Citizen Science to promote creativity, scientific literacy, and innovation throughout Europe

Kick-it-off-the-ground

(2. MC Meeting and Working Groups Meeting)

12.+13.12.2016

Minutes

Content

12.12.2016 - MC Meeting 1st part

1. Welcome Session

The session begun with Dr. Katrin Vohland & Dr. Marisa Ponti (Chair and Vice Chair of the Action) who gave a short welcome to all MC members. They stressed that COST Actions are a great instrument as they combine the support of scientific excellence and inclusion at the same time, and also focuses on scientific approaches as an appreciated joint cultural basis in Europe. Targeting citizen science therefore is a perfect topic at it explores deeply how the relationship between science, policy, and different publics interacts with a more accessible and participative scientific system.

Then Dr. Rossella Magli (Cost Action Officer) gave a short welcome and also stressed the aims of COST Actions and the support EU provides to scientific networking. Next, a presentation of the COST Action members took place where a round of individual presentation helped for introducing everyone so to strengthen the networking process. The Working Group leaders briefly presented the the aims of their Working Groups, the work that is planned to take place during the meeting.and their aims in the frame of the entire Action.

2. Successful verification of the presence of two thirds of participating COST-countries

The quorum was reached; 29 out of 32 countries have been present.

see attached list of participants

3. Adoption of Agenda; election of note taker

The note takes who volunteered, Kristine Bohmann and Byron Antoniou, were accepted by the MC. The Chair requested from all speakers to provide their initial statements to a shared Google Document in order to complete the minutes. Furthermore, she requested for minutes from WGs to be added.

(https://docs.google.com/document/d/1Ruse3s47RBTm0F-9uPEbYgrIzQrTjqjngZoD-vASv-c/edit)

4. Approval of minutes and matters arising of last meeting

The minutes of the last meeting were accepted unanimously by the MC.

5. Update from the Action Chair

a) Status of Action (Katrin Vohland)

The update session started with the Action's Chair who informed MC about the Status of the Action. The action is very dynamic, as the topic citizen science raises much interest. As there are so many related concepts around, the idea what is linked to the term citizen science (Fig. 1), and where are overlappings with other concepts will change during the period of the COST Action, and will also being influenced by its participants.

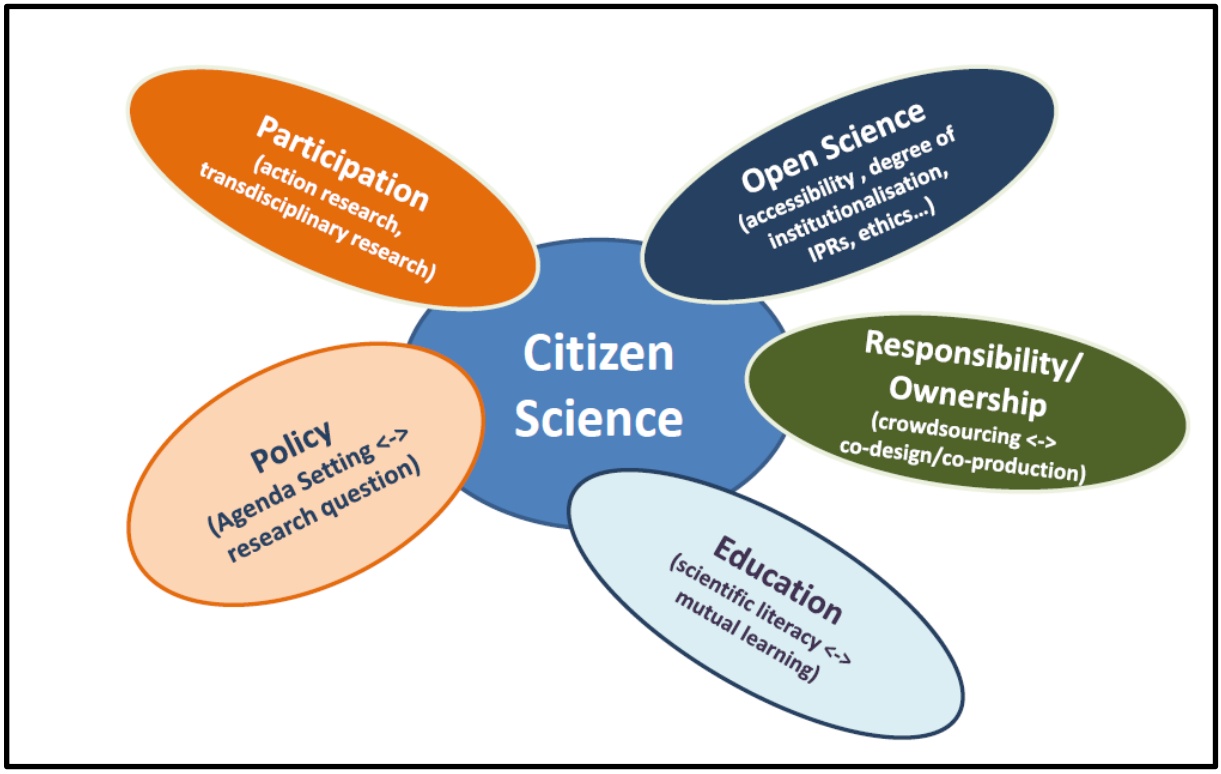


Fig. 1: Citizen Science and linked approaches and discourses. ((C) Vohland)

The Chair requested that the aims of the original proposal are kept in mind throughout the work, as scientific excellence is, next to inclusiveness, the key indicator for evaluation. The targets are linked to specific working groups (Fig 2), however, as there is also overlapping between the working groups, all targets should be kept in mind when planning activities.

Build a research network to lift untapped potential for social innovation and socio-ecological transition

Proposed Working Group	Objectives
WG 1: Scientific Quality	• **Review** of current citizen science landscape to highlight strengths and to **expand** to areas that need development for future research activity • Identify and enhance **good practices** that can be applied to CS projects in different areas.
WG 2: Synergies with Education	• Share experiences and research challenges in using CS in teaching in formal **education** and in community-based learning
WG 3: Society-science-policy-interface	• Provide outcome assessment of citizen science projects for evidence-based **public policy** action .
WG 4: Civil Society	• Draw implications of CS outcomes for the **stakeholders** from all sectors concerned.
WG 5: Data standardization and interoperationability	• Explore ways for integrating **data** and knowledge collated through CS initiatives and suggest mechanisms for ***standardization, interoperability, and quality control***.
WG 6: Overall and Synthesis	• ***bundle capacities across Europe for social innovation and socio-ecological transition*** • Increase **inclusiveness** with regard to countries, age, and gender. • Increase **international collaboration** and **knowledge sharing**.

