



Diving into impact assessment in citizen science

Citizen Science Networking Day 2026

Dr. Mohammad Gharesifard
Assistant Professor of citizen science, University of Groningen
(m.gharesifard@rug.nl)

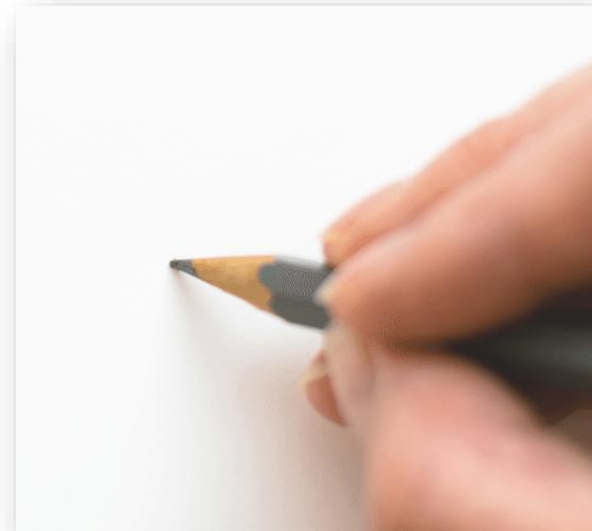
28 September 2026



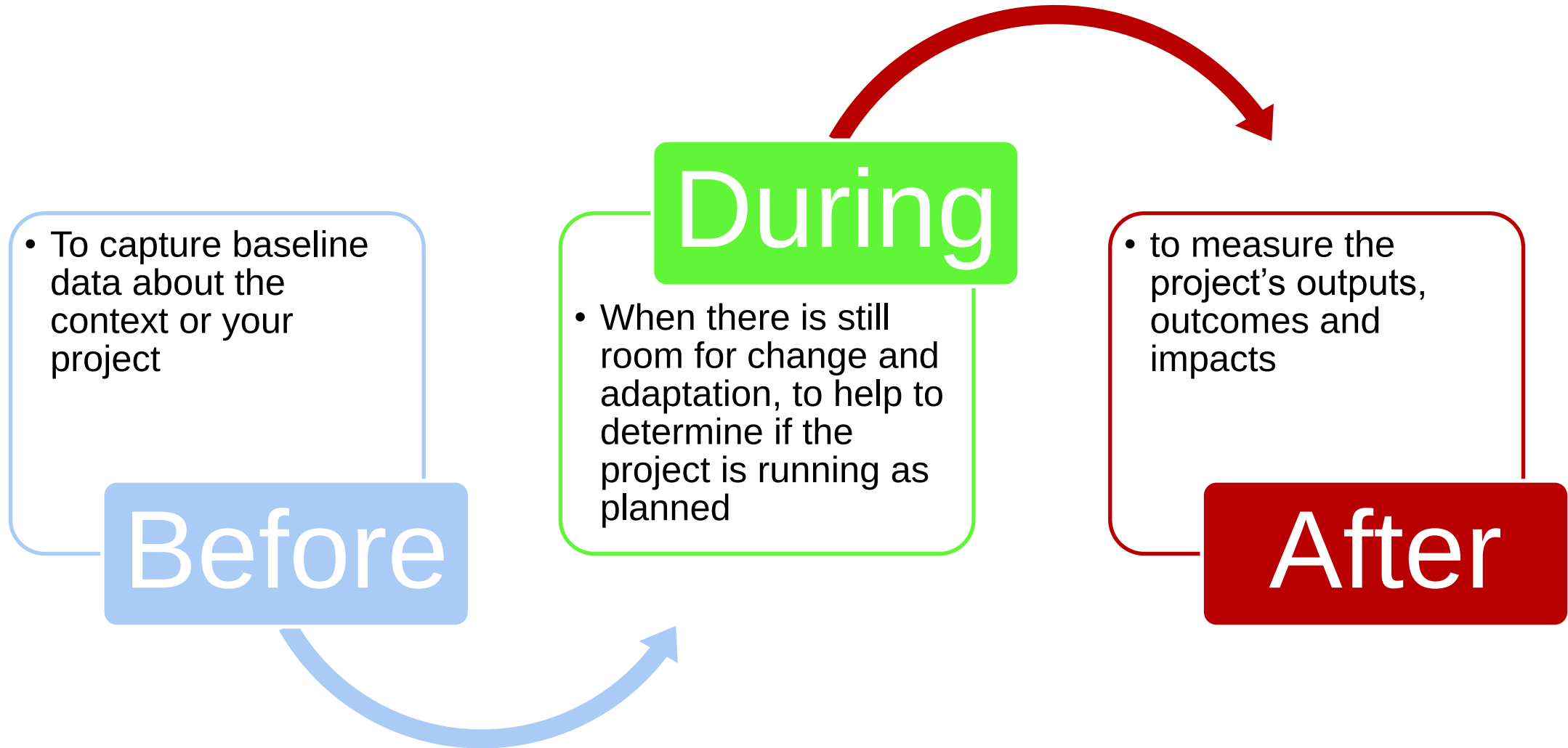
Evaluation and impact assessment are not the same!

