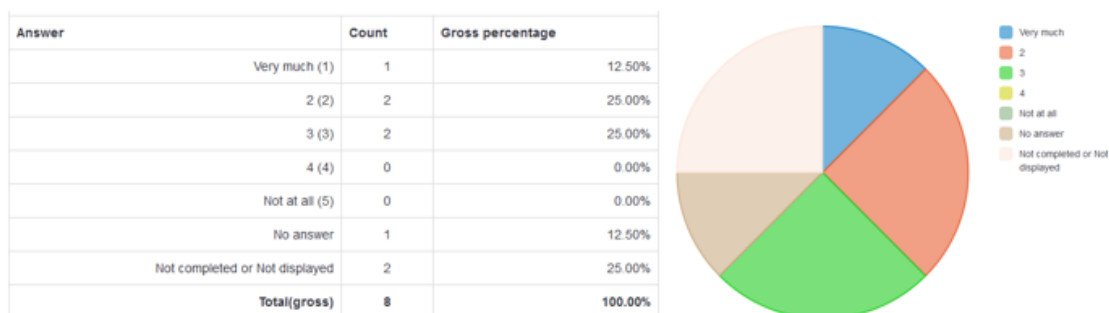


Figure 19: I feel confident for the next steps in my CSI

To conclude training 3, the general feedback suggested that the training was well-prepared and structured. Participants felt that the interactive elements, time allocation, exercises as well as the training objectives were satisfactory.





## Training 4

The last training focused on “storytelling and open issues.” This training was designed to create space for CSIs to discuss the upscaling of their CS projects and the impact of these processes. Additionally, storytelling as an engagement tool for citizen science was incorporated with insights and practical exercises. The training began with a warm-up and then delved into providing insights on legal matters, addressing subjects such as the legal protection of citizen scientists, insurance, data protection, property ownership, copyright, and the rights of third parties. This session also encompassed relevant examples related to the topic, along with a discussion on potential challenges associated with the subject matter.

The input on this subject according to the feedback was well received, 75% of responders indicated that it was useful and relevant for them, see [Figure 20](#).

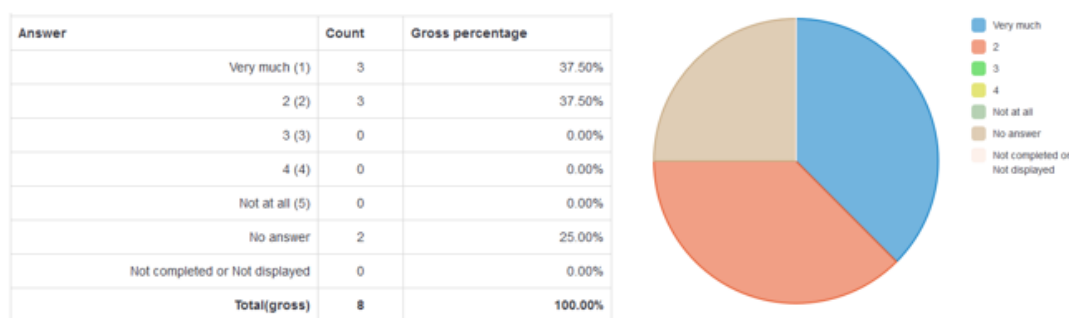


Figure 20: Input on 'Legal issues in Citizen Science Initiatives' is useful/relevant

The session continued with the exercise on “Storytelling as an engagement tool for Citizen Science.” Before going to the exercise, input was given on the topic by tackling the following questions:

- What is storytelling in science?
- Why is this useful to citizen science projects?
- How do you craft a story?

The feedback on this input revealed that 75% of the respondents found it useful, as shown in [Figure 21](#).

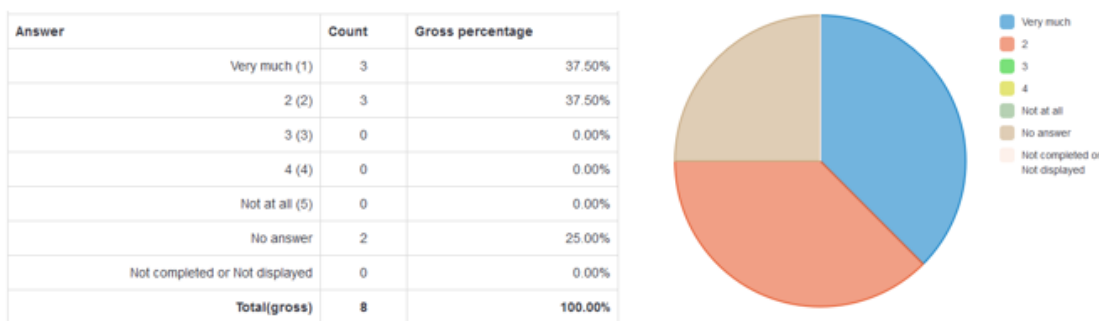


Figure 21: Input on 'Storytelling as an engagement tool for Citizen Science' is useful/relevant

Following the insights provided on the topic, the “Storytelling” exercise was conducted, with 75% of the participants expressing that the exercise was somewhat useful to very useful. No negative remarks were made in this regard (Figure 22).

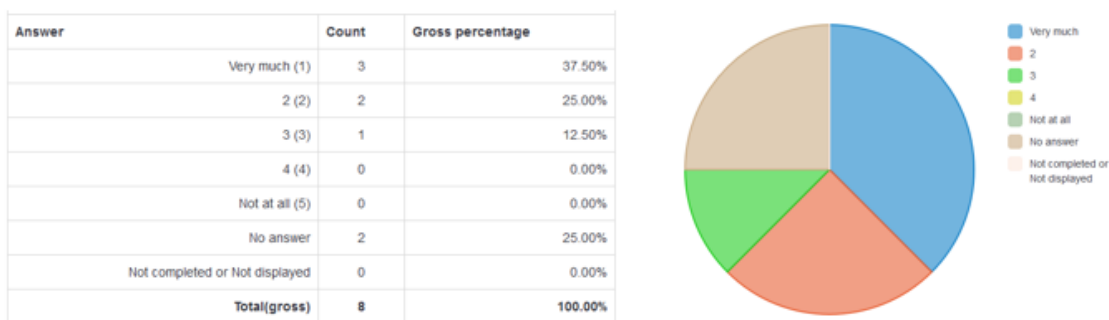


Figure 22: The exercise 'Storytelling as an engagement tool for Citizen Science' is useful/relevant

The continues session was a learning quiz, with the aim of trainees reflecting on what they have learned during the four sessions. Participants were divided into 2 groups, where they have collected aspects, elements, methods, or principles that spontaneously came to their mind. The results of this reflective exercise are shown in Figure 23.

Participants then assessed the learning quiz, with 50% indicating that they have either learnt very much or have learnt from this quiz, whereas the other 50 % did not answer the question (Figure 24).

ABC on lessons learnt - Group 1	ABC on lessons learnt - Group 2
Accessibility	Action hero
Balance	Balanced information
Communication	Clarity
Diversity	Diversity
Engagement	Ethics
Fun	Fun
Good communication	Gender balance
Hero	Hero
Insurance	Inclusiveness, information
Joy	Journey
Knowledge, knowledge exchange	Knowledge
Legal rights	Language
Mutual Learning	Motivation
Needs	Narrative
Opportunities	Obstacles
Participation, Personas	Principles, Personas
Quiz	Quotes
Recruitment, roles	Responsibilities, roles
Strategy, Social media	Storytelling
Target group, Tools	Target group
Usability	Usability
Visibility	Visualisation
Website, working groups	Workshop
X	Xman = hero
Youth inclusion	Young
Zoom meetings	Zenit

Figure 23: Results of the learning quiz

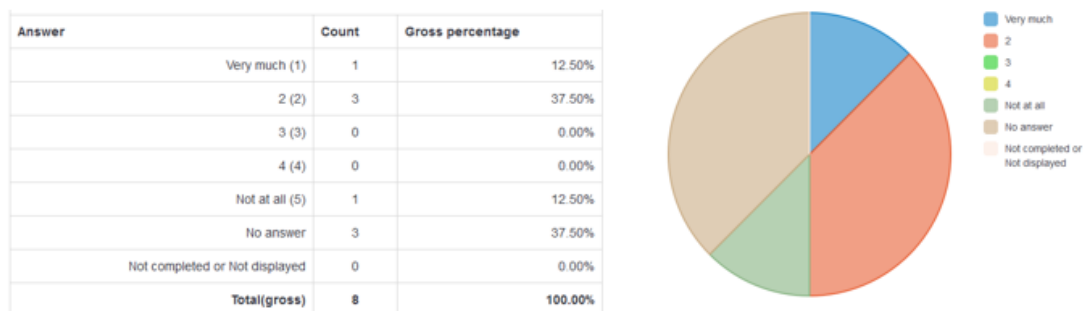


Figure 24: Learning quiz: Reflection encompassing all four training sessions

After the fourth training concluded, participants were surveyed about their confidence in taking the next steps in implementing the CSIs. 62.50% of them expressed feeling confident, reflecting an increase in confidence compared to the previous training sessions (Figure 25).

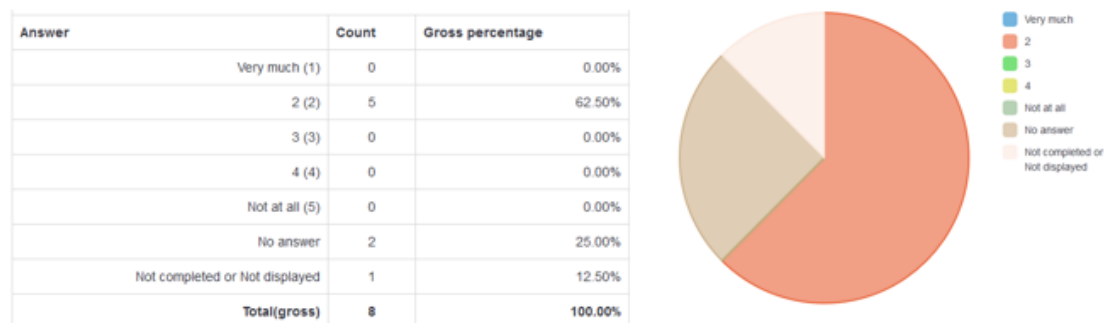


Figure 25: I feel confident for the next steps in my CSI

To summarize training 4, the feedback received underscored that the training organization and its objectives were well structured. Notably, there was a boost in the participants’ confidence levels. The evolution in confidence exhibited by CSI partners, progressing from Training 1 to Training 4, not only demonstrates a positive outcome of the learning process but also underscores a notable enhancement in their proficiency for expanding and implementing the citizen science initiatives.