Fig 2: Key objectives of the Citizen Science COST Action

With regard to the budget, it can be observed that this MC Meeting gets bigger than planned and may cause some financial risks. The situation will relax next year, as then during the whole year only 1 MC Meeting has to be planned. The next period budget as communicated via COST Action Office will be about 160.000 € for the one-year funding period starting in May 1st 2017 (Fig 3)..

Budget

Period	I	II	III	IV	V
Duration	6 month	1 year	1 year	1 year	6 month
Time	1.11.16-30.4.17	1.5.17-30.4.18	1.5.18-30.4.19	1.5.19-30.4.20	1.5.20-20.9.20
Resources	70.500 €	160.000 €	?	?	?
Activities					
	MC Meeting *Dezember 16 Berlin*	MC Meeting tbc	MC Meeting	MC Meeting	MC Meeting
	WG Meetings to establish working groups	Workshops, Summerschools, Conferences, STMS,.... Publications, MOOCs, Guidelines,...			Final Conference

Fig. 3: Budget for the Citizen Science COST Action

In order to allow for better internal communication, a basic webpage was set up, mainly based on a database of its members. There are some filter functions, e.g. for roles (MC Member, equal opportunity commissioner), member of working groups or from specific countries. There is a first map in order to visualise geographical distribution of the members (Fig 4). It would be very helpful if everybody in this action would have an account (http://cs-eu.net/). Next step will be to develop it into a project webpage, giving especially the working groups room and visibility.

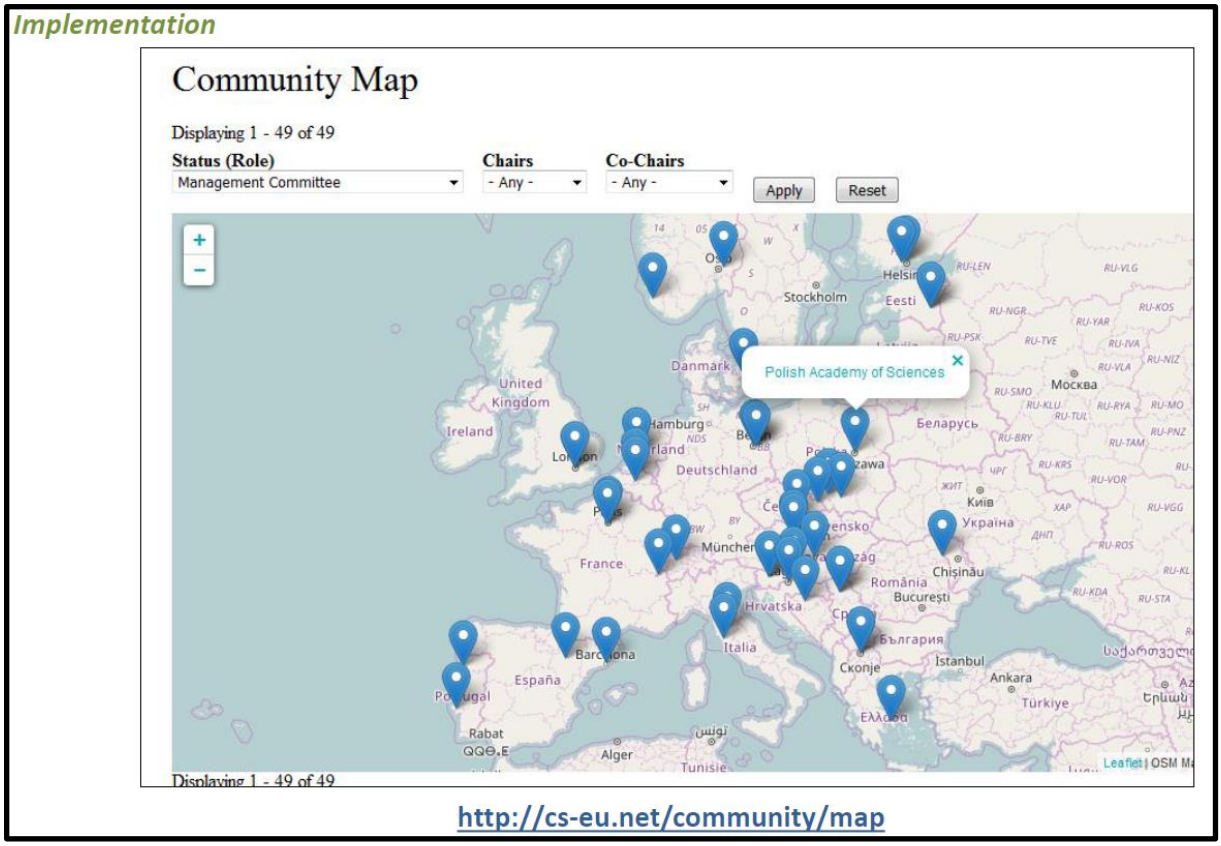


Fig 4: Map of current members. Example: Filter MC Members.

b) STSMs (Maria Attard)

Maria Attard explained the intention of Short Term Scientific Missions (STSMs; details to be found in the Vademecum). The first call is prepared.

Clarifications were requested by the COST official about re-allocation of the budget in case of underspending or the money and the time that can be allocated for each STSM. The rules of the Vadmecum were clarified so everyone is aware of the right process.

The Working group leaders are encouraged to think about relevant STSM's.

[update: the first call is published at www.cs-eu.net, together with the guidelines]

6. Update from Grant Holder: Action budget status (*Magdalena Müller*)

Magdalena Müller introduced to the members of the meeting the budget as it was approved by the MC (Fig. 5). In addition to the events, one STSM (2.500 €) as well as 4.500 € for dissemination activities were calculated. As more participants then estimated are coming, the budget for the MC

meeting may become overdrawn. The chair urges the MC's to only claim actual costs re expenses relating to COST meeting attendance.