Evaluation is the **systematic collection of data** to **determine strengths** and **weaknesses** of projects, programs, policies, process, or products, so as to **understand** and **improve their overall effectiveness** (Phillips et al., 2014)

Impact is the **demonstrable contribution or change** resulting **from an intervention, project, or research** e.g. on society, economy, environment, etc.

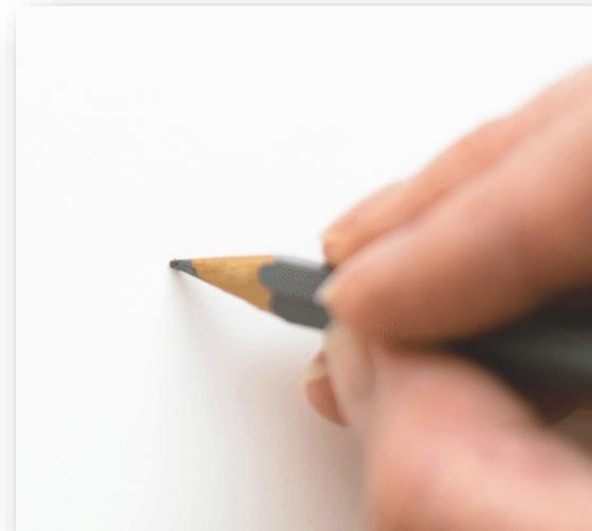


When to Evaluate a CS project?



Negative/unintended impact?

Impact is often **assumed**, implicitly or explicitly, **to be positive** and “the possibility that research **impact could be negative** – “Grimpact” (Benneworth et al., 2019) – or even open to interpretation, is almost never articulated” (Jensen et al., 2025)



Impact assessment resources

MICS (Measuring Impact of Citizen Science)



Online guide

IMPETUS (WP5 Impact & Exploitation)



Deliverables

ACTION (Impact assessment)



Impact Assessment



IA Canvas



Youtube webinar

ECS (Monitoring project impacts)



Assessment plan



Impact Stories

Time4CS (Monitoring CS hubs)