### **3.2 – Assistance Activities – Open Fora**

As the assistance activities were not further defined in Sub-task 7.2.2., Task and Work package leader ZSI, considering the needs of the five CSIs assessed and the experiences made in the training sessions in Sub-task 7.2.1. as well as the first Mutual Learning Event in Task 7.3. suggested a regular monthly meeting. These meetings were open to all CSIs for exchange on current issues and challenges, drawing on the experiences and skills of other project partners for ad hoc advice and guidance. Attendance was not obligatory; partners could join in on a voluntary basis if they felt the need to share something. Other than the monthly management meetings, the open fora were not to report on the work done, but to reflect and share experience and advice. Pursuant to its definition, the **Open Fora** did not have an agenda, but ZSI staff prepared some guiding questions in case no partner is volunteering to discuss a specific issue. ZSI as task leader has guided the discussion, with all partners, CSIs, and horizontal partners present, to contribute ideas on how to tackle a certain issue or share their own experiences. This format among other subjects discussed and reflected on the diverse range of citizen scientists participating in the projects, taking into account their heterogeneity. The objective was to enable project partners to receive support and feedback, without the logic of progress reporting, from so-called “critical friends.”

The Open Fora took place from June 21, 2022, to October 17, 2023. In total 13 Open Fora took place throughout this timeframe, whereas in addition to the CSIs some horizontal partners were present for the majority of them. Similar to the train-the-trainer workshops, a questionnaire was sent out to the partners for their evaluation of this format. The upcoming section will outline participants’ feedback regarding this format in general, as well as their insights into the tools that were used for this format.

Comparing the satisfaction rates, the highest percentage of respondents answering that they are satisfied or very satisfied was registered for the question on Open Fora meetings in general as well as that on the length of the meetings (a total of 78.95% for both of them), followed by the implementation via Zoom platform, which met with 77.78% of (high) satisfaction. Lower satisfaction rates were stated regarding the notes on the Miro Board (52.63%) and the frequency of the meetings (60%). The highest rates of dissatisfaction were recorded for the notes on the Miro Board (26.32% unsatisfied or very unsatisfied) and the frequency of the meetings (10% of respondents). On the open question asking the survey participants to reflect on the monthly



Open Fora events in Step Change (What works? What does not work? What would you change?), 15 respondents or 68.18% contributed their opinion, while 6 did not (31.82%).

a) Satisfaction with Open Fora meetings in general:

Overall, a full 78.95% of respondents (15 out of 19) were satisfied or very satisfied with the Open Fora meetings in general, while 15.79% commented neutral and 5.26% (one individual) were unsatisfied. In response to the open question, several comments were received on the Open Fora in general: Overall, the format is appreciated. *“I like them as they are.”*, *“Open Forum is a great opportunity for sharing experiences [...]”*, *“[...] I do think this space is useful for the CSI’s, and that’s what counts.”*, but the fact that *“[...] some partners are more active in these sessions than others.”* or *“[...] it’s always the same people that share their work and progress.”* is criticised by some. Apart from the comments cited below in relation to specific aspects of the Open Fora, we received suggestions in the Open Fora in general such as *“[...] the option of inviting sometimes key speakers is an added advantage”* or *“[...] a specific topic would have been good to help to start a vivid discussion [...]”*. Implementing these recommendations would, however, blur the difference in format between Mutual Learning Event and Open Forum, [Figure 26](#)

Answer	Count	Gross percentage	Top 2, Middle, Bottom 2
1 (1)	0	0.00%	10.00%
2 (2)	2	9.52%	
3 (3)	6	28.57%	30.00%
4 (4)	7	33.33%	
5 (5)	5	23.81%	60.00%
<b>Total(valid)</b>	<b>20</b>		<b>100.00%</b>
No answer	1	4.76%	
Not displayed	0	0.00%	
<b>Total(gross)</b>	<b>21</b>		<b>100.00%</b>
Descriptive statistics			
Arithmetic mean			3.75
Standard deviation			0.97

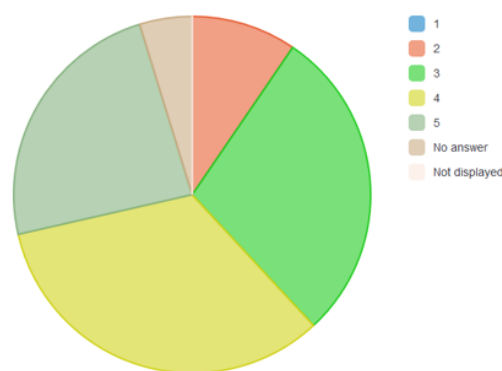


Figure 26: Satisfaction with Open Fora meetings in general

b) Satisfaction with frequency:

When it comes to the frequency of the meeting, which took place once a month, 60% were (very) satisfied, 35% neutral and 10% (very) unsatisfied ([Figure 27](#)). Some of the comments received in the open question at the end of the block on Open Fora explicitly deal with the frequency of the format. *“They are kind of useful in a serendipitous way, but we can also skip them. In particular, now that the consortium is stable and we know each other.,”* *“I think that open forum is a good practice, but I lose interest because there are many monthly*



meetings.”, “The frequency of the meetings is OK. The problem is to combine them with the other meetings related to the project...” These illustrate the fact that this particular format cannot be assessed on its own but is seen in the context of the project as a whole.

Answer	Count	Gross percentage	Top 2, Middle, Bottom 2
1 (1)	0	0.00%	5.26%
2 (2)	1	4.76%	
3 (3)	3	14.29%	15.79%
4 (4)	10	47.62%	
5 (5)	5	23.81%	78.95%
<b>Total(valid)</b>	<b>19</b>		<b>100.00%</b>
No answer	2	9.52%	
Not displayed	0	0.00%	
<b>Total(gross)</b>	<b>21</b>		<b>100.00%</b>
Descriptive statistics			
Arithmetic mean			4
Standard deviation			0.82

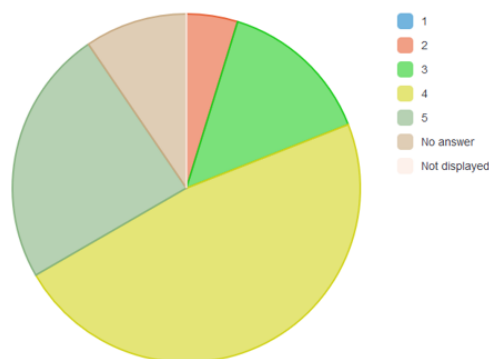


Figure 27: Satisfaction with frequency - Open Fora

c) Satisfaction with length of Open Fora:

The vast majority of respondents (78.95% or 15 out of 19) were (very) satisfied with the length of the Open Fora, which usually last one hour. 15.79% or three individuals answer neutral, and one person (5.26%) is unsatisfied (Figure 28).

Answer	Count	Gross percentage	Top 2, Middle, Bottom 2
1 (1)	0	0.00%	5.26%
2 (2)	1	4.76%	
3 (3)	3	14.29%	15.79%
4 (4)	8	38.10%	
5 (5)	7	33.33%	78.95%
<b>Total(valid)</b>	<b>19</b>		<b>100.00%</b>
No answer	2	9.52%	
Not displayed	0	0.00%	
<b>Total(gross)</b>	<b>21</b>		<b>100.00%</b>
Descriptive statistics			
Arithmetic mean			4.11
Standard deviation			0.88

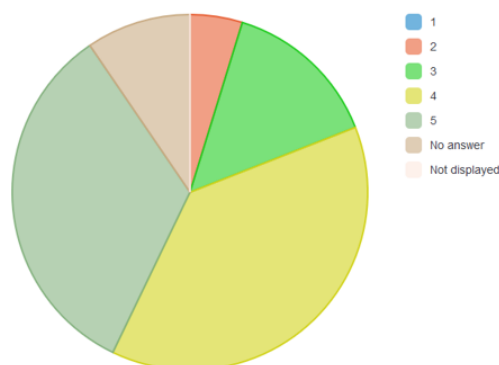


Figure 28: Satisfaction with length of Open Fora

d) Satisfaction with guiding questions:

The guiding questions for the Open Fora aimed at facilitating the discussion. The guiding question to start with was “What are you currently working on?” followed by “Which practical issues would you like to solve, for which aspect would you like to get input?” Representatives of CSIs could volunteer to share their issues; any suggestions by other participants in the meetings were noted on the Miro Board as a follow-up action. Depending on the dynamic, either other CSIs took turns to answer a question, or the first person continued to answer the next guiding question. Exactly two thirds (66.66%) of respondents were very satisfied or satisfied with the



guiding questions, while 33.33% were neutral. No respondent was unsatisfied or very unsatisfied (Figure 29).

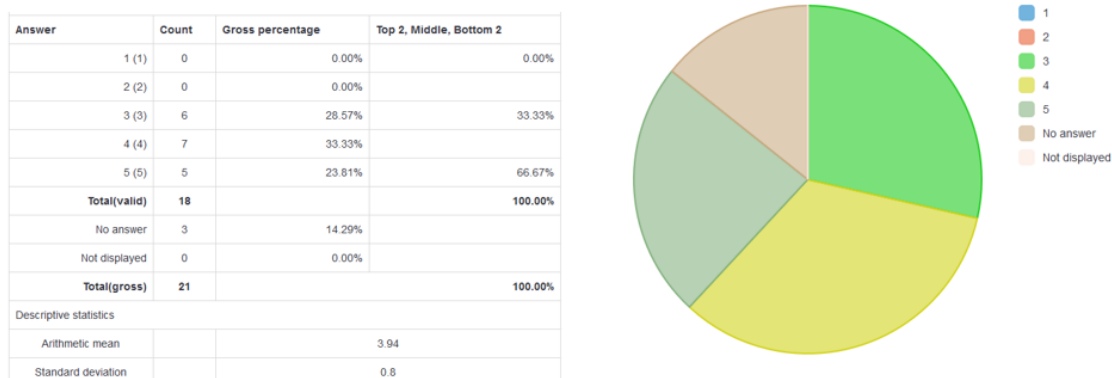


Figure 29: Satisfaction with guiding questions - Open Fora

e) Satisfaction with notes on Miro Board:

The satisfaction with the notes on a Miro Board to follow-up on the issues discussed and suggestions made was low. Still, 52.63% of respondents expressed being satisfied or very satisfied with the tool, but a full 26.32% (or five respondents) were unsatisfied, while 21.05% (or four respondents) were neutral (Figure 30).

One person commented later that “Personally, I find it difficult to use Miro,” while another answered, “I really appreciate the Miro Board, which helps keep track of all the points that arise during the meeting...” This illustrates that this particular tool depends very much on personal liking.