Overview

Meeting Title	Meeting Type	Dates	Location	ITC	Total Cost(EUR)
Kick-it-off-the-ground - (2. MC Meeting and Working Groups Meeting)	Management Committee Meeting, Core Group Meeting, Working Group Meeting	12/12/2016 - 13/12/2016	Berlin (Germany)	No	34,500.00
Workshop: Ontology of Citizen Science Projects	Working Group Meeting	06/03/2017 - 07/03/2017	Novi Sad (Serbia)	Yes	10,700.00
Workshop: Develop concept for stakeholder mapping	Working Group Meeting	13/03/2017 - 14/03/2017	Vilnius (Lithuania)	Yes	9,100.00
				Total	54,300.00

Fig. 5: Overall budget plan for the first funding period of the action.

7. Update from the COST Association, with special emphasis on the rules (*Nathalie Warenghien*)

Subjects presented:

- Status of the Action
- Action Work Plan and Budget Plan
- Activities planned
- Payments
- Administrative rules
- Rules regarding claim of costs associated with COST meeting attendance.
- STSMs
- Dissemination - eligible expenses

All the rules can be found in the Vademecum (www.cost.eu/vademecum)

After the presentation, a number of clarifications on the Vademacum were given by the speaker and the Chairs of the Action.

8. Monitoring of the action (*Dr. Rossella Magli)*

Subjects presented:

- Monitoring and final assessment of Actions
- Final Assessment
- Recommendation by the Scientific Committee

Generally, it was recommended to continue to be inclusive with regard to youth, gender, and ITCs.

9. Requests to join the Action (Marisa Ponti)

Received the following requests to join the Action:

International Partner Countries

USA

Jennifer Shirk, Manager of Professional Development for Citizen Science, Cornell Lab of Ornithology's Public Engagement in Science Program.

Henry Sauermann, Georgia Tech, Associate Professor; PhD Coordinator, Strategy & Innovation
Both Shirk and Sauermann were among the initial proposers.

Shirk and Sauermann were are approved to join.

New Zealand

Monika Peters, University of Waikato - Lake Ecosystem Restoration (community environmental groups). She was also among the initial proposers.

Peters was also approved to join.

Australia

Jianhong Cecilia Xia, interested in research to promote transport equity with Prof Maria Attard.

Xia was preapproved to join.

South Africa

Joey Hulbert, PhD student in South Africa at the Forestry and Agricultural Biotechnology Institute. Starting a citizen science project to study plant disease in the fynbos biome of South Africa.

Hulbert was preapproved to join.

Near Neighbour Countries

Albania

Diturije Ismaili, Head of Research and Project Office, EPOKA University
Kalterina Shulla, Ministry of Urban Development, had contacted WG2 leaders to join.

They were both preapproved to join but they have to follow the formal process.
The approval procedure takes some time, as the request needs first to be encoded in e-COST and, once assessed, as complete by the COST Officer, the different approval level will be triggered.

Institutions and/or specific organisations: EU Agencies, European RTD Organisations, International Organisations

Joint-Research Center, European Commission

Sven Schade, scientific officer for JRC's Digital Earth and Reference Data Unit.
Lucy Bastin, responsible for the development of the new web versions of the main DOPA web clients (Explorer, Validator and Analyst) as well as of the modeling web processing services.

They were both preapproved to join but they have to follow the formal process.

13.12.2016 MC Meeting 2ndpart

9. Implementation of COST policies on

a) promotion of gender balance (Carole Paleco)
and Early Career Investigations (Yussuf Assaf)
b) inclusiveness and Excellence (Marisa Ponti & Katrin Vohland)

Carole Paleco and Yussuf Assaf presented on the session Inclusion (grouping gender balance, early career investigation and inclusiveness):

Four people attended the session on inclusiveness. Assaf made a survey among the participants of this two days meeting (12-13/12/2016) on the three main criteria to be taken into account in COST actions and activities (see graphs). The results present a quite balanced participation from female (51%) and men (49%) (Fig. 6). Early career scientists represent 45% of the participants (Fig. 7). The Inclusiveness target countries (ICT) account for 31% of the participating countries (Fig. 8).

The group suggests that gender equal opportunities and early career scientists be encouraged:

- Through information and communication promoting the participation to Working Group activities
- before WG, MC and workshop meetings
- among the STSMs grantees

It is suggested that ICT countries be invited to organise activities or send participants to the Action's activities. It is suggested that each of the working groups assess the performance re gender balance/early career throughout the action as well as ICT integration efforts.

The recommendations will be published online on the website of the Action and as guidelines to the Working Groups.

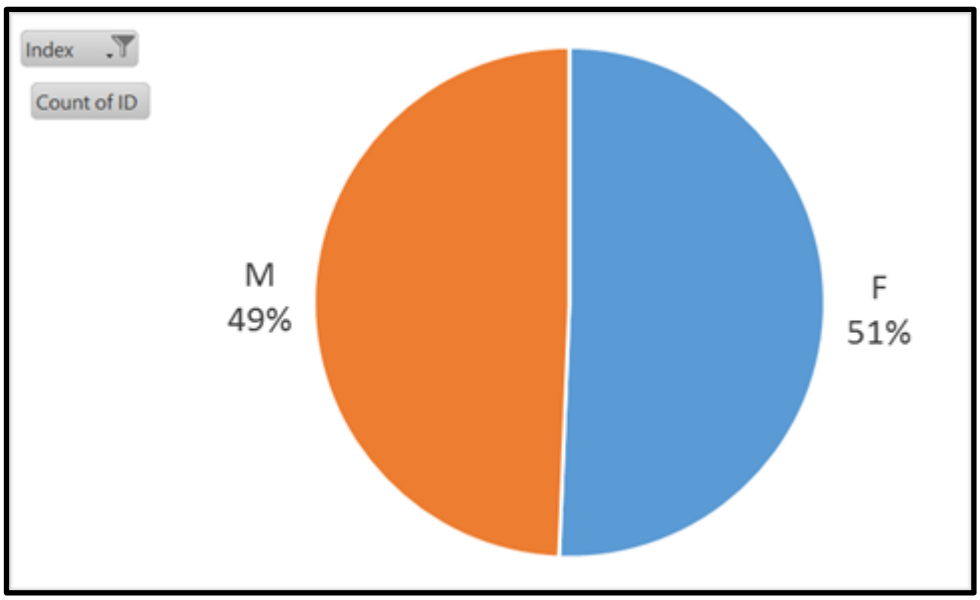


Figure 6: Gender balance during MC Meeting 2016 Berlin.