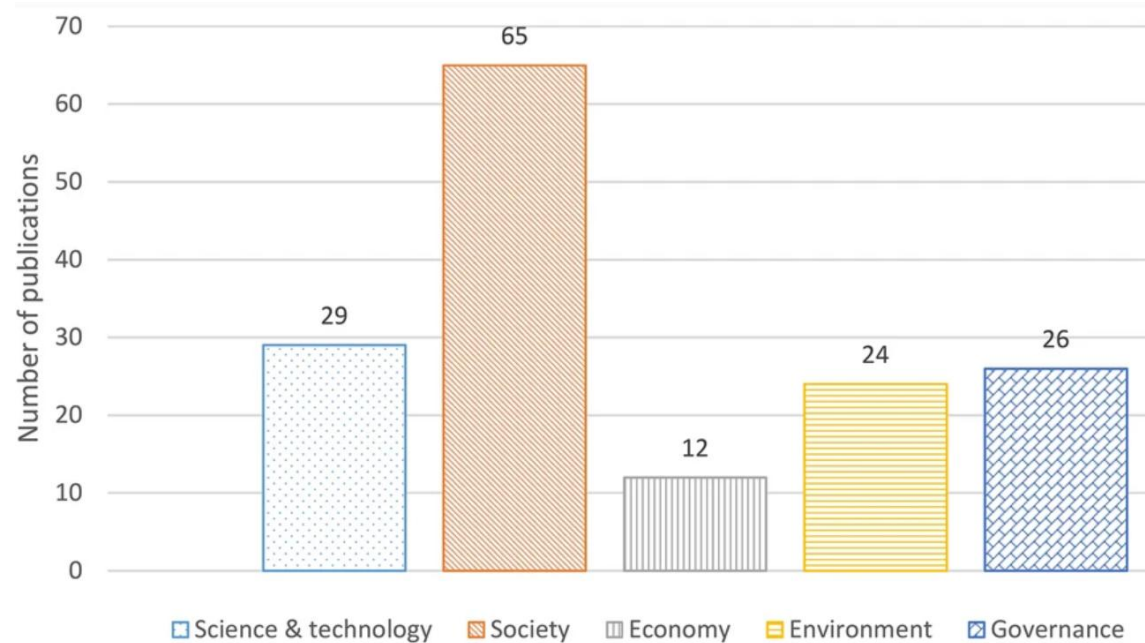


Monitoring toolkit

Domains of impact



Domains of impact

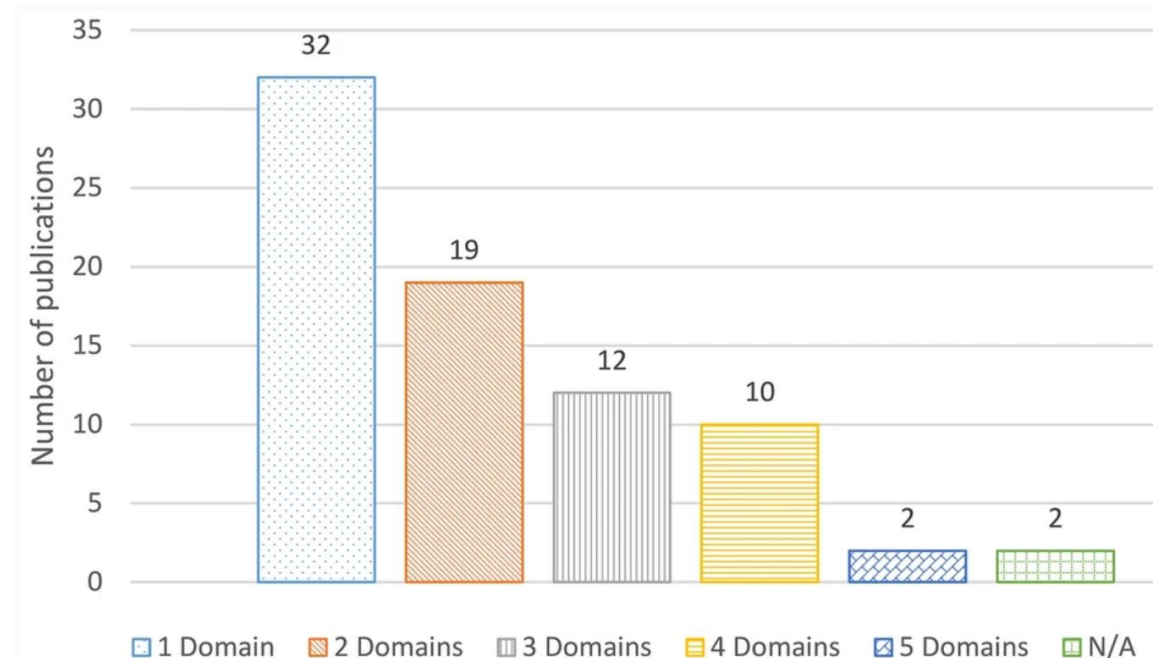


Relevant publications identified
per domain (n = 77)