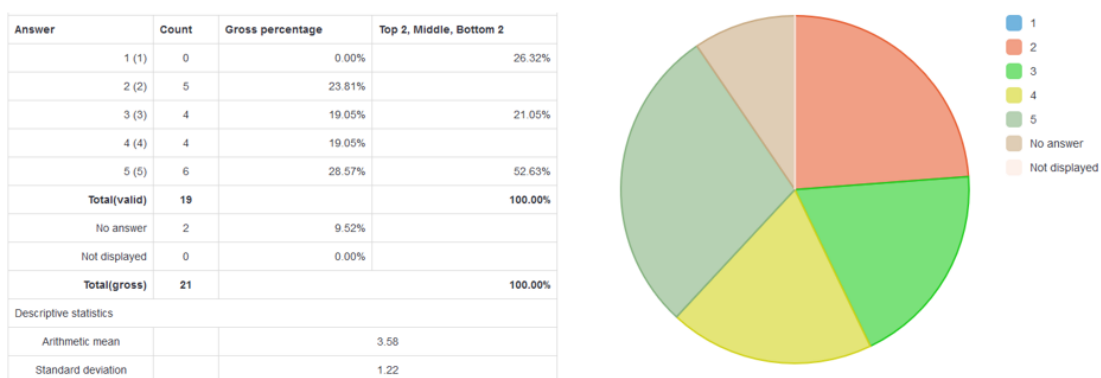


Figure 30: Satisfaction with notes on Miro Board - Open Fora

f) Satisfaction with implementation via ZOOM:

Using ZOOM as the platform to implement the Open Fora meets with a high satisfaction again, namely 77.78%. A full eleven out of 18, or 61.11% were very satisfied with using ZOOM. However, one respondent was unsatisfied (5.56%) and three were neutral (16.67%), (Figure



31Figure 31). Given the high satisfaction rate and reliability of the tool, we have chosen to persist with using ZOOM for our WP 7 online events, opting to avoid experimentation.

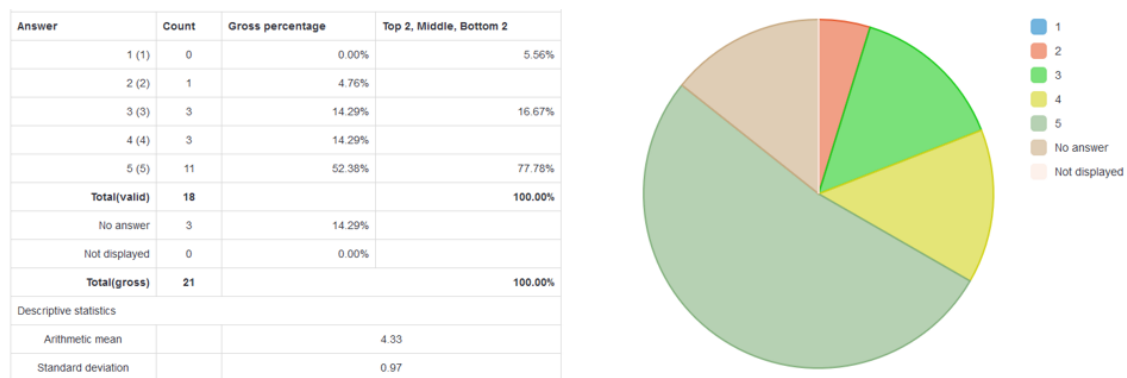


Figure 31: Satisfaction with implementation via ZOOM

### 3.3. – Four Mutual Learning Events (MLEs)

The 2.5-hour mutual learning events focused on a given topic based on the training needs identified at the beginning of the project as well as the status of implementation of the five CSIs. In preparation, all CSIs received a reflection template and were instructed to reflect on the topic of the event in question and how they dealt with challenges and hick-ups. Each partner implementing a CSI named and described the five main challenges with regard to the topic and how they tackled them and elaborated on key learnings. These challenges were presented and discussed in three batches in the meeting, followed each time by input from an invited external speaker, linking to these and/or presenting their own challenges. The feedback received for the mutual learning events will be presented below, with further elaboration on its results in Chapter 4.

When comparing the percentages of (high) satisfaction for all sub-questions of the survey, the invitation of external speakers meets with the highest satisfaction rate (88.89% of respondents), followed by the summaries of lessons learned (85.71%), the topics chosen and the output papers (both 80%), the frequency of ML activities (76.19%), the ML workshops overall (75%). The two aspects with the lowest rate of satisfaction are the length of the ML workshops (65%) and the reflection template (63.16%).





The highest number of neutral answers were received for the reflection templates (36.84%), followed by the length of the ML workshops (35%), with the output papers, topics chosen and ML workshops overall on third place ex aequo (20%).

The two aspects with the highest rate of dissatisfaction are the frequency of ML activities (9.52%) and the ML workshops overall (5%).

Below, some more details are given for each sub-question asked on Mutual Learning Events in Step Change.

On the open question asking the survey participants to reflect on the Mutual Learning Activities in Step Change (What works? What does not work? What would you change?), a total of 13 answers were received, while eight respondents did not provide any further details (40.91%).

a) Satisfaction with frequency of MLEs:

More than three quarter of the respondents (76.19%) are satisfied or very satisfied with the frequency of the Mutual Learning Events. However, nearly ten percent (9.52%) or two respondents were unsatisfied or very unsatisfied (Figure 32). Unfortunately, we do not know if they would prefer to have MLE more often or less often.

Answer	Count	Gross percentage	Top 2, Middle, Bottom 2
1 (1)	0	0.00%	9.52%
2 (2)	2	9.52%	
3 (3)	3	14.29%	14.29%
4 (4)	7	33.33%	
5 (5)	9	42.86%	76.19%
<b>Total(valid)</b>	<b>21</b>		<b>100.00%</b>
No answer	0	0.00%	
Not displayed	0	0.00%	
<b>Total(gross)</b>	<b>21</b>		<b>100.00%</b>
Descriptive statistics			
Arithmetic mean			4.1
Standard deviation			1

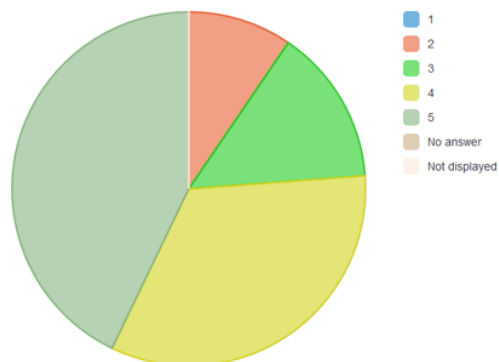


Figure 32: Satisfaction with frequency of MLE

b) Satisfaction with topics chosen:

The topics chosen for the MLEs (recruitment; ethical issues; data collection) were based on the initial assessment of training needs via a detailed questionnaire as well as the bilateral interviews. A clear majority of 80% of respondents were satisfied with the topics chosen so far for the Mutual Learning Events (16 out of 20 who answered that question) while 20% (4 respondents) were undecided about this. No respondent was (very) unsatisfied, (Figure 33). Some comments in the open question specifically addressed the selection of topics: “I think that the topics covered so far in the MLW have been well selected and cover issues that the CSI



and other projects continue to face ...”; “often the content of meetings seems the same to me i don’t see the difference between ML, open forum, horizontal CSI etc.”

Answer	Count	Gross percentage	Top 2, Middle, Bottom 2
1 (1)	0	0.00%	0.00%
2 (2)	0	0.00%	
3 (3)	4	19.05%	20.00%
4 (4)	7	33.33%	
5 (5)	9	42.86%	80.00%
<b>Total(valid)</b>	<b>20</b>		<b>100.00%</b>
No answer	1	4.76%	
Not displayed	0	0.00%	
<b>Total(gross)</b>	<b>21</b>		<b>100.00%</b>
Descriptive statistics			
Arithmetic mean			4.25
Standard deviation			0.79

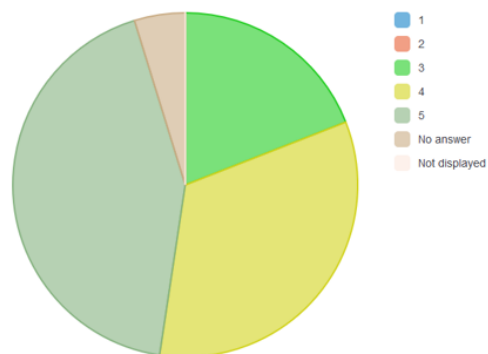


Figure 33: Satisfaction with topics chosen - MLE

c) Satisfaction with the reflection template:

When being asked about the reflection template shared with the Citizen Science Initiatives in preparation of each MLE, which was not about reporting activities but to reflect upon what has been done in relation to the topic of the MLE in question, which challenges and issues have been encountered and how these were dealt with, nearly two thirds (63.16%) of respondents were (very) satisfied while 36.84% were neutral about this, (Figure 34). Specific comments received on the reflection template include “I feel that the reflection document is a good practice,” “The structured template works well ...,” “[...] collecting Reflection sheets with a large advance and presenting the main points during the meeting, hardly meets [the MLE’s] aim.”

Answer	Count	Gross percentage	Top 2, Middle, Bottom 2
1 (1)	0	0.00%	0.00%
2 (2)	0	0.00%	
3 (3)	7	33.33%	36.84%
4 (4)	8	38.10%	
5 (5)	4	19.05%	63.16%
<b>Total(valid)</b>	<b>19</b>		<b>100.00%</b>
No answer	2	9.52%	
Not displayed	0	0.00%	
<b>Total(gross)</b>	<b>21</b>		<b>100.00%</b>
Descriptive statistics			
Arithmetic mean			3.84
Standard deviation			0.76

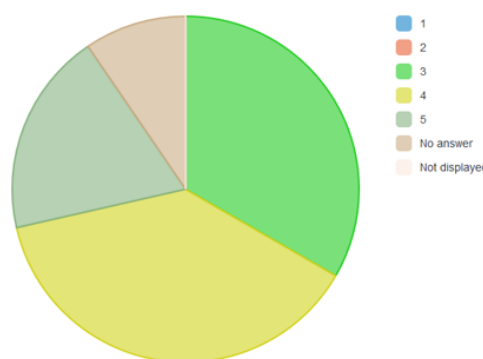


Figure 34: Satisfaction with reflection template - MLE

d) Satisfaction with ML workshops overall:

A full three quarter (75%) of respondents indicated being satisfied or very satisfied with the Mutual Learning Events overall, while 20% expressed neutrality and 5% (1 respondent) were unsatisfied, (Figure 35). Comments received in the open question included: “I think that overall, the approach worked very well at it allowed all partners to find and reflect on



common challenges and coping strategies.”, “I found the ML activities very helpful!” and “I think the Mutual Learning activities are useful because we can discuss others’ experienced on the topic (...) and share advises.” However, more sceptical ones were: “A more spontaneous and actually mutual exchange of reflections might help every CSI in a more fitted and personalized way.” as well as “[...] unfortunately, ML workshop It is not well tailored to each CSI.” Compared to the feedback from another respondent (“The mutual learning activities are a great platform of experience sharing and learning given the fact that in this consortium we are all coming with diverse knowledge and skills. It is a great way to learn from each other and also improve the quality of overall Step Change outcomes.”) illustrate that there are different expectations with regard to the training and support activities. The task description for Sub-task 7.2.2 does not indicate that the assistance activities should be individualized in any way, as WP 7 is targeting all five CSIs in the Step Change project, while each CSI has a horizontal partner allocated as a kind of sparring partner for individual support.