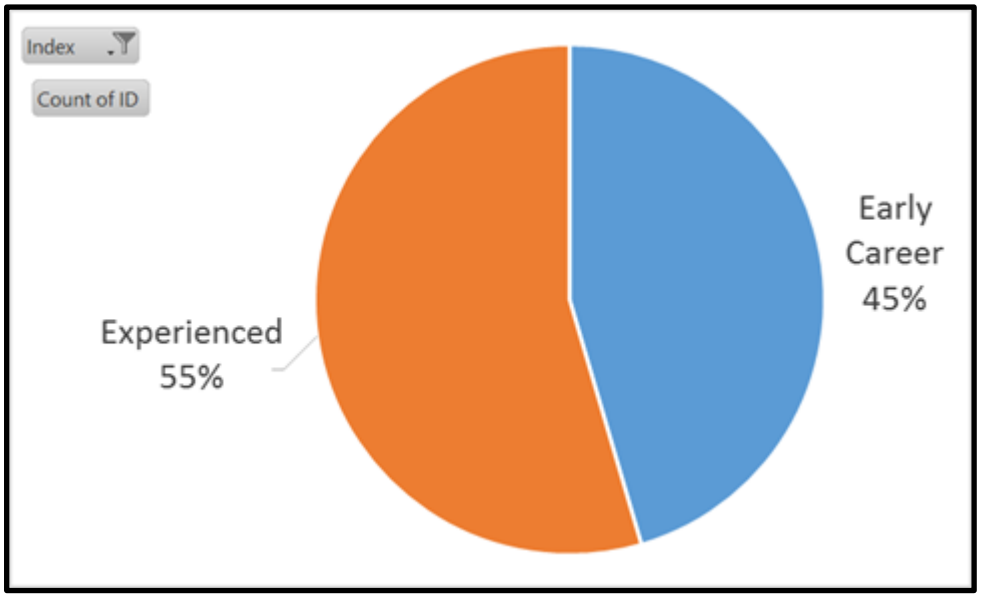
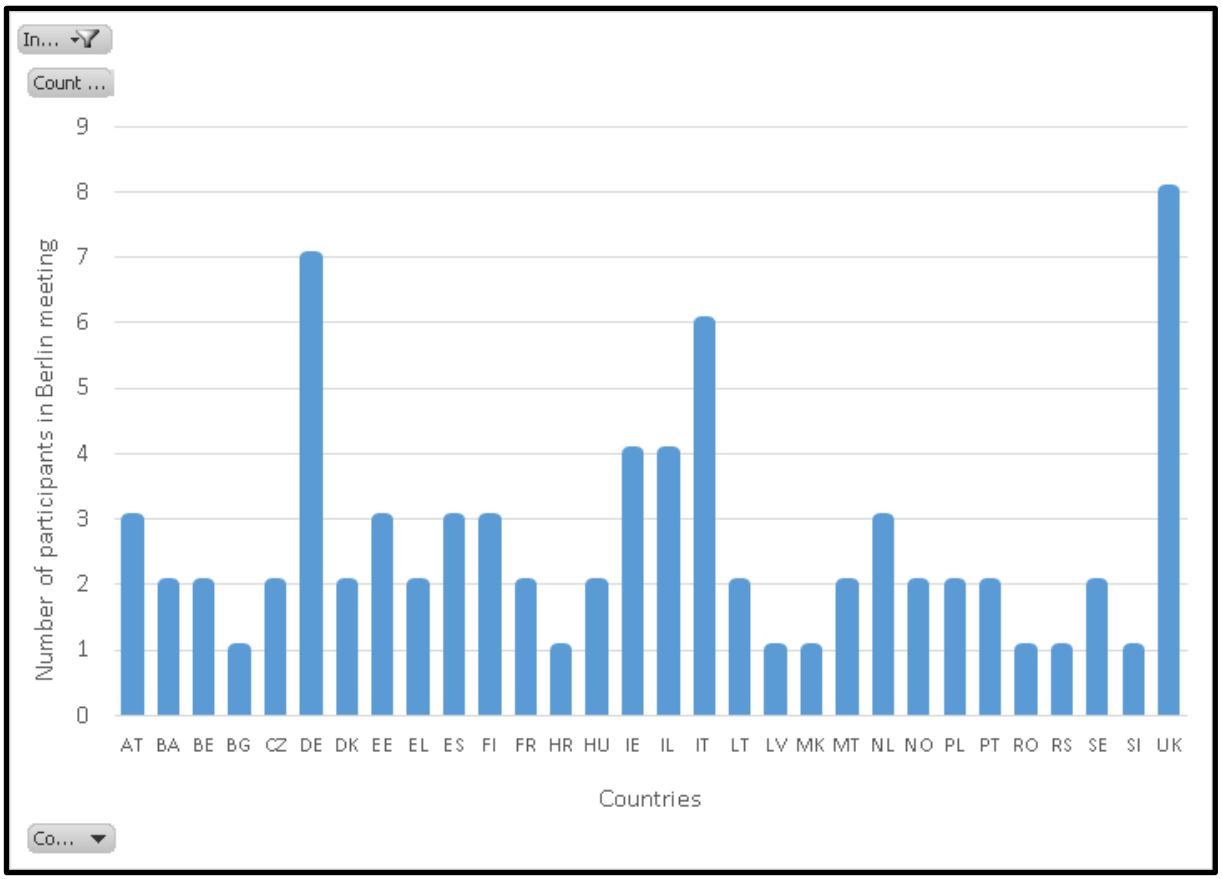


Figure 7: Representation of early careers during MC Meeting 2016 Berlin.