Impact assessment of citizen science: state of the art and guiding principles for a consolidated approach

[Uta Wehn](#) , [Mohammad Gharesifard](#), [Luigi Ceccaroni](#), [Hannah Joyce](#), [Raquel Ajates](#), [Sasha Woods](#), [Ane Bilbao](#), [Stephen Parkinson](#), [Margaret Gold](#) & [Jonathan Wheatland](#)

[Sustainability Science](#) **16**, 1683–1699 (2021) | [Cite this article](#)



Number of domains addressed
per publication (n = 77)

How capture and communicate about impacts of citizen science?

Qualitative/
quantitative Indicators

Impact Journey
(or pathways)

Impact Scores

Impact Stories

How to measure impact?

Using (qualitative/quantitative) Indicators

Domain	Indicator Cluster	Indicator Title
Science & Technology	Data collection and management	Data
		Data and systems
		Enhanced data
	Collaboration in science	Collaboration and synergies
		Scientific impact
		Community participation in research
		Scientific contribution (1)
	Contribution to science	Scientific contribution (2)
		Scientific value of data
		Written material
		Knowledge democracy
	Decision making	Scientific objectives
		Management and Policy
		Scientific outcomes
	Communication and outreach	Communication material
		Science initiatives & events
		Evaluation and adaptation

Domain	Indicator Cluster	Indicator Title
Economy	Supply side	Company growth
		International trade & investment
		Innovation & research
		Competitiveness
		Economic potential and market opportunities
	Demand side	Employment
		Conduct of business
		Value added for organizations

Domain	Indicator Cluster	Indicator Title
Environment	Natural resources and biodiversity	Biodiversity of flora, fauna and landscapes
		Biophysical and geographical characteristics of natural resources
		Quality of natural resources/ fighting pollution
	Environment & society	Environmental impact on human health* (env. conditions)
		Natural and socio-cultural capital
		Ecosystem and resilience

