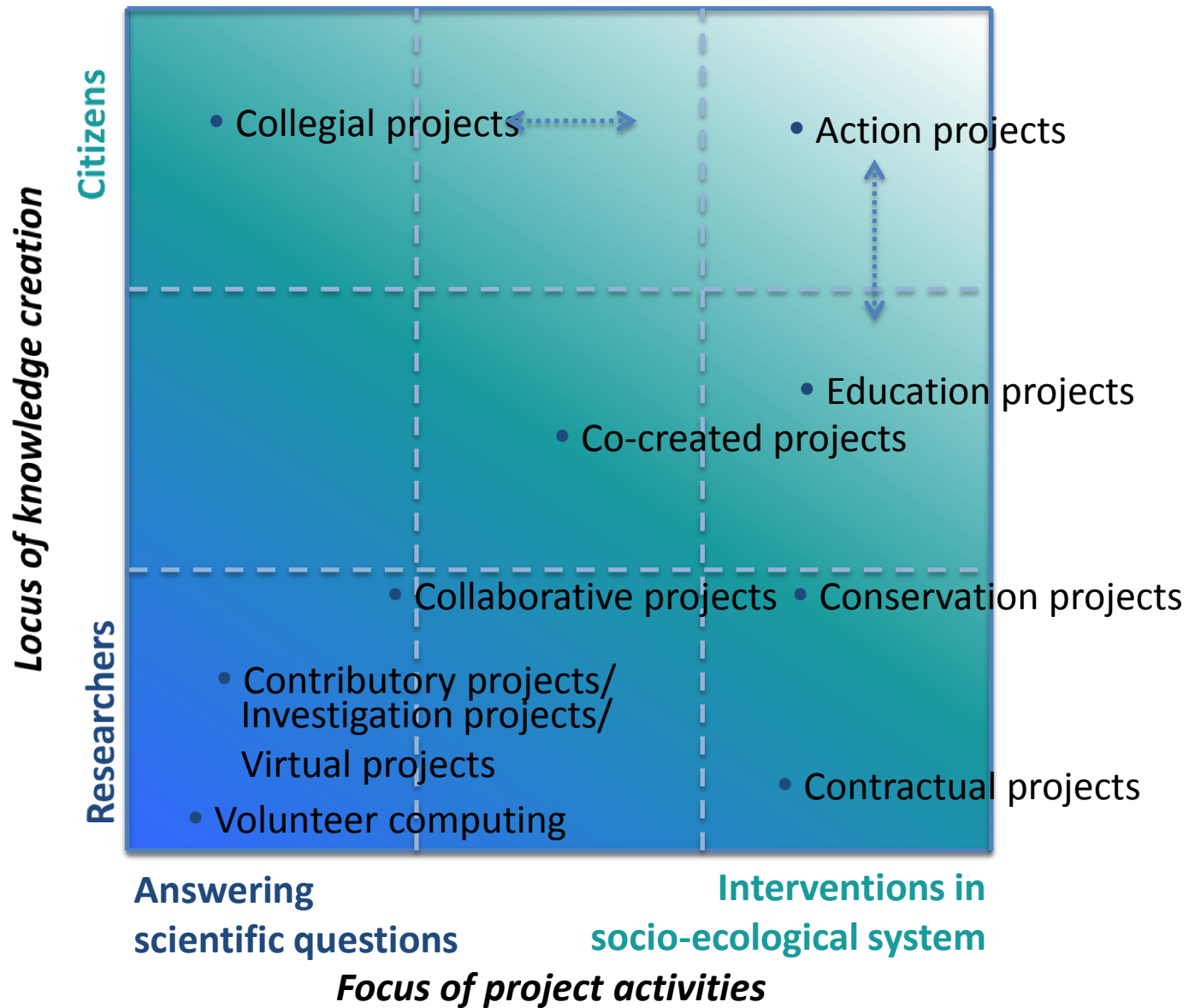


A photograph of two women in a dimly lit room, possibly a laboratory or office. The woman on the left is wearing a white button-down shirt and glasses, looking at a smartphone held by the woman on the right. The woman on the right is wearing a bright yellow t-shirt and glasses, pointing at the screen of the phone. The background is dark and out of focus, with some colorful objects visible.