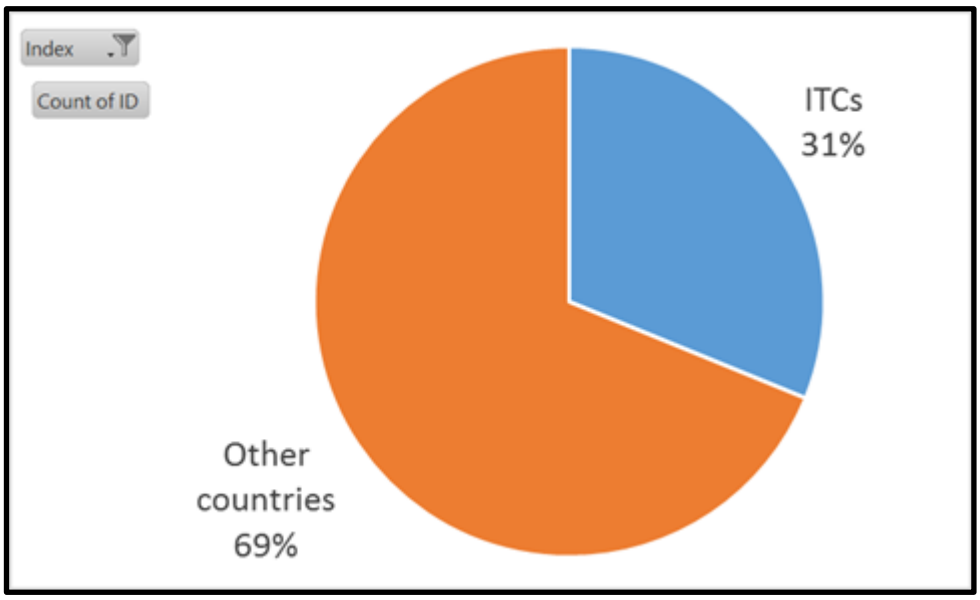


Figure 8: Geographical origin of participants of MC Meeting 2016 Berlin.
Figure 9: Percentage of ICT countries at MC Meeting 2016 Berlin.

The group will draft notes with recommendations for the chair and vice-chair and they will assess the performance with regard to gender balance/early career and ICT representation throughout the action.

10. Follow-up MoU objectives: progress report of working groups – including scientific strategy (11.a)

see Appendix for detailed report of working groups which serves as basis for scientific planning.

11. Scientific Planning

b) Action Budget Planning

The chair suggested an overall budget plan for the next phase (Fig. 10). In addition, she explained that the two workshops planned for March 2017 may have to be postponed into the next funding period, depending on the final budget of this MC.

The importance and timeline of summer schools was debated. Some see them as important instrument which allow to combine different objectives of the actions, others find it to early and argued for more STSMs. WG 6 feels responsible to develop the summer schools into a coherent programme synthesizing different activities from the action.

The Chairs asked for more concrete working plans from the working groups (meetings, priorities). It was recommended to make more but less expensive workshops.

The working group chairs will send plans for deliverables and instruments by the end February to the chairs. Based on this, a budget will be proposed in March by the Chairs.

If there are possibilities to join forces, please use them. Examples are:

- Estland is planning a big citizen science conference in November, linked to the Presidency of the Council of the European Union; Could also be an opportunity to have a MC meeting
- Stockholm University is planning a Baltic Citizen Science Conference in October and have approached one of the WGs and suggested to join forces. Could also be an opportunity to have a MC meeting.

Please send events to info@cs-eu.net
They will be collected and made accessible via the webpage.

Budget

Period II	1.5.17-30.4.18	Location	Responsible Person	Amount 160 000 € guesses
MC Meeting				Ca. 40.000
Summerschool				Ca. 20.000
Workshops	4 x 15.000			Ca. 60.000
Conference				-
STMs				Ca. 10.000
MOOCs				-
Publications				Ca. 2.000
Outreach				Ca. 8.000
15% GHI				Ca. 24.000

Fig. 10: Rough first estimation on budget distribution in next funding period.

c) Long term planning

The WG's should propose rough working plans (activities and instruments) for the whole action.

d) Dissemination Planning

The Chair will ask three agencies with regard to offers to design the website; proposals for agencies are welcome - please send them to the Chair until January 20th 2017. Agencies in all countries are welcome.

In addition, a logo competition starts, chaired by Josep Perrello (WG 6). Details are on the webpage, the competition is open until January 20th. Please get in contact with the Josep Perello and Katrin Vohland if you want to be involved in the website planning.

12. Location and date and purpose of next meeting

a) Workshop: Ontology of Citizen Science Projects, 6.-7.3.2016, Novi Sad, Serbia (Imre Lendak)
b) Workshop: Develop concept for stakeholder mapping, 13.3.-14.3.2016, Vilnius, Lithuania (Loreta Tauginienė)

Both organisers and the MC members agreed to postpone these workshop into the next phase in case the budget will not allow.

[update: both workshops can take place as originally planned]

13. Any other business

14. Summary of MC decisions

Requests to join the action:
Shirk and Sauermann were are approved to join.
Peters was approved to join
Xia was preapproved to join.
Hulbert was preapproved to join.

Budget:
Based on the working plans of the working groups which link outcome as contribution to the overall COST Action targets to specific instruments until mid-February, the chairs will suggest a budget for approval in March.

15. Closing

Minutes with contributions from Kristine Bohmann, Byron Antoniou, and Marisa Ponti

Berlin, 19.1.2017 Katrin Vohland

Detailed Reports of Working Groups

Working Group Report WG 1: Ensure scientific quality of Citizen Science

Bálint Balázs & Peter Mooney

In Brussels we had nine people in our WG1 meeting. In Berlin we had 27 participants. In the WG1 meeting Balint and Peter suggested topics for discussion based directly on the MOU document of the COST Action. In this way there were several specific key tasks outlined. Overall there was a very good session of open discussions from all participants from a wide spectrum of backgrounds. We had input from everyone in the room in a round-table process.