Answer	Count	Gross percentage	Top 2, Middle, Bottom 2
1 (1)	0	0.00%	5.00%
2 (2)	1	4.76%	
3 (3)	4	19.05%	20.00%
4 (4)	9	42.86%	
5 (5)	6	28.57%	75.00%
<b>Total(valid)</b>	<b>20</b>		<b>100.00%</b>
No answer	1	4.76%	
Not displayed	0	0.00%	
<b>Total(gross)</b>	<b>21</b>		<b>100.00%</b>
Descriptive statistics			
Arithmetic mean			4
Standard deviation			0.86

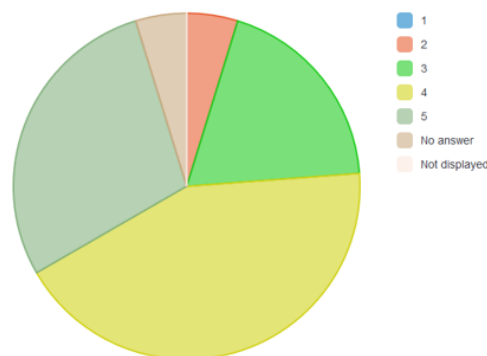


Figure 35: Satisfaction with ML workshops overall

e) Satisfaction with summaries of lessons learned presented during MLE:

The satisfaction with the summaries of lessons learned gathered and clustered from the reflection template inputs was quite high, with a full 85.71% of respondents (18 out of 21 individuals) answering they were satisfied or very satisfied with this. 14.29% or 3 individuals responded neutral to this question, (Figure 36). No specific comments were received on the summaries of lessons learned.



Answer	Count	Gross percentage	Top 2, Middle, Bottom 2
1 (1)	0	0.00%	0.00%
2 (2)	0	0.00%	
3 (3)	3	14.29%	14.29%
4 (4)	10	47.62%	
5 (5)	8	38.10%	85.71%
<b>Total(valid)</b>	<b>21</b>		<b>100.00%</b>
No answer	0	0.00%	
Not displayed	0	0.00%	
<b>Total(gross)</b>	<b>21</b>		<b>100.00%</b>
Descriptive statistics			
Arithmetic mean			4.24
Standard deviation			0.7

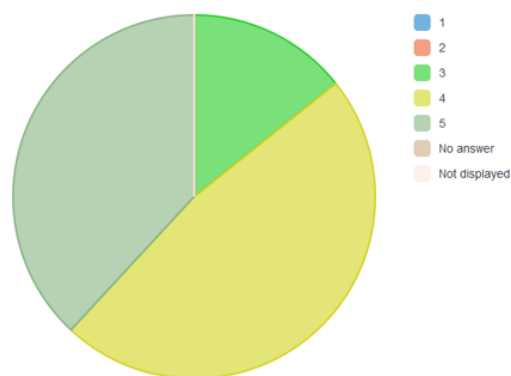


Figure 36: Satisfaction with summaries of lessons learned presented during MLE

f) Satisfaction with invitation of external speakers:

With regard to the selection of external experts to share their experiences on the defined topic of the event, 88.89% (16 out of 18 respondents) were satisfied or very satisfied, (Figure 37). Comments included: “the selection of speakers have in the most part, covered these issues well.,” “The input from external speakers was also helpful.,” “(...) the workshops seem to offer (also through the external guests) additional inspiration.”

Answer	Count	Gross percentage	Top 2, Middle, Bottom 2
1 (1)	0	0.00%	0.00%
2 (2)	0	0.00%	
3 (3)	2	9.52%	11.11%
4 (4)	7	33.33%	
5 (5)	9	42.86%	88.89%
<b>Total(valid)</b>	<b>18</b>		<b>100.00%</b>
No answer	3	14.29%	
Not displayed	0	0.00%	
<b>Total(gross)</b>	<b>21</b>		<b>100.00%</b>
Descriptive statistics			
Arithmetic mean			4.39
Standard deviation			0.7

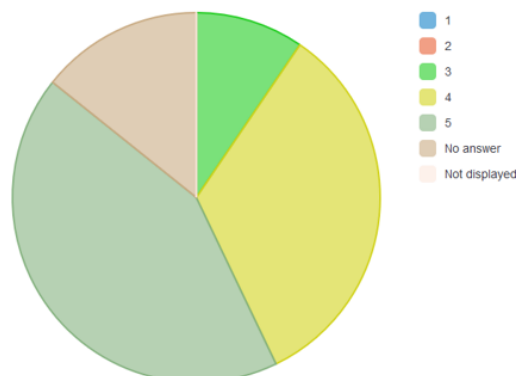


Figure 37: Satisfaction with the invitation of external speakers - MLE

g) Satisfaction with length of MLE:

Out of the 20 respondents to this sub-question, 13 or 65% were satisfied or very satisfied with the length of the MLE. Another seven or 35% answered neutral (Figure 38). One comment on the open question targeted the frequency: “The timing at times is quite lengthy (...),” assuming that at least this respondent would opt for a shorter event than the 2,5 hours (including break) foreseen.



Answer	Count	Gross percentage	Top 2, Middle, Bottom 2
1 (1)	0	0.00%	0.00%
2 (2)	0	0.00%	
3 (3)	7	33.33%	35.00%
4 (4)	6	28.57%	
5 (5)	7	33.33%	65.00%
<b>Total(valid)</b>	<b>20</b>		<b>100.00%</b>
No answer	1	4.76%	
Not displayed	0	0.00%	
<b>Total(gross)</b>	<b>21</b>		<b>100.00%</b>
Descriptive statistics			
Arithmetic mean			4
Standard deviation			0.86

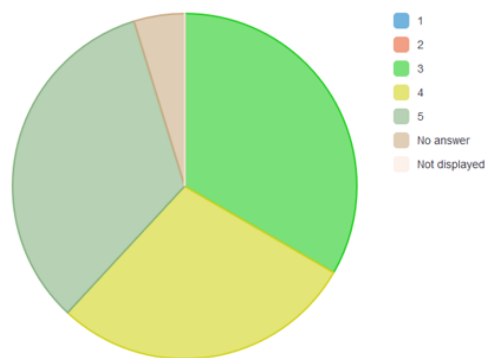


Figure 38: Satisfaction with length of MLE

h) Satisfaction with MLE output papers:

The satisfaction with the output papers prepared as a result of the Mutual Learning Events was again quite high, with twelve out of 20 respondents stating being highly satisfied and a further four being satisfied (total of 80%). A further four (20%) were neutral about the output papers (Figure 39). No respondent is unsatisfied. No specific comments were received on this sub-question.

Answer	Count	Gross percentage	Top 2, Middle, Bottom 2
1 (1)	0	0.00%	0.00%
2 (2)	0	0.00%	
3 (3)	4	19.05%	20.00%
4 (4)	4	19.05%	
5 (5)	12	57.14%	80.00%
<b>Total(valid)</b>	<b>20</b>		<b>100.00%</b>
No answer	1	4.76%	
Not displayed	0	0.00%	
<b>Total(gross)</b>	<b>21</b>		<b>100.00%</b>
Descriptive statistics			
Arithmetic mean			4.4
Standard deviation			0.82

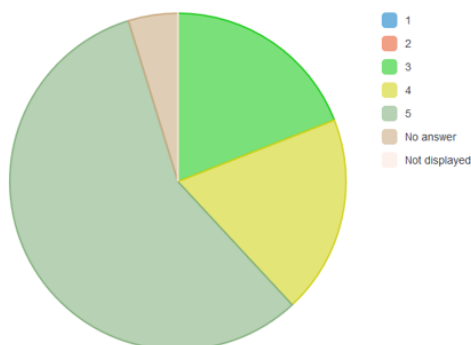


Figure 39: Satisfaction with MLE output papers



### 3.4 – Networking Activities with other Projects

As part of Work package 7, task 7.4 aimed at fostering mutual learning and exchange with other citizen science and SWAFS ecosystem initiatives and projects, activities conducted by Science for Change (SFC), occurred. In alignment with this task, the activities implemented included a comprehensive mapping of external CSIs and SWAFS initiatives, providing a nuanced understanding of the broader landscape of the CS ecosystem. Engagement with external initiatives was not limited to assessment; rather, it was extended to an active consultation for the collection of needs and planning of beneficial exchanges between Step Change CSIs and external initiatives. The collaborative effort involved different discussions, allowing alignment of goals and objectives between Step Change and external initiatives.

The implementation phase included a diverse of activities such as bilateral meetings, workshops, and joint presentations at conferences. These events served as platforms for in-depth discussions, knowledge sharing, and connection between initiatives. By involving citizen science practitioners, policymakers, academic institutions and private actors, Step Change aimed to create a rich and diverse ecosystem that would facilitate comprehensive learning and exchange.

Task 7.4 facilitated mutual learning and exchange, resulting in a significant impact through strategic collaboration, planning, and networking. The communication enabled a more precise understanding of the drivers and barriers associated with implementing citizen science projects. These lessons contribute to the sustained impact and success of the Step Change project, aligning with its broader objective of exploring and maximising the potential of citizen science.



Figure 40: Implementation of the activities



*Implementation of the activities:*

Building upon insights from WP1 and identifying noteworthy citizen science projects and SWAFS, a comprehensive mapping was executed. This involved the selection of five initiatives and identification of relevant events and conferences. The regular meetings organised by ECSA served as platforms for sharing progress with different coordinators, fostering collaboration, and building upon collective knowledge. SFC collected specific requirements, strengths, and weakness of CSIs through google forms which ensured a tailored approach. Individual meetings were taken place by SFC with each CSIs with the aim to plan activities for mutual exchange (Annex 3).