Evaluation and impact assessment of Citizen Science: what's the value for projects and for research funding policies?

Barbara Kieslinger

Centre for Social Innovation - ZSI



...How to evaluate?
How to provide evidence of
impact?...

Current approaches to evaluation

Focus	Indicators	Actors
Learning	Improved skills, knowledge gain Personal development Behaviour change, attitudes, motivation	Participants, focus on Citizens
Scientific	Number of papers published Number of citations, number of grants Size and quality of scientific database Number of thesis	Participants, focus on Scientists
Socio-ecological	Enhanced social capital, community capacity building Economic impact (job creation)	Community
Communication	Identification of audience, Understanding needs of audience, Collaboration with communication experts	Proposers, reviewers

Open Citizen S

	Pro
Scientific dimension	•
Citizen scientist dimension	•
Socio-ecological/economic dimension	•

	Science	Citizens/actors	Socio-ecological/economic system
Process and Feasibility	<ul style="list-style-type: none"> Are the scientific goals and aims clear and authentic? Does the project adhere to the definition of citizen science (e.g. citizens involved in the scientific process)? Is the scientific objective pertinent to citizen science and why? Does the scientific objective show relevance for society and does it address a socially relevant problem? 		
Relevance of Scientific Problem			
Data and Systems	<ul style="list-style-type: none"> Does the project have a transparent data management plan that defines ownership and handling of data? Does the project have an PR strategy and ethical guidelines that consider the rights of citizens? Does the project have open interfaces to connect to other systems and platform? Is the generated data shared publicly and under which conditions, e.g. in anonymised, metadata, consent? 		
Ethics, Data protection, IPR			
Openness, Standards, Interfaces			
Evaluation and adaptation	<ul style="list-style-type: none"> Does the project have a sound evaluation concept considering scientific as well as societal outcomes? Does the validation of citizen science data match with the scientific question and the expertise in the project? What processes are defined to guarantee high data quality? Does the project include a scoping phase? Does the project have an appropriate risk management plan? Do project structures include feedback loops to stay adaptive and reactive? 		
Evaluation and validation of data			
Adaptation of process	<ul style="list-style-type: none"> Does the project cooperate with other initiatives at national or international level? Does the project foster new collaborations amongst societal actors and groups? Does the project link to experts from other disciplines? Are there plans for sustaining the collaboration between citizens and scientists? 		
Cooperations and synergies			
Outcome and impact			
Scientific knowledge and publications	<ul style="list-style-type: none"> Does the project demonstrate an appropriate dissemination strategy to share scientific results? Are citizen scientists participating in publications or is their engagement recognised? Does the project contribute to dual education and life-long learning? Does the project generate new research questions, new projects or proposals? Does any cross-fertilisation of projects take place? Does the project contribute to any institutional or structural changes? 		
New research fields and structures			
New knowledge resources	<ul style="list-style-type: none"> Does the project ease the access to traditional and local knowledge resources? Does the project contribute to mutual understanding and collaboration in science and society? 		
Process and Feasibility			
Target group alignment	<ul style="list-style-type: none"> Does the project have adapted communication plans for its citizens? Does the project have a sound engagement concept (e.g. gamification)? In which project phases are citizens involved? Are the options for participation and the degree of involvement diversified? 		
Degree of involvement	<ul style="list-style-type: none"> Are citizens and scientists equal partners throughout the project? Are support and training measures adapted to the different participant groups? Are objectives and results clearly and transparently communicated? 		
Facilitation and communication			
Cooperation and synergies	<ul style="list-style-type: none"> How interactive is communication and collaboration between scientists and citizens organised? Does the project involve organisations that provide relations and communication structures with citizens? 		
Outcome and impact			
Knowledge and attitudes	<ul style="list-style-type: none"> Does the project influence knowledge and skills of individual participants? Does the project contribute to a better understanding of science? Does the project influence values and attitudes of participants regarding science? Are ownership and responsibility transferred to the participants? Does the project contribute to personal change in behaviour? Does the project raise motivation and self-esteem amongst participants? Are participants motivated to continue the project or to involve in similar activities? In case of younger students do they consider a scientific career? 		
Behaviour and ownership			
Motivation and engagement			
Process and Feasibility			
Target group alignment	<ul style="list-style-type: none"> Does the project have a targeted outreach strategy? Does the project include innovative means of dissemination (e.g. art)? In which project phases is broader outreach foreseen? 		
Active involvement	<ul style="list-style-type: none"> Does the project provide hands-on experiences also for broader outreach? Does the project include appropriate means of science communication and popular media? Are objectives and results clearly and transparently communicated? How interactive is communication and collaboration between scientists and the broader public organised? Does the project seek cooperation with science communication professionals? Does the project leverage civic society organisations for communication and synergies? 		
Dissemination and communication			
Cooperations and synergies			
Outcome and impact			
Societal impact	<ul style="list-style-type: none"> What are the societal goals of the project and how are they communicated? Does the project foster resilience and collective capacity for learning and adaptation? Does the project foster social capital? Does the project stimulate political participation? Is there any impact on political decisions? 		
Collective capacity, Social capital			
Political participation			
Ecological impact	<ul style="list-style-type: none"> Does the project include objectives that protect natural resources? Does the project contribute to higher awareness and responsibility for the natural environment? 		
Targeted interventions, Control function			
Wider innovation potential			
New Technologies	<ul style="list-style-type: none"> Does the project foster the use or development of new technologies? Does the project have a sustainability plan? Are project results transferable? Does the project contribute to social innovation? Does the project have an economic potential to be exploited in the future? Does the project establish cooperation for exploitation, e.g. with social entrepreneurs? Does the project generate an economic impact, e.g. cost reduction, new job creation, new business model? 		
Sustainability, Social innovation practice			
Economic potential, Market opportunities			