We agreed that we need to emphasise the benefit of Data Quality to Citizen Science researchers. We would like to focus on the methodologies used in Citizen Science projects. The WG1 participants agreed that we are not trying to impose data quality standards or protocols on Citizen Science. Rather one of our key tasks is to develop a broad overview of data quality in CS. This overview will allow us to develop recommendations on the design of future Citizen Science projects. It is also necessary to review Citizen Science projects for the aspects of these projects which were very successful but also for aspects of the projects which were not so successful. We agreed that this would involve talking directly to leaders and contributors to Citizen Science projects.

Given the budgetary constraints it is unlikely that there will be a physical meeting of WG1 in the remainder of this COST Action financial year. However Balint and Peter will be in contact with WG1 participants in the coming weeks regarding moving forward on our actions.

Collaboration spaces to make it easier for this large WG to collaborate:
WG1 BaseCamp: https://basecamp.com/2071195/projects/13361286
.

WG 2: Develop synergies with education

Yuri Matteman & Silvia Winter
Used the full two days to meet and get to know each other. >34 people in the group. On dec 12: Looked at what attributes does a cit sci project have in 2016 re education and what should projects in the future have. Dec 13: came up with mission statement of the working group and questions and then made a timeline for the next 6 months and divided tasks. The group want interaction with other working groups.

WG 3: Improve society-science-policy interface.

Eszter Berényi & Doina Balahur

The working group will focus on the outcomes of CS projects for policy makers at local, national, and European level concerned with policies impacting the environment and society. The objective of this WG is to make government officials and decision makers aware of CS by providing evidence and guidance material, so that they can use it as part of policy formation, implementation and evaluation.

WG3 Meeting - Minutes and Notes (By Peter Mooney) - 16:15 - 18:00 December 12th 2016

WG3 Leaders: Eszter Berényi (beresz@wst.hu) and Doina Balahur (doinabalahur@gmail.com)

The WG3 meeting opened with welcomes from Eszter and Doina. Eszter then presented a presentation on the overall feedback from the questionnaire which was circulated to the whole Action. It was acknowledged that there are synergies with WG4 and WG1 of course. However avoiding timetable clashes is difficult. There was about 20 people in attendance in the room.

In the presentation Eszter explained that there were 29 answers to the questionnaire. Wide range of countries responded to the questionnaire.

Not clear if there are many actual citizen scientists among the respondents. Perhaps the questions were too open to interpretation. So respondents may not have mentioned that they are involved with citizen science as contributors or participants themselves.

The point was made that many of us are academics working with Citizen Science - but in some cases are citizen scientists in other projects where they may not be the experts.

Who has already run/managed/participated/coordinated a citizen science project? This question was asked to the room. The response indicated that there are different levels of participation amongst the professional scientist from the Action in citizen science activities outside their direct line of work.

ACTION: Is it possible to collect a listing of names of people and the CS projects they have run/organised/participated in for the benefit of WG3?

What does “participation” mean for academics with Citizen Science? There is also the position where an academic has not been actively involved in a CS project but at least has performed a study or review of CS projects or data.

The expectations of the working group were outlined in the presentation as per the results of the survey. Amongst the responses included

- “ethics in CS”,
- “how can policy makers be made aware of CS”,
- “how can citizen opinions be reflected in research questions”,
- “what are the best practices/gaps/bad practices in the CS-policy relationship”,
- “mapping the process of the dialogue between citizen science and policy making”.

Dimensions of the goals of the WG.

Expectations towards citizens

How can citizens be engaged?

How can they be urged towards “scientific thinking”?

Expectations towards scientists

How can citizen opinion be reflected in the research questions?

Ethical issues in Citizen Science

Expectations towards decision makers?

How can D/M be made aware of CS

How can CS data be included in the D/M process

When we think about best practices/gaps/bad practices in the CS-Policy relationship we must ask - **from which perspective or viewpoint is the practice actually good practice??**

The social process of knowledge production in Citizen Science-

Who wants to know what and why?

Who has the necessary means for the social production of knowledge?

Whose interest is easier to be represented?

Whose knowledge and what kind of knowledge is easier to be acknowledged by decision makers?

We look at the social and political context!

Need to map the process of the dialogue between citizen science and policy making - what if there was no C/S - what if there is no dialogue? What happens then? It is not necessarily an approach of collecting good or bad practices and making a comparison.

What about the culture in which C/S can grow or appear? What if the culture is more orientated towards a volunteer culture?

Starting a Framework of Analysis

How?

Citizen Science Policy Relationship

Participation

Inclusion

Efficiency

Distinction between top-down and bottom-up processes

Top Down: "we" the scientists or decision makers want something - how is this feasible for example in terms of awareness raising

Bottom Up: existing civil activities - how can these activities be encouraged, how do we scientists "find the voiceless", how about activities which do not exist yet actually be encouraged (this means seeing some type of social action or pattern developing)

Distinction between general and specific dimension

In a possible literature review generally - the relationship between knowledge and policy - power issues, inclusiveness issues.

Perhaps we will have to make it very clear which discipline our findings apply to or whether our findings can be generalised to?

Comment - we might need to be much more specific about the relationship between science and policy when we are talking about motivations.

Our Embodied Knowledge 1 - Topics
We have to 're-use' our own knowledge here (air quality, coastal and marine, water, VGI, spatial planning, housing studies, smart cities, etc). We cannot make funding appear for research so we must reuse the type of knowledge that we bring to this group.

There are some missing topics - cultural heritage, civil, self-help of disadvantaged groups, etc.

Our Embodied Knowledge 2: Projects - these are the projects which people who responded to the survey indicated that they were involved in

Socientize
COST Action ENERGIC
COST Action TD1202
Doing it together science (H2020)
iSPEX
FP7 "Be WAter - Society adapting to global change"

In practice how do we start linking science to policy -

One approach is to consider how to put citizen science data together with official data - in terms of a European example. This has been done before by the EEA (European Environmental Agency). How did this go? Was this successful? How did policy makers react to this when they realised that CS data was included?

Environmental Impact Assessment - described in legislation. One of the steps say that you must "address the local community and receive comments". The community can then say what they have collected or monitored.

Scientific domains - some of which are not "regulated" (there is legislation for limit values, target values, etc). Pollen for example is not regulated. There is somewhere that C/S can help. Pollen, for example, is difficult to monitor. Despite modern technology there is still very old technology used.