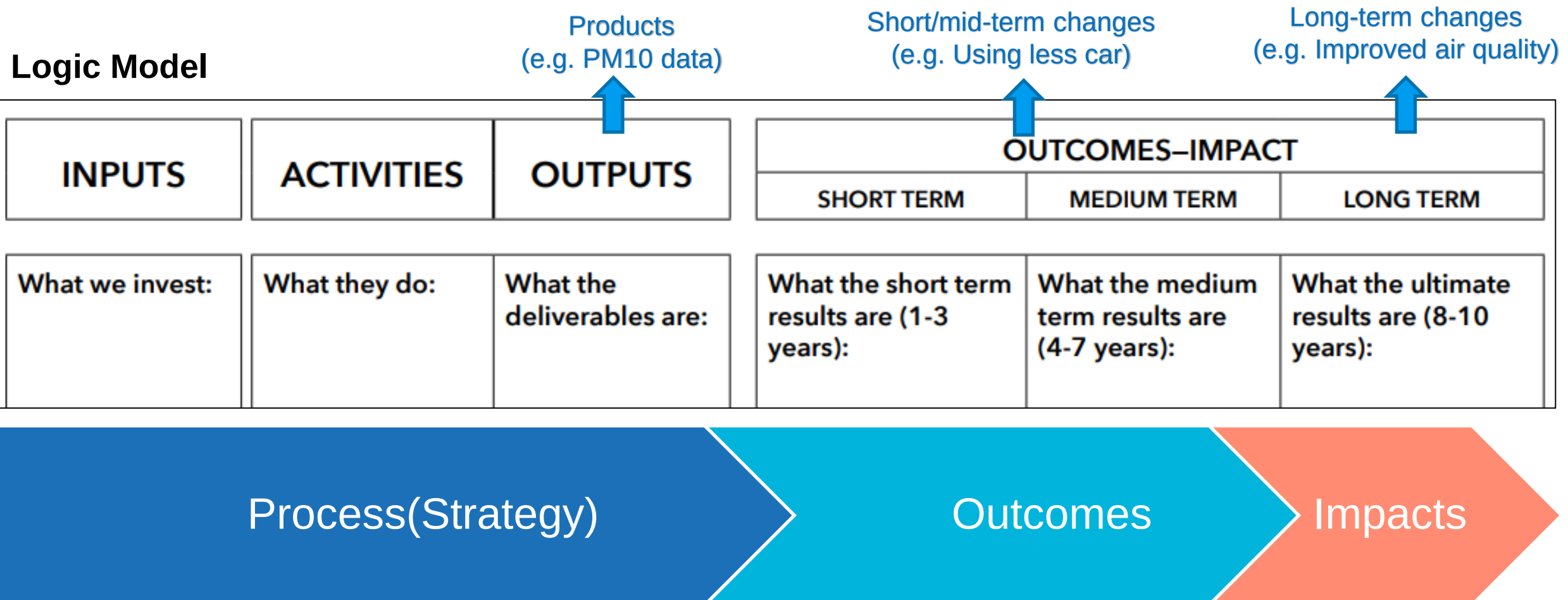
Domain	Indicator Cluster	Indicator Title
Governance	Participation	Participation dynamics
		Institutional commitment to public engagement
	Power dynamics	Power dynamics within CS initiative
		Change in power relations
		Institutional setup
	Impact on policy	Contributions to management plans and policy
		Shift in policy and regulations
	Equality and inclusion	Change in policies & practices
		Gender equality

Domain	Indicator Cluster	Indicator Title
Society	Individual level	Individual development
		Individual learning outcomes
		Environmental knowledge
		Sustainability Knowledge
		Individual learning outcomes
		Capacities (skills and competences)
		Value creation
		Individual learning
		Individual and societal impacts
		Participation and opportunities for learning
		Involvement and support
		Experience and efficacy
		Individual and societal outcomes
		Awareness, and knowledge of a resource
		Pro-environmental attitude
	Meso-level	Environmental motives
		Ecological Behavior
		Individual outcomes
		Transformative change
		Organizational outcomes
		Community building
		Dissemination and feedback
		Community engagement and participation
		Citizen-led research
		Participatory dynamics
	Societal level	Social and cultural characteristics of a resource
		Social inclusion
		Social capital
		Societal outcomes
		Societal outcomes related to human health
		Societal outcomes
		Societal knowledge exchange outcomes
		Societal impact
		Distribution of risks
		Environmental risk perception
	Science & society	Public engagement in science
		Civic action, identity and activism
		Public understanding of science
		Scientific knowledge and attitude change
		Information
	Access to Information Capacity building & education	Capacity building
		Awareness and responsibility
		Environmental education and stewardship

- Indicators can be selected/defined by the project team, or in collaboration with citizens or other stakeholders!

How to measure impact?