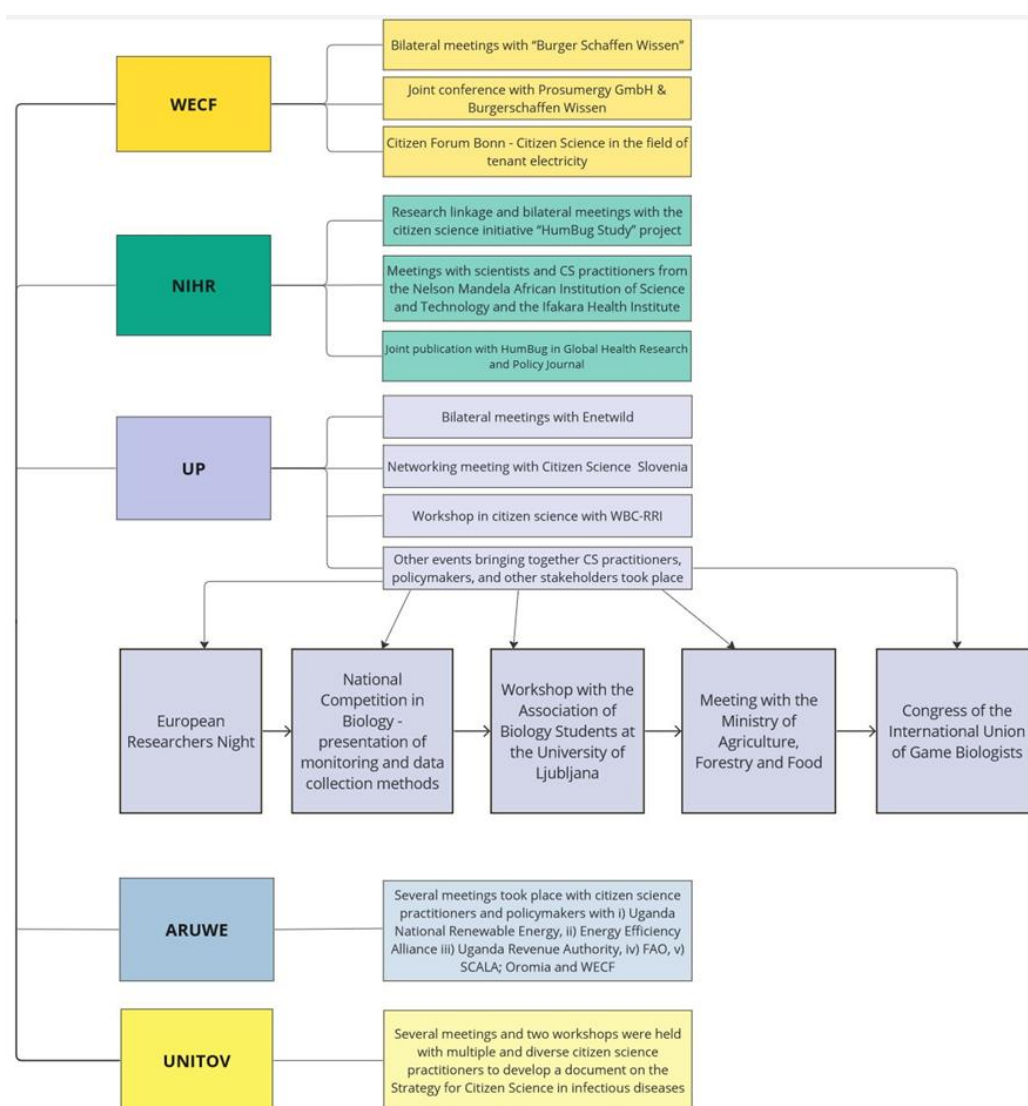


Figure 41: Specific activities with each CSI



### *Communication activities*

The dissemination strategy involved sharing a video that delves into the reciprocal exchanges carried out by the CSIs and demonstrate the mutual benefits of this task.

### **Impact - Lessons Learnt:**

- Strategic collaboration enhances impact. Emphasizing strategic collaboration amplifies the overall impact and relevance of CSIs.
- Successful cases promote best practices. Examining successful cases serves as a catalyst for promoting best practices, contributing to improved outcomes in citizen science projects.
- Identification of lighthouses cases for guidance: Identifying lighthouse cases provides essential guidance for the successful execution of projects, offering valuable insights into effective strategies.
- Involvement of stakeholders for insights: policymakers, universities, and private institutions, among other relevant stakeholders, play pivotal roles by providing valuable insights crucial for the successful execution of citizen science initiatives.





## Chapter 4 – Topics and findings from the MLEs

Engaging in learning, sharing knowledge, and drawing inspiration were the objectives of the Mutual Learning Events. These activities aimed to cultivate a deeper comprehension of citizen science as a means for socializing scientific research and innovation. Step Change implemented five Citizen Science Initiatives (CSIs) in the fields of health, energy, and environment. The CSIs tackled the issues of wildlife conservation in Slovenia, non-alcoholic fatty liver disease in the UK, energy communities in Germany, infectious disease outbreak preparedness in Italy, and off-grid renewable energy in agriculture in Uganda.

The focus of the Mutual Learning Events extends beyond Health, Energy, and Environment to encompass trans-epistemic considerations, as well as societal and institutional foundations inherent to this practice. The focus of the MLEs was on tailoring the content to meet the specific needs of CSIs, aiming that the workshops provide them with the necessary knowledge, practical information, and tools to further enrich their projects. ZSI developed a “reflection template” prior to each MLE to pinpoint the needs of CSIs, where each CSI outlined their specific challenges and proposed solutions to address them. The “reflection template” served as a reflection for participants to think and reflect on their needs, but also for ZSI to analyse the data with the aim of selecting the best training methods for the successful implementation of the citizen science projects as part of Step Change.

Upon identifying the requirements of the CSIs, ZSI crafted the MLEs that revolved around topics deemed essential by the CSIs. These four workshops build on each other and covered a learning and development process for the trainers. During all four MLEs, external experts were brought in to enhance the discourse on citizen science projects. These experts offered broader insights through practical examples, allowing CSIs to engage in discussions, pose questions, and explore unresolved issues in the plenary setting.

After each MLE, an output paper was prepared on the respected topic, where the outcomes were summarized by identifying key challenges, tested solutions and lessons learnt from the CSI experiences. Considering that each MLE addressed a specific topic, in the following, challenges and tested solutions tackled during each MLE will be discussed along with the key lessons learned derived from navigating through these challenges in implementing CSIs.



## ***Mutual Learning Event 1***

The first MLE took place on March 15, 2022, focused on the topic “**recruitment of citizen scientists and other relevant stakeholders**”, a total of 21 participants attended this workshop. For a wider input on this topic, external experts Giovanni Maccani representing WeCount<sup>1</sup> project, Rosa Arias representing D-NOSES<sup>2</sup> and NEWSERA<sup>3</sup> projects and Alex Amo representing COS4CLOUD<sup>4</sup> project, were invited to this Mutual Learning Event. This MLE aimed at setting the scene on the fundamental aspects of citizen science initiatives illuminating the key considerations CSIs have to take into account before recruiting citizen scientists and outlining strategies for effective stakeholder engagement in this collaborative process. The challenges encountered by CSIs, the solutions devised as well as the key lessons learnt derived from overcoming these obstacles are outlined in the following.

**Using the terminology of “citizen science”** - When conducting projects with citizen scientists, an important challenge faced by our CSIs was to define what 'Citizen Science' is. Citizen science has emerged as an inclusive approach to scientific research. The terminology employed in this scenario caused confusion with other public engagement initiatives, therefore, clearly establishing the nature of citizen science in each project was vital to facilitate progress in subsequent phases. Before proceeding with other steps of the CSIs, there was a need to understand and define the contribution of citizen scientists to the project and determine how it could be effectively incorporated into existing research methodologies. This initial understanding was seen as crucial for establishing a foundation that ensures a robust and synergistic integration of citizen science, fostering more impactful and collaborative scientific work (Dall et al., 2022, p. 2).

**Setting recruitment targets** - To establish and set recruitment targets it was deemed important to identify the target audience that is suitable for the particular research setting. The existing literature lacks sufficient examples of the citizen science approach being employed, a deficiency that could contribute to the conceptual framing of recruitment targets within distinct settings and scientific disciplines. Consequently, one of our CSIs adopted a notably flexible approach during the planning phase. They considered factors such as the number of researchers engaged

---

1. <https://we-count.net/>  
2. <https://dnoses.eu/>  
3. <https://newsera2020.eu/>  
4. <https://cos4cloud-eosc.eu/>



and the potential for citizen scientists to withdraw from participation during the project implementation. This experience proved that one cannot expect to find general and specific guidelines in this regard, but rather expect that potential citizen scientists are oftentimes motivated based on the topic and field/discipline of the project. (Dall et al., 2022, p. 3). Seeing that the motivation for participation varies among the citizen scientists, providing different options of engagement seemed to be more feasible, rather than having one approach solely. For instance, certain citizen scientists may demonstrate sustained motivation, engaging regularly over an extended period, while others might participate occasionally, providing contributions only once or twice with specific data points. In this context, the importance is attributed to the quantity and quality of the data acquired and not the number of citizen scientists involved. Notably, during this phase, CSIs recognized the imperative need for well-defined targets that not only streamline the recruitment and management of citizen scientists but also accommodate the possibility of their replacement when necessary.

To entice individuals to become citizen scientists as mentioned above highly depends on their motivation and the nature of the project. Using intermediaries such as: associations and social media tools proved to enhance the outreach. According to our CSIs' experiences intermediators bring in important expertise in relation to public relations, communication, and contact management with the final target group. Additionally, attending local events, promoting, and implementing outreach events and delivering presentations to relevant existing groups helped to disseminate the information to a broader audience. It is vital to note that often the recruited CS can become multipliers. Thus, planning enough resources for staff dedicated to outreach and public relations, is a crucial part of this phase (Dall et al., 2022, p. 6).

**Incentives and expectations** - To recruit citizen scientists, it is important to be clear and straightforward "what is in it for them"? In cases where intermediates are part of the recruitment process, creating win-win relationships with them and CSs can lead to real solutions. CSIs experience has shown that when an intermediary acts only as a mediator by sharing contacts, which is their 'network capital,' their responsibilities towards the contacts and their benefits must be considered by these win-win relationships. In this context it has been shown that engaging in discussions and collaborative creation with stakeholders, while remaining open to adapting strategies, produces positive outcomes (Dall et al., 2022, p. 6).

Based on the CSIs recruitment experience, it was evident that CSs were not attracted in participating in research lasting half a year or more without any compensation. When contributing to science, stakeholders as well as citizens often times have different expectations



from the project. In the literature, there are different experiences in relation to financial incentives discussed and experienced on the ground. This needs to be carefully managed as in some cases financial compensation can reduce the quality of the outcomes when people are solely motivated by it. Whereas, contributing without remuneration, there might be fewer dropouts as people participate because of the project goals and their personal interest. In this regard, one of our CSIs organized “sensitization meetings” with individuals, groups, and leaders of certain target communities to clarify questions and manage expectations. In the testing of tangible incentives, such as covering expenses or providing tools, one particular instance revealed that if there are not just benefits but potential future costs for participants (e.g., sustaining the use of a device), the incentives lack attractiveness in providing a personal benefit. Consequently, an alternative approach was identified by one of our CSIs, which was to implement direct financial incentives (e.g., discounts or expense coverage), (Dall et al., 2022, p. 12). Additionally, alternative benefits, such as being acknowledged in publications, were highlighted as appealing options for citizen scientists. Lessons learnt from this experience show that setting the right incentives and not taking the citizen scientists for granted, but rather meeting their personal benefit proves to be a successful recruitment of citizen scientists. (Dall et al., 2022).