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Considerations

- **Contextualisation**
 - Not one standardised set of indicators
 - Needs to be adapted to the project/programme context
- **Prioritization**
 - Shift from scientific impact indicators to social, citizen, economic, ecological impact indicators
- **Long-term impact**
 - Support structures for longer term funding
 - Resources for evaluation
- **Support measures**
 - Evaluation guidelines, good practice, methods
 - Transparency

ANNEX FOR THE ASSESSMENT PROCEDURE:

Notes and questions for the members of the Top Citizen Science (TCS) expert panel

As equal opportunities and equal treatment are key priorities in the Top Citizen Science funding initiative, the evaluation of proposals must not account for any criteria extraneous to research and citizen science (e.g. age, gender, etc.) to the applicants' disadvantage.

On the basis of the defined requirements for proposals, panel members are to consider the following aspects of each application in their decisions:

1. Quality of the project

a. Quality of additional TCS expansion project:

- How is the expansion project positioned in relation to state of the art in international research and CS activities?
- Are the TCS expansion project's goals described clearly?
- Quality of "Additional value of TCS expansion project":
 - Compatibility with main project: To what extent is the TCS expansion project a meaningful expansion/complement to the main project?
 - Insights to be gained: What additional substantive research insights – which would not be possible without the participation of citizens – will the expansion project generate?

b. Methods, work plan and time schedule

- To what extent do you consider the methods envisaged for the TCS expansion project and the planned use of technologies to be appropriate?
- Are the work plan and time schedule clearly defined and appropriate?