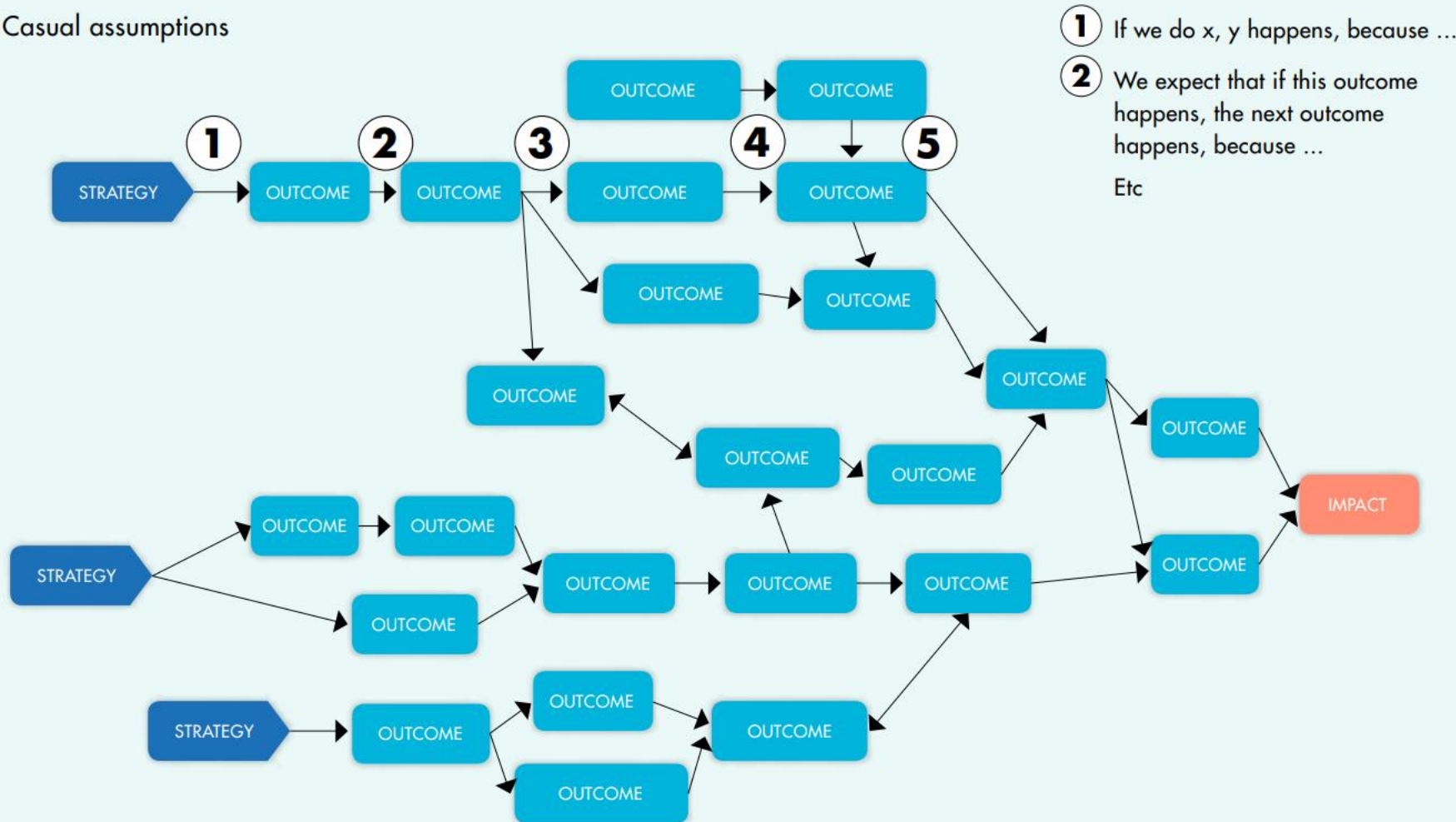
Using Impact Journey (or pathways)



How to measure impact?

Using Impact Journey (or pathways)

5. Casual assumptions



Theory of change (simplified)

How to measure impact?

Using Impact Scores



The screenshot shows the MICS (Measuring Impact of Citizen Science) platform interface. At the top, there is a dark blue header with the MICS logo on the left, which includes a stylized icon of three people and the text 'MICS Measuring Impact of Citizen Science'. To the right of the logo are the links 'Impact assessment guidance' and 'MICS platform'. Below the header is a large teal banner with the text 'I want to measure the impacts of citizen science projects ...by using the standardised approach on the MICS Platform'. At the bottom of the banner is a button that says '← BACK TO THE MICS ONLINE GUIDANCE'.



How to measure impact?