**Communication with different target groups** - The CSIs experiences clearly showed that outreach is a demanding task that requires time and knowledge on how to proficiently interact with different groups as well as stakeholders. The CSIs used different approaches and identified that the face-to-face approach typically is the most successful. Being aware and taking into consideration the heterogeneity of the citizen scientists, clearly stating the roles and levels of engagement seemed helpful for the potential CSs. A crucial observation in communication was the significance of not only providing examples with solutions but also illustrating how their activities can contribute added value for everyone involved in the project (Dall et al., 2022, p. 10)

**Information material to potential citizen scientists** - Effectively conveying project information to citizen scientists necessitates the use of plain language and visually appealing formats. This is vital for ensuring a clear understanding of their roles and contributions, as comprehensive factsheets have proven to be not attractive. The experience of our CSIs highlighted the significance of linguistic barriers and addressing this challenge by incorporating additional language expertise proved beneficial. Furthermore, one of our CSI strategically evaluated the



mix of languages based on specific outreach goals, such as combining local languages with English or commonly used immigrant languages in the relevant territory (Dall et al., 2022, p. 11). A crucial takeaway from this phase was the necessity to be prepared to simplify complex issues when recruiting citizen scientists. The focus needs to be on sparking the “desire to take part,” therefore the focus needs to be on the direct benefits and the win-win situation rather than only procedural information.

## ***Mutual Learning Event 2***

The second MLE took place on October 18, 2022, focused on the topic “**ethical issues in citizen science**”. A total of 17 participants attended this workshop. External experts Sonja Bjelobaba representing BRIDGE<sup>5</sup> project, Dorothea Sturn, and Stefanie Schürz representing ProEthics<sup>6</sup>, took part in the discussion and external input.

**Identifying relevant ethical issues** - Ethical issues for CSIs were very important and challenging at the same time. Screening all the potential issues at the start of the project and identifying which aspects of the research may be sensitive appeared to be challenging. Related to this was also the question of who can decide about it, as different people do have different opinions. The challenge included also identifying the ‘non-issues’ (Marschalek et al., 2022, p. 2). In the Step Change project, where five CSIs pursue distinct objectives and specific topics, tailored solutions are imperative due to the specificity of the issues at hand. The nature of ethical concerns is contingent on the citizen science approach, whether it involves “extreme CS” or a more conventional research-led project. To determine ethical issues in citizen science projects it is important to understand that there are no universal ethical issues or a 'one size fits all', therefore depending on the scope of CS involvement and the project nature, the ethical issues should be established. CSIs found it beneficial to engage with experts to get profound advice relevant to their topic, keeping in mind that CSI teams are not experts on everything. From our experience it is recommended that previous citizen science projects and experienced individuals be included in the process (Marschalek et al., 2022, p. 2).

**Ethical challenges** – Addressing ethical issues in projects is time-consuming, requiring ample time for communication, documentation, and obtaining informed consent. Interactions with ethical officers or boards often involve multiple exchanges. The ethical approval process,

---

5. <https://www.academicintegrity.eu>

6. <https://pro-ethics.eu/>



characterized by bureaucracy, may take some time. CSIs worked closely with the relevant stakeholders through consultative meetings to ensure that all the documentation, information and protocols were clear and submitted as requested. After submission, they made all the clarifications required and clearance was finally provided. In cases where ethics approval was requested from multiple organizations, the CSI complied with the requirements of ethics approval from all relevant parties. This process has shown that it takes time, and one should anticipate the possibility of making necessary changes if the ethical committees identify any aspects within the project that are deemed ethically questionable. For instance, in one of CSIs, where access by citizen scientists to patients was not allowed, the plan was adapted, and only clinical researchers were allowed to have direct access to research subjects. Based on the experience of CSIs, it is evident that addressing ethical issues is a time-consuming and thorough process. Therefore, it is important to incorporate flexibility into timelines and pro-actively exchange with ethical bodies from the early stage of the project to be able to make the changes on time without interfering with the process of the project (Marschalek et al., 2022, p. 4).

**Sensitivity of the target group** - When it comes to citizen scientists, it is important to keep in mind that the target group in itself is sensitive. Being aware of the power gaps and providing different methods of CS engagement is very crucial, considering that the CS are different in their abilities, capacities, knowledge, and backgrounds.

One of the CSIs experienced that their CS felt inadequate or unskilled for a particular activity. In response to a CSI feeling inadequate for a task, proactive steps by the CSI team were taken to create a more supportive environment. For starters they began the meetings with a casual ten-minute coffee session to facilitate friendly interactions among participants. They also employed diverse discussion and engagement techniques, such as refraining from directly asking specific individuals for ideas and instead allowing participants to propose thoughts voluntarily, which proved to be beneficial. Techniques also included creating an environment where participants could speak freely when they felt ready, providing methods for anonymous feedback (utilizing tools like post-it notes). Researchers were also encouraged to maintain a positive listening attitude and refrain from overly critical feedback. This holistic approach not only tackled this immediate concern but also played a role in cultivating a collaborative, transparent, and supportive atmosphere within the team, ultimately enhancing the project's effectiveness (Marschalek et al., 2022, p. 5).



**Research integrity and data management** – Data management is considered as one of the most common critics of citizen science, CSIs took into consideration the data protection laws on data collection and data management in general. An important issue in the discussion about the involvement of citizens in research activities is the quality of the data collected. The question is whether CSs are appropriately trained and literate for the data collection, and is their work reliable? As in all research projects, the CSIs also needed to be assured that the tools applied really measure what they are supposed to measure. One CSI found that even after the researchers explained the different categories, their participating CS struggled to grasp the exact meaning of certain classifications or terminologies. As a result, researchers discovered that the work was occasionally unreliable. To address it, they decided to edit the explanation provided to the CSI to make it clearer and to offer more support to CSs during the process of classification. In any case, researchers kept track of which phases of work felt more reliable than others in such a way as to best value the citizens' points of view. This choice of actions resulted in a more reliable process of classification that still cherished the unique insight of citizens. One way to overcome data collection constraints is to delegate data collection tasks to others who have permission to carry them out. Lessons learnt from this phase were that investing in quality assurance, validation, verification and other checks of data is important, as well as having detailed documentation of data collection and analysis from the beginning (Marschalek et al., 2022, pp. 7–8).

### ***Mutual Learning Event 3***

The third MLE took place on February 21, 2023, focused on the topic “**data collection**”, a total of 22 participants attended this workshop. For an extensive input on the topic external experts were present, Xavier Basagaña from the Barcelona Institute for Global Health representing CityS-Healthproject<sup>7</sup> and Suvodeep Mazumdar from the Sheffield University representing the ECSA working group 'Projects, Data, Tools and Technology'<sup>8</sup>.

**Data collection** - CSIs experienced some challenges when it came to data collection, including mobilizing financial and logistical resources for deploying tools, finding appropriation locations for data collection, and changing planned data collection operations and strategies. For instance, one of our CSIs faced challenges in determine which kind of data collection tools to install. This

---

7. <https://www.citieshealth.eu>

8. <https://www.ecsa.ngo/working-groups/projects-data-tools-and-technology/>



decision was factored with the budget plan as well as the tool system itself whether it is suitable for the objectives of the project. From this experience, we understood that sufficient buffer time needs to be planned to test data analysis tools (Siller et al., 2023, p. 2).

**Methodological challenges and related skills gaps** – CSIs faced different challenges when it comes to determining which scientific methods to use, how to support citizen scientists in data collection, communication methods and general methodological skills.

Skills gaps were addressed in the CSIs through consulting experienced peers, external experts, and citizen scientists. Literature reviews were conducted to create a common taxonomy, and training measures were implemented. To align qualitative and quantitative data collection, the CSIs considered time requirements and utilized diverse methods, including sensor data and participant questionnaires (Siller et al., 2023, p. 3). It became evident through CSIs experiences that using physical devices for quasi-automatic data collection was highly effective in engaging citizen scientists, as they expressed a strong interest in using such methods for data collection. From this experience we have learnt that training is required to instruct and support the CS teams, for example, on how to correctly use data collection devices. Having in place a helpdesk to provide quick responses to citizen scientists in cases of doubt, such as readily available support through online platforms deemed beneficial. Moreover, adapting data collection tools and options to match the preferences of citizen scientists, while attentively considering their input, helped sustain their motivation and involvement (Siller et al., 2023, p. 4).

**Effective use of technological tools and quality control** – Data collection oftentimes requires the use of different devices or software that citizen scientists might not be familiar with. Recognizing the characteristics of the target audience, including factors like age, educational background, and language, was important. Offering software with various language settings or providing instructions on the usage of the devices ensures a more inclusive approach (Siller et al., 2023, p. 5). Ensuring that citizen scientists are well-versed in the proper methods of data collection enhances the overall quality of the collected data. Conducting quizzes designed to assess the knowledge and skills of CSs before they began data collection, proved to be helpful by our CSIs to identify difficulties of citizen scientists at this stage. As a result, debriefing sessions were customized accordingly. These sessions have demonstrated their usefulness in enhancing the efficiency of data collection tools and providing additional learning opportunities regarding the topic of the project in general (Siller et al., 2023, p. 6).





**Motivation of citizen scientists** - Citizen scientists play a significant role in data collection, thus, acknowledging their social position is very crucial. One CSI experienced the unavailability of a specific target group to participate in data collection, for instance, patriarchal norms in certain communities may make it more difficult for women to participate, or in some cases socially desirable answers may be provided instead of observations which can hinder the quality of the data (Siller et al., 2023, p. 7). To combat these challenges CSIs have deployed dedicated staff to provide support to citizen scientists using different communication channels to answer their queries. They also organized joint meetings to gather support from the community leaders, encourage citizen scientists and to overcome societal issues (Siller et al., 2023, p. 8). In addition to potential challenges posed by social structures that may impede individual involvement or the influence of social norms on participants' work within the project, the motivation of citizen scientists is predominantly driven by individual factors. Hence, giving them visibility, ownership and recognition were crucial aspects of motivating CSs to be engaged throughout the entire process. Within Step Change, citizen scientists were encouraged to become co-authors, and a monthly initiative was introduced to highlight a “citizen scientist of the month,” aiming to provide visibility and acknowledgement for their contributions and efforts. This initiative is documented and can be accessed through the news section on the project's website.<sup>9</sup> A total of 13 Citizen Scientists of the month have been promoted from October 4, 2022 - October 17, 2023.

### ***Mutual Learning Event 4***

The fourth and final MLE took place on December 19, 2023, focused on the topic “**challenges and experiences of multi/inter/trans - disciplinary collaborations in CSIs**”, a total of 19 participants attended this workshop. To exchange experiences and knowledge external experts Barbara Smetschka from the Institute of Social Ecology<sup>10</sup> in Vienna and Djoera Eerland from Buurkracht<sup>11</sup> in the Netherlands were invited to this Mutual Learning Event.