2. Quality aspects – Interactions with citizens and handling of data

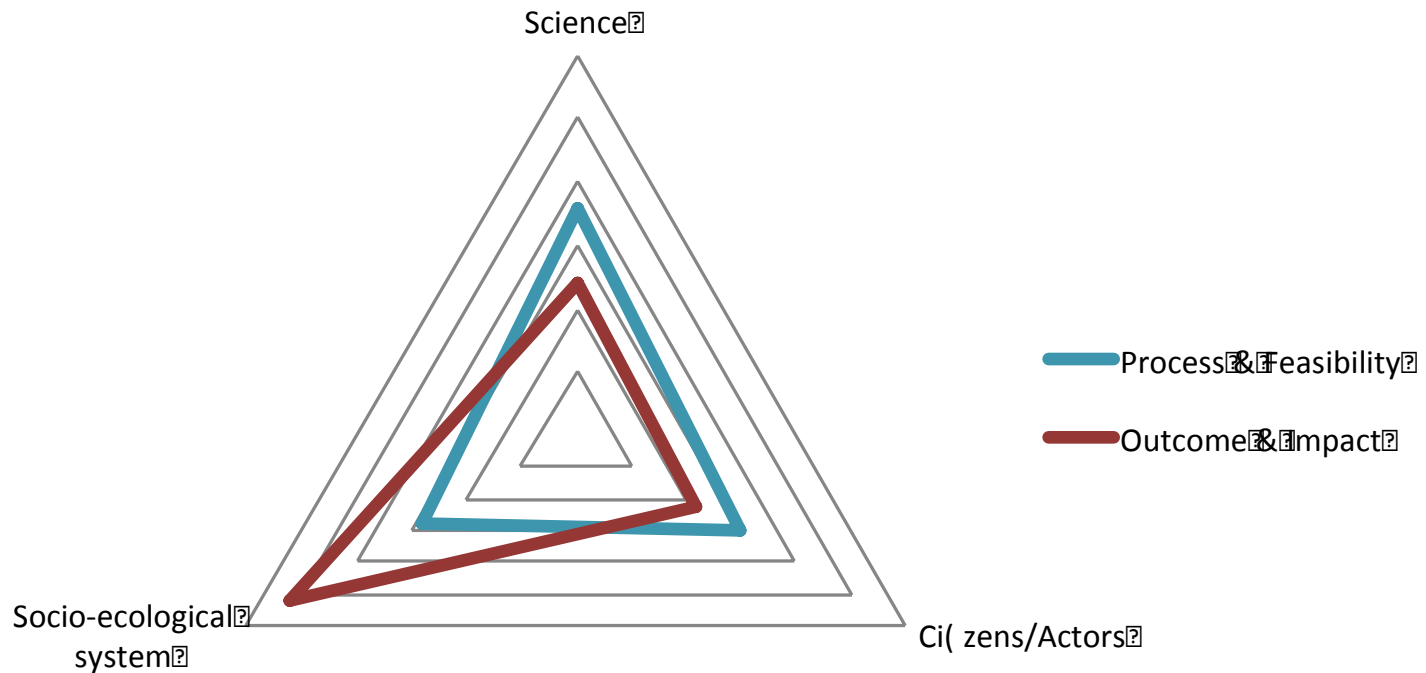
- a. Are the definition, planned selection procedures, scope, qualifications and the like suitable for the target group addressed?
- b. What is your assessment of the communication plan for the envisaged target group as well as the planned methods of involvement?
- c. What is your assessment of the added value and personal benefit that citizens can derive from this project?
- d. Will the quality of data be ensured appropriately?
- e. How would you assess the applicant's consideration of data protection/privacy issues?

How to apply for policy makers

- Evaluation criteria
- Guidelines for proposers

How to apply for projects

CAPTOR: Collective Awareness Platform for Tropospheric Ozone Pollution



- Self-assessment tool
- Guidelines for project planning and monitoring

THANK YOU!

CITIZENS ARE...



RESEARCH