We need to look at the opportunities like these for the chances to interact with the way that citizens (and citizen science) is interfacing with policy. There is an example from Norway where high-school groups collected air quality information which was integrated into the national reporting of air quality.

Where do we match with existing legal frameworks? Or where can be integrate with existing legal frameworks?

What sort of hypothesis do we want to test with C/S? Can policy indicate some hypothesis that could be tested?

The names - volunteering, crowdsourcing, pro-creation, network science, public participation in scientific research, street science … etc Depending on which type we are looking at - the information produced is turned into knowledge in different ways.

We could develop a glossary with examples, case studies, the type of knowledge produced, the type of policy interface or policy effect?

We need a framework for analysis - what would the WG members add? Policy makers judge things pragmatically and we need a framework of analysis which synthesises a lot of information in other for policy makers to understand what they are getting out of C/S projects. So **a typology of C/S for policymakers** - this will not be easy to generate. There is already a mountain of knowledge out there. How is this structured?

Doina's table. As drawn out on the Flip Chart.

Activities undertaken (domain)

Scale (local, regional, national)

Types of Citizen Science (level of involvement)

Projects funded (for example from partners in industry)

Documents and policies (legislation)

These heading could form the basis for a way to help the WG structure the working towards the tasks and objectives as set out by the MOU.

The PHASE of the process (data collection, data analysis, impact access of the C/S)

What about the LEVEL OF IMPACT of the C/S in the final decision making?

Arnstein's ladder (no participation, formal participation, etc)

It is very interesting when C/S can play a role in creating or generating new policy or legislation. What is the kind of policy impact? What about the influence on science policy?
Can we instead promote or provoke change by C/S and then study and understand it? We probably do not have the resources to do this? Perhaps there is the possibility to make some case studies?

The crucial step is finding gaps where C/S can contribute. Trying to create something completely knew might be too big for a COST Action. Indeed finding the gaps for C/S is based on looking at systems and policy areas which are very well defined and well established for maybe decades.

Fermin (Spanish Delegate)- to draft a few lines about 'structural changes' which C/S can create?

Has legislation influenced C/S? Or has C/S influenced legislation? Has the way that legislation being structured over the years actually created the environment or framework within which C/S has developed.

ACTION - Possibly consider the creation of a Google Drive folder - allow people to add a 1-Page document to describe their feelings, ideas, etc. This probably needs to sync with all of the other working groups. Outcome on Day 2 - to align with WG6

DELIVERABLES - What are the deliverables?
TWO TASKS (Good practices … raise awareness of success factors) and THREE DELIVERABLES.

As a basis the group should work towards what is in the MOU.

Task 1: Collate good practices and existing policy guidelines on how to use CS for policy making and implementation. **[Q4]**
Task 2: Identify and raise awareness of success factors and mechanisms that increase the policy impact of approaches drawing upon CS, taking the integration of citizen-generated data with official data into account.

Deliverable 1: Compendium of different science-policy interfaces that have been improved by CS activities (Task 1).
Deliverable 2: Scientific paper on mechanisms of how CS improves society-science-policy interfaces (Task 2).
Deliverable 3: Policy Brief on CS engagement in different research domains and at different levels of governance in relation to specific societal challenges, including data integration (Task 2).

Eszter - slide on "What do we want - the most recurring experiences"
Doina - ask for contributors on from the WG - the experience of the members of the working group.

Gather a list of emails.

There are two ways to go about this….

1. Working with the questions from the what do we want - the most recurring expectations.
2. Then Doina's table. Can this form the basis of a framework to collect information?

Perhaps two sub groups will be formed?

In the email - say which of the working group aims in the MOU we are interested.

TASK 1 is to be delivered in Q4. So it is close. Perhaps we get working on this as a whole.

There are lots of synergies from the other working groups. So trying to ensure that we tie in with these WG groups to reduce the amount of duplication of effort is very important.

Germany Survey example from WG1 - Is there a correlation from the type of project and what the types of outcomes are.

The meeting closed with all participants providing their email addresses for further contacts.

WG 4: Enhance the Role of CS for Civil Society

Artemis Skarlatidou & Loreta Tauginienė

Meeting on Dec 12: Reviewed main tasks and deliverables - four of five are scientific papers. Who we are and the participants' expertise. Three additional sessions. If anyone wants to use basecamp they can get in touch - a great tool.
During the sessions a couple of ideas were discussed and agreed on how to proceed further following the timeline of the tasks and related deliverables. Furthermore, the presentation from volunteer perspective was provided.

During the session on December 12, the group discussed an initial codebook developed by Marisa Ponti (a framework) to map the literature on previously conducted case studies of citizen science in several domains. The codebook would be used for completing Task 2.
During the session on December 13, the group discussed an initial sketch of a possible project approach for a call under SwafS-13-2017 - Integrating Society in Science and Innovation – An approach to co-creation.

WG 5 - Improve data standardization and interoperability

Luigi Ceccaroni & Imre Lendak

The objective of WG5 is to develop a metadata-concepts vocabulary and an ontology to support data sharing among CS projects. WG5 will coordinate with activities on data and service interoperability carried out in Europe, the USA and Australia, and will take into account existing standards, namely Open Geospatial Consortium (OGC) standards, ISO/TC 211, W3C standards (semantic sensor network/Linked Data), and existing GEO/GEOSS semantic interoperability.

The COST action, in its first effort to identify core ontology classes by drawing on previous research, existing vocabularies and standards, adopted, as basis for project metadata, the work done by the CSA's Data and Metadata Working Group on core project metadata mappings, and will adopt, as basis for tools metadata, the work done by SciStarter on the tools database.

The work plan of the COST action for December 2016 – March 2017 is:

- Refinement of core requirements of the ontology of citizen science based on existing experience (not only in biodiversity).
- Refinement of the identification of core ontology classes and associated relations by drawing on previous research, existing vocabularies and instantiations.
- Development of a plan for further refining core requirements, ontology classes and associated relations with input from the larger citizen science community.
- Mapping and documentation of meetings/workshops/conferences on standardization and interoperability in citizen science to be able to build on previous work, to synchronize efforts, and not to repeat efforts.
- Definition of a plan on how to disseminate/standardize results, beyond papers.