**Navigating diversity** - implementing citizen science initiatives has presented the CSIs with an enriching yet challenging experience, particularly in light of the varied backgrounds of the involved citizen scientists. The Step Change CSIs have faced complexity from the use of various terminologies, reflecting the diverse educational backgrounds of participants. This diversity

---

9. <https://stepchangeproject.eu/media-centre/news/>

10. <https://boku.ac.at/en/wiso/sec/>

11. <https://www.buurkracht.nl/>



extends to differing levels of expertise among citizen scientists, resulting in intricate group dynamics. One noteworthy aspect of these experiences involved striking a delicate balance between tacit and explicit knowledge within the group (Gurgurovci et al., 2024, p. 4).

To address this challenge one of the CSIs revealed that they encouraged open communication and created an inclusive environment where CSs would feel comfortable sharing their insights. Addressing these knowledge differences requires a thoughtful approach to ensure that all perspectives are considered, and contributions from individuals with both tacit and explicit knowledge are valued.

This experience demonstrates that establishing safe spaces for questions and diverse perspectives further encourages an environment of open dialogue and collaborative exchange. Actively incorporating community-specific insights enriches the understanding and context of research endeavours, resulting in more holistic and applicable outcomes. CSIs' experience outlines the significance of balancing the integration of local knowledge with scientific rigor. This ensures that research outcomes maintain credibility and robustness, benefiting from the synergy of scientific methodologies and community insights. Through the combination of targeted training, interactive tools, safe spaces for expression, and the integration of diverse knowledge sources, this approach proved that it not only empowers participants but also enhances the quality and relevance of scientific research outcomes (Gurgurovci et al., 2024, p. 5)

**Conflicting methodological approaches** – Different disciplines often contribute unique viewpoints and methodologies, resulting in disparities in the sources of data collection and challenges in the integration of data. These differences also encompass the fundamental aspects of research, such as the comprehension of research design. Additionally, the complexity is heightened by the inquiry into whether the knowledge of citizen scientists qualifies as a legitimate source of information.

To address these challenges our CSIs implemented practical solutions including the organisation of workshops and presentations to facilitate open dialogue among actors from different disciplines to promote mutual understanding (Gurgurovci et al., 2024, p. 6). Additionally, incorporating interactive activities, such as creating quizzes, served well to enhance mutual understanding of the methodological approach and improve data quality. In this challenge CSIs identified that planning for data management is essential for the effective organization and utilization of datasets. Moreover, a crucial remark was made by the external expert Djoera Eerland that procedural justice can serve as a guiding principle in citizen science initiatives.



Based on experience this approach contributes to reinforcing trust among participants, ensuring that the procedural aspects of citizen science are perceived as equitable and just. As citizen science evolves, managing methodological differences is an ongoing learning process, it is important to emphasize flexibility, open communication, and a shared commitment to knowledge advancement. Lessons learnt from this challenge include blending diverse disciplines, recognizing varied research perspectives, and valuing citizen scientist knowledge to enrich collaborative research (Gurgurovci et al., 2024, p. 7).

**Conflicting values and beliefs** – In multifaceted environments such as those found in our CSIs, stakeholders contribute distinct experiences, different cultural viewpoints, and sometimes opposing values. This was a challenging experience for one of our CSIs where a prominent politician put his opinion as “the only true reality” with no space for other opinions. The assertive atmosphere created during the project hindered citizen scientists from expressing diverse opinions, leading to a challenge for moderators in maintaining a delicate balance (Gurgurovci et al., 2024, p. 8). To address this, moderators had to actively acknowledge the validity of citizen scientists' points, emphasizing the existence of multiple opinions. This required skilful moderation to redirect conversations and ensure all voices were heard. Beyond facilitation, moderators became a crucial support system for civil society representatives navigating discussions dominated by prominent figures. This challenge highlighted key lessons: promoting mutual respect, establishing trust, emphasizing shared definitions, and employing skilled moderation to create a safe space for dialogue.

**Communication issues** - Communication plays a crucial role in the citizen science process, but it is not without challenges. The use of technical language and terminology can create barriers, whereas the presence of language diversity adds an extra layer of complexity. Step Change CSIs employed customized communication strategies for diverse stakeholder groups. They also integrated simplified language and visual aids to improve accessibility and comprehension. Moreover, one CSI has generated materials in local languages, recognizing linguistic diversity and strengthening inclusivity in their communication initiatives. Furthermore, the engagement of intermediaries, including skilled moderators, translators, or proficient community stakeholders, has proven to be effective in bridging communication gaps, facilitating understanding, and promoting smoother interactions (Gurgurovci et al., 2024, p. 11).



**Stakeholder inclusion** – plays an important role in this process, yet it presents challenges due to the diverse perspectives, experiences, and interests each stakeholder brings. In the context of citizen science initiatives, the initial implementation of stakeholder mapping emerged as a pivotal strategy. This approach facilitated targeted and personalized invitations, strategically engaging specific stakeholders from the outset. However, the complexity lies not only in including stakeholders but also in maintaining long-term relationships. Building and sustaining connections not only increased community acceptance but also contributed significantly to the overall sustainability of projects. Drawing from CSI experiences, becomes evident that tailoring workshops and presentations to address the unique needs and interests of identified stakeholders yields positive impacts, fostering continuous engagement (Gurgurovci et al., 2024, pp. 13–14).

**Technical and logistical challenges** – have been manifested in managing logistics related to time, location and other practical considerations impacting the inter-, multi- and trans- disciplinary cooperation. On top of that communication has been a persistent challenge contributing to delay and short-notice cancellations. Recognizing the unpredictable nature of logistical challenges, CSIs advocate for proactive planning with a “Plan B” in mind (Gurgurovci et al., 2024, p. 15). This involves having substitutes readily available to mitigate disruptions arising from unforeseen circumstances or sudden cancellations. Additionally, dedicating a platform and assigning a communication focal person has proven instrumental, especially when engaging with citizen scientists. Clear communication channels, as established by CSIs, enhance coordination, facilitate information exchange, and fortify interdisciplinary collaborations overall.



## Key lessons learnt on Training and Mutual exchange activities

Citizen Science has emerged as a vital contributor to both scientific advancement and societal engagement, particularly in fields where human and non-human interactions are complex and intertwined. Within the Step Change project, CSIs have explored and exploited the potential of citizen science in terms of knowledge and innovation advancement, science and society alignment through the development and evaluation of five hands-on citizen science initiatives in three different areas (Energy, Health, and Environment).

**Reflection on training and assistance activities** – In general, it emerged as crucial to accompany CSIs throughout their journey, providing them with support, input, and opportunities for exchange. It was beneficial that, based on initial experiences and gathered feedback, the training sessions could be adapted and more finely tailored to the needs of the CSIs. While the brief online training sessions proved effective, complementary measures such as mentoring and targeted actions were found to be valuable. The four Mutual Learning Events were organized to address the specific needs of CSIs at different stages of implementing their initiatives. Facilitating reflection sharing among CSIs and discussions with external experts proved beneficial. This approach provided CSIs with both theoretical knowledge and practical support for their activities. Furthermore, the expressed need for more informal exchange was addressed through the format of open fora, which served as spaces for learning and collaboration among CSIs and the horizontal partners. Specific issues and challenges could be thoroughly discussed within these informal meetings. Given that participation in these activities was voluntary and additional, the consistent presence of all CSIs throughout the project implementation phase underscored their importance and relevance. Any offer of support and exchange, regardless of whether CSIs were working on different topics, focusing on various aspects, or targeting different groups, was found to be effective.

**Facilitating CSIs** - To support the successful implementation of CSIs, a multifaceted approach has been undertaken. Initially, a series of comprehensive training sessions were conducted, aimed at familiarizing CSI teams with the principles and methodologies of citizen science, equipping them with the necessary tools to embark on their projects confidently. Complementing this formal training structure, an Open Fora was established as an informal avenue for CSI teams to exchange experiences, challenges, and insights, fostering a culture of collaborative learning and mutual support. Furthermore, networking activities were organized



to facilitate communication and collaboration not only within the project teams but also with external projects, enriching the collective knowledge base and promoting inclusivity. Additionally, mutual learning activities served as invaluable platforms for knowledge exchange among CSIs, citizen scientists, and other relevant stakeholders, facilitating a deeper understanding of the societal and institutional dimensions of citizen science.

**Lessons learned and recommendations** - This report contains insights derived from the execution of Citizen Science Initiatives (CSIs), detailing the experiences, successes, and failures encountered throughout the implementation process. Central to this report is the recognition of the transformative potential of open science practices, emphasizing the importance of sharing not only results but also raw data to enhance replicability and trust in scientific processes. Collaborative exchanges with similar projects are emphasized as a valuable avenue for acquiring fresh perspectives and insights, especially in light of the limited contributions to the scientific discourse. Given the scarcity of such contributions, it becomes particularly crucial to provide examples of both success and failure, enabling others to glean valuable lessons for their own endeavours which can be summarized as follows:

**Recruitment of citizen scientists and other relevant stakeholders** - The challenges faced by Citizen Science Initiatives (CSIs) underscored the importance of defining citizen science clearly to differentiate it from other public engagement initiatives, laying a foundation for effective integration into research methodologies. Setting recruitment targets necessitates diverse engagement options and careful consideration of the sustained involvement of citizen scientists considering that motivation for participating varies.

Intermediaries played a crucial role in enhancing outreach, necessitating dedicated resources for public relations and communication. Clear communication with diverse target groups, utilizing face-to-face interactions, and providing tangible incentives while managing the expectations of citizen scientists were key to successful recruitment. Effectively conveying project information proved to be plain language and visually appealing formats, addressing linguistic barriers, and focusing on direct benefits to spark interest. These lessons emphasize the importance of understanding motivations, effective communication, and strategic recruitment approaches of citizen scientists.

**Ethical issues in citizen science** - Addressing ethical issues in citizen science projects requires thorough consideration and collaboration with experts and experienced individuals from



previous projects to identify project-specific concerns. CSI experience shows that obtaining ethical approval frequently requires time, therefore proactive engagement with ethical bodies and flexibility in project timelines to accommodate necessary changes is imperative in this process. Sensitivity towards the target group, acknowledging power gaps, and implementing supportive measures foster a collaborative and inclusive environment. Ensuring research integrity and data management involves investing in quality assurance, providing clear explanations and support to citizen scientists, and documenting data collection and analysis comprehensively from the outset. These lessons emphasize the importance of proactive ethical considerations, inclusivity, and robust data management practices in citizen science endeavours.

**Data collection** - Data collection in citizen science projects presents various challenges, including resource mobilization, tool selection, and methodological considerations. Buffer time for testing tools is crucial, training and support are necessary to ensure citizen scientists effectively use data collection devices. Utilizing physical devices for quasi-automatic data collection enhances engagement, while adapting tools to match preferences sustains the motivation of citizen scientists. The CSI experiences underline that the effective use of technological tools requires consideration of the target audience's characteristics as well as offering instructions in multiple languages to ensure accessibility and comprehension across citizen scientists with diverse backgrounds and motivations. In addition, assessing citizen scientists' knowledge before data collection through quizzes and providing debriefing sessions proved to enhance data quality and learning opportunities. Given that Citizen scientists are heterogeneous, CSI teams must be prepared to address social barriers to participation, such as patriarchal norms. Therefore, planning dedicated ways of support, as well as engaging with community leaders is crucial.

Motivating citizen scientists involves providing visibility, ownership, and recognition, such as through co-authorship and monthly acknowledgements. These experiences underscore the importance of training, support, and inclusive approaches in citizen science.

### **Challenges and experiences of multi-/inter-/trans-disciplinary collaborations in CSIs**

Implementing citizen science initiatives has been both enriching and challenging for CSIs. Addressing knowledge differences requires open communication, creating safe spaces for expression, and integrating community-specific insights to enrich research outcomes. CSIs identified that conflicting methodological approaches necessitate workshops and presentations to promote mutual understanding among disciplines. Moreover, conflicting values and beliefs



between disciplines, stakeholders and citizen scientists require skilled moderation to ensure all voices are heard and respected, emphasizing mutual respect and shared definitions. Recognizing communication as a pivotal aspect of this journey, CSIs addressed related challenges through tailored strategies, acknowledgement of language diversity, and intermediary engagement. Likewise, stakeholder inclusion was facilitated through targeted invitations and tailored workshops, fostering continuous engagement and community acceptance. Furthermore, technical, and logistical challenges must be managed proactively with contingency plans and clear communication channels to enhance coordination and collaboration. These experiences underscore the importance of flexibility, open communication, and skilful moderation in navigating diversity and ensuring the success of citizen science initiatives.

**Future directions** - In conclusion, the Step Change project stands as an example of the transformative power of citizen science in advancing both scientific knowledge and societal engagement. By sharing experiences, successes, and failures, this report aims to contribute meaningfully to the broader scientific discourse, serving as a valuable resource for future citizen science initiatives. Through continued collaboration and innovation, the Step Change project endeavours to propel citizen science forward as a collaborative tool for societal and scientific advancement, standing up for principles of transparency, inclusivity, and innovation.





## References

- Dam, R., Mponzi, W., Msaky, D., Mwandyala, T., Kaindoa, E. W., Sinka, M. E., Kiskin, I., Herreros-Moya, E., Messina, J., Shah, S. G. S., Roberts, S., & Willis, K. J. (2023). What incentives encourage local communities to collect and upload mosquito sound data by using smartphones? A mixed methods study in Tanzania. *Global Health Research and Policy*, 8(1), 18. <https://doi.org/10.1186/s41256-023-00298-y>.
- Dall, E., Marschalek, ilse, & Siller, C. (2022). *“Recruitment of Citizen Science and other relevant stakeholders”*: Output Paper of the Step Change Mutual Learning Exercise. <https://doi.org/10.5281/zenodo.7385446>
- Gurgurovci, S., Marschalek, ilse, & Dall, E. (2024). *Challenges and Experiences of Multi-/ Inter- and Trans-disciplinary Collaborations in Citizen Science Initiatives: Output Paper of the Step Change Mutual Learning Exercise*. <https://doi.org/10.5281/ZENODO.10678834>
- Iacolina, L., Cerri, J., & Bužan, E. (2021). *D1.2 Identification of training needs for each CSI*.
- Land-Zandstra, A., Agnello, G., & Gültekin, Y. S. (2021). Participants in Citizen Science. In K. Vohland, A. Land-Zandstra, L. Ceccaroni, R. Lemmens, J. Perelló, M. Ponti, R. Samson, & K. Wagenknecht (Eds.), *The Science of Citizen Science* (pp. 243–259). Springer International Publishing. [https://doi.org/10.1007/978-3-030-58278-4\\_13](https://doi.org/10.1007/978-3-030-58278-4_13)
- Marschalek, ilse, Dall, E., & Siller, C. (2022). *“Ethical issues in Citizen Science”*: Output Paper of the Step Change Mutual Learning Exercise. Zenodo. <https://doi.org/10.5281/zenodo.7385510>
- Siller, C., Marschalek, ilse, & Dall, E. (2023). *“Data Collection” in Citizen Science Initiatives: Output Paper of the Step Change Mutual Learning Exercise*. <https://doi.org/10.5281/ZENODO.7851091>



# Annex 1 – Questionnaire on Training Activities



LO1



## Feedback questionnaire 1st CSI training

Thank you for participating in the first CSI Training on November 16, 2021.

We kindly ask you to express your experience and opinions regarding the training by answering the following questions.

Thank you!

There are 9 questions in this survey.

Next



Please give us your opinion on the following items.  
How would you rate each of the following modules of the first training session?

Opener – reflection exercise: "What is important for Citizen Science?"

	Very much	2	3	4	Not at all	No answer
The exercise/material was clear	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
The exercise/topic is useful/relevant	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>

Input on: "Basic understandings"

	Very much	2	3	4	Not at all	No answer
The input was clear	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
The input is useful/relevant	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>

Exercise: "Exchange on Do's and Don'ts"

	Very much	2	3	4	Not at all	No answer
The exercise/material was clear	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
The exercise/topic is useful/relevant	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>



Input on: "Personas"

	Very much	2	3	4	Not at all	No answer
The input was clear	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
The input is useful/relevant	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>

Exercise on: "Personas"

	Very much	2	3	4	Not at all	No answer
The exercise/material was clear	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
The exercise/topic is useful/relevant	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>

Awareness Raising Exercise: "I am ... BUT I am not ..."

	Very much	2	3	4	Not at all	No answer
The exercise/material was clear	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
The exercise/topic is useful/relevant	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>

Next



25%

### Meeting Organization

How would you rate each of the following?

	Very much	2	3	4	Not at all	No answer
The training was well organized and facilitated	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
The information provided prior to the training was helpful	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
The follow up information and materials are useful	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
	Very much	2	3	4	Not at all	No answer
Sufficient time was allocated to each issue on the agenda	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Enough time was given to questions/open issues	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
The training was interactive and entertaining	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>

50%

### Overall

How would you rate the following?

	Very much	2	3	4	Not at all	No answer
The objectives of the training were clear	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Overall, the meeting was useful for me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
I feel confident for the next steps in my CSI	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>

Next

75%

### Recommendations

My recommendations for the next training are ...

Submit



## Annex 2 - Survey on Step Change Mutual Learning Activities

### Brief feedback on the StepChange Mutual Learning activities (WP7)

After we implemented the routines of regular Open Forum meetings and mutual learning activities in WP7, we would like to ask the StepChange partners to provide us a brief feedback.

There are 5 questions in this survey.

### Brief feedback on the StepChange Mutual Learning activities (WP7)

On a scale from 1 (very unsatisfied) to 5 (very satisfied):

How satisfied are you with the following aspects in relation to the **Mutual Learning (ML) activities** (the process and workshops we organised so far 3 times, 1) on recruiting, 2) on ethical issues, 3) on data collection):

Please choose the appropriate response for each item:

	1	2	3	4	5
the frequency of the ML activities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
the topics chosen so far	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
the reflection template shared with you	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
the ML workshops overall	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
the summaries of lessons learnt we presented during the MLE workshops	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
the invitation of external guests to the ML workshops	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
the length of the ML workshops	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
the Output Papers as a final result of the ML	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please reflect on the Mutual Learning activities in StepChange overall. What works? What doesn't work? What would you change? \*

Please write your answer here:



On a scale from 1 (very unsatisfied) to 5 (very satisfied):

How satisfied are you with the activities in relation to the **Open Forum** events which we organise monthly to offer a space for exchange among the consortium without pre-defining a specific topic?

Please choose the appropriate response for each item:

	1	2	3	4	5
the Open Forum meetings in general	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
the frequency of the meetings	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
the length of the meetings	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
the guiding questions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
the notes on the Miro Board	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
the implementation through zoom	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please reflect briefly on the monthly Open Forum events. What works? What doesn't work? What would you change? \*

Please write your answer here:

A final question:

Where do you see the (potential) impact of the Mutual Learning activities, the Open Forum and WP7 in general? In order to increase the impact: Is there anything else needed to exchange and reflect? \*

Please write your answer here:

Thank you for filling out the survey!

Your ZSI team



## Annex 3 – Survey on Identifying the Needs and Strengths in each CSI project

### Mutual learning exercise connecting initiatives from the CS ecosystem workshop in the ECS Collaboration Group

Dear all,

As agreed during our [first session of the ECS Collaboration Group](#), we are delighted to invite you to participate in the workshop on “**Mutual learning exercise connecting initiatives from the CS ecosystem**”. This online workshop will take place on **April 4, 2023, from 11:00 till 12:30 CET**.

The aim of this workshop is to build on the needs already identified during the [MLE on Citizen Science](#) organized by the European Commission, which involved 11 member states. The previous MLE was focused on facilitating the exchange of information, experiences, and common needs among the CS projects in Europe. With the current MLE connecting initiatives from the CS ecosystem in the ECS Collaboration Group, we want to **take a step further and collaboratively work in an interactive online session** where we will share peer learning experiences and learn from each other through specific breakout rooms.

To design this MLE co-created session, we need to know exactly how many participants will be attending. Therefore, **we kindly ask you to confirm your attendance** (or another person in your organisation) and ensure that you will be available on time for the session. As previously mentioned, this session and its outcomes will be fully co-created by every participant in different breakout rooms.

**If you would like to participate, please complete the short questionnaire provided below to identify the needs and strengths in your CS project** (which will not take more than 3 minutes). There are no right or wrong answers; these questions serve as an indicator to identify common needs and strengths so that we can create a mutual learning exercise where you will be able to learn from your peers. **Due date March 20th**.

Best regards,

Personal name(s) and name of your organization

Short-answer text

Name of project or initiative

Short-answer text



Self- Assessment approach. Please rate your performance\* in the following dimensions related to your CS project on a scale of 1-4, with 1 representing the lowest performance rate and 4 representing the highest performance rate. \*

**\*Self Assessment performance: The overall personal perception of the execution of your CS project against objectives, best practices and skills.**

	1	2	3	4
Citizen's engagem...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Equity, Diversity, In...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Quality Data and O...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Policy (CS impact...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Impact (measuring...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sustainability (lega...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

If you feel that there is a dimension that has not been addressed by the above question, please feel free to add a comment.

Long-answer text

For the categories where you have given yourself a rating of 1 or 2, please provide an explanation as to why you have rated yourself at that level. Specifically, what barriers or challenges are you facing in these areas?

Long-answer text

For the categories where you have given yourself a rating of 3 or 4, please provide an explanation as to why you have rated yourself at that level. Specifically, which aspects and dimensions you can share with others as good practices and lessons learnt?

Long-answer text

What are your expectations in regard to this Mutual Learning Exercise session? Any other comment?

Long-answer text