In relation with WG5, work by EU BON on a Citizen Science tools (apps, web platforms) catalog is being carried out:

- A citizen science tools database is being developed and exposed via a webpage but still needs new information to be added [http://biodiversity.eubon.eu/web/citizen-science/cs-tools-list]. The need of harmonization with the SciStarter tools database has been recognized.
- EU BON table for collecting information about online CS tools is available at [https://docs.google.com/spreadsheets/d/1o2zPCc6JmieewJtAw-Z1-EDDa6yj6dPLP2WznMP2yIE].

WG 6: Overaching - Cross-WG-Synthesis and overarching measures

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Slides: https://docs.google.com/presentation/d/1iL5mfDxfu36hCfnFM-zA0pvbrJyAZbtYwqPimRPHEvA/edit?usp=sharing

Task 1: Cross-working group synthesis communication within the different activities and especially during the bi-annual meetings of the MB.

- We have to include this effort during the next bi-annual meetings.
- It has also been suggested that WGs leaders shall meet as a small size group or be in contact together to enhance communication.

Task 2: Capacity building, which includes the activities STSMs, training schools as well as online and digital seminar.

- In terms of STSMs, Maria Attard is doing a great job and we believe that it is taking a nice shape.
- In terms of training schools, we recommend to run no more than 4 training schools and they shall start in 2017. It is necessary to merge several WGs and although all of them shall be of interest by all WGs we believe that we shall put the accent on different aspects in each of the 4 schools. Just being some temptative themes: 1. CS as a new way of becoming/acting as a scientist 2. CS for Education and Learning, 3. CS in the new democracy 4. Invisible citizen science. In terms of audience (mostly young students, also policymakers?) and location this shall be deeper discussed. We suggest to prepare an open call (first one in February 2017) to be launched annually.
- The digital seminar contents will be deeply linked with the training schools.

Task 3: Internal and external communication including webpage, newsletter, meetings, site events as well as the award for outstanding females and ECIs.

- A detailed document is been prepared for designing the webpage (available in January 2017).
- An open call for logos is been launched. [*details for the logo competition are published. It is open until January 20th 2017*]
- Awards for outstanding females and ECIs will be organised starting from February 2017 in order to increase visibility and recognition of practitioners. Many details still needs to be define: Jury?, Seasonality?, Open Call?

The deliverables around these tasks have been discussed. We summarize the discussion in relation to them:

Deliverable 1: Scientific article outlining a common concept of CS.

- We have decided to prepare two scientific articles:
    - one on why this COST action (short and describing the aims of the action). What are the challenges and what are the needs that has motivated COST Action?
    - one position paper (strategic paper) later on. Challenges and Futures of Citizen Science for the next four years. Citizen Science as a practice able to connect for:
        - Participation (action research, transdisciplinary research, collective research)
        - Policy (Agenda setting - research question)
        - Education (science literacy - mutual learning)
        - Open Science (accessibility, degree of institutalisation, IPRs, ethics)
        - Responsability / Ownership (crowdsourcing - co-design - co-production)
- Both articles shall be prepared during 2017-2018. We propose to organise a 2-day writing meeting in Brussels.

Deliverable 2: Roadmap document containing common research agenda for CS to address global grand challenges.

- We have decided to prepare it by the end of the project and by mostly starting from papers written by each WG, as a synthesis exercise.
- We may think of several roadmaps depending on which target we want to address: Policymakers, institutions, activists?
- The final format is still unclear and might be part of a final book to synthesize the output from each WG. However, we can also consider a material for non-expert audience or to general audience.

Deliverable 3: Open access edited book on CS and innovation

- The publication is planned by the end of the project, but we need to start now with all details.
- It can be presented in the final conference or even after the final conference.
- Open Access strategy and format shall be carefully planned
- It has been suggested that Editors shall include one representative of each WG
- To have a first and clear proposal in 2017.
- We believe that we should carefully choose the Authors to be fully representative in many senses (countries, topics, actors in citizen science). We shall fill gaps in the current literature also including with major experts in CS.

Finally, we have to keep in mind that final conference will be in 2020 and shall be in Berlin. It has been said that it would good to merge the ECSA conference or as a pre-conference of ECSA conference to save resources and make sure that it becomes a really crowded event.

Overarching issues: Invisible citizen science

(WG 1 & WG 2; Bálint Balázs & Eszter Berényi)

This session was organised as overarching topic between WG 1 looking for scientific quality in citizen science and WG 3 focussing on policy aspects. Key hypothesis was that there may be practices especially in East (and also South) Europe which resemble citizen science norms but are framed differently. There will be different outputs, also with regard to papers, one going more in the linkage with the democratization discourse, others may compare underlying cultural layers.

Overarching issues: Smart Cities

(WG ###, Zvi Weinstein)

As far as known, there are none experiences and experiments in the field of CS and smart cities. Therefore, we can declare that it is an unusual opportunity for us to become creators of a new sub-group topic for CS groups to participate in determining the degree of their quality of life in urban physical, social, educational, health, community, mobility, governance and economical environments.

Following the discussion we had, I gathered several ideas which may establish a solid base for the continuation of our sub-group and the initiating of CS research in the topics below:

1. Green city
2. Quality of life in a variety of aspects influencing citizens daily life in urban settlements
3. Services for the benefit of citizens in the city
4. Issues that bother citizens: water and air pollution, public transportation, accessibility to services, inequalities, ex/inclusion of social communities
5. Building a data base and guidelines for CS in smart cities
6. Open spaces in the city
7. CS Citizens activism

8. CS and crowdsourcing
9. Citizen and security in the city
10. CS as democratic activity among smart cities
11. CS and the right for the city
12. CS and the built environment
13. CS as initiator of urban / neighborhood planning
14. CS and open / green spaces in the city
15. Wellbeing
16. And the list go on…..

Dear colleagues,
I hope we'll remain an active, initiative and innovative group who leads the topic of CS in smart cities.
I would appreciate your comments and suggestions for further activities regarding issues of:

- Ø Methodology
- Ø Further idea for CS participation in the urban environment
- Ø Collaboration with Urban Labs / research centers
- Ø Collaboration with other EU-COST Actions
- Ø Cooperation with different departments at your universities