Using Impact Scores

Impact Assessment Tools

[View impact report](#)



D-NOSES
Distributed Network for Odour Sensing, Empowerment and Sustainability

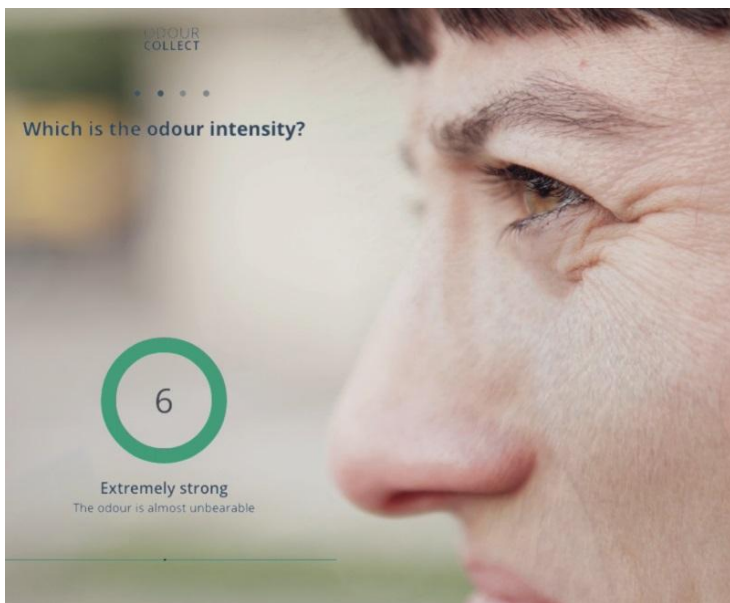
Project start date:
April 2018

Project end date:
September 2021

Project Contacts:
Rosa Arias - rosa.arias@scienceforchange.eu

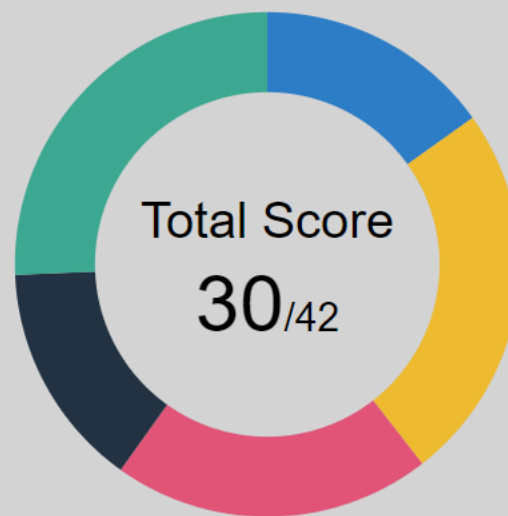
Project URL:
<https://odourobervatory.org/es/>

Impact Assessment progress:
100% complete



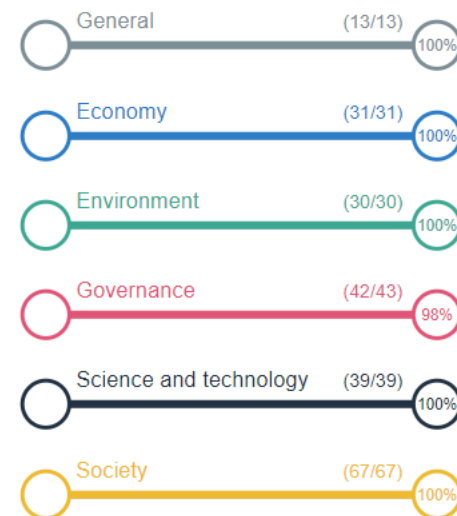
Current Project Impact

The following scores were calculated using a statistically-driven machine-learning approach, a type of AI that learns to perform a task by analysing patterns in data. This is an experimental approach to citizen-science impact assessment, and the exact reasoning behind the scores is not explainable. The scores represent a best guess of the impact the project is having in each domain. Scores are recalculated and updated when "View impact report" is clicked.



Domain Progress

Proportion of questions answered in each domain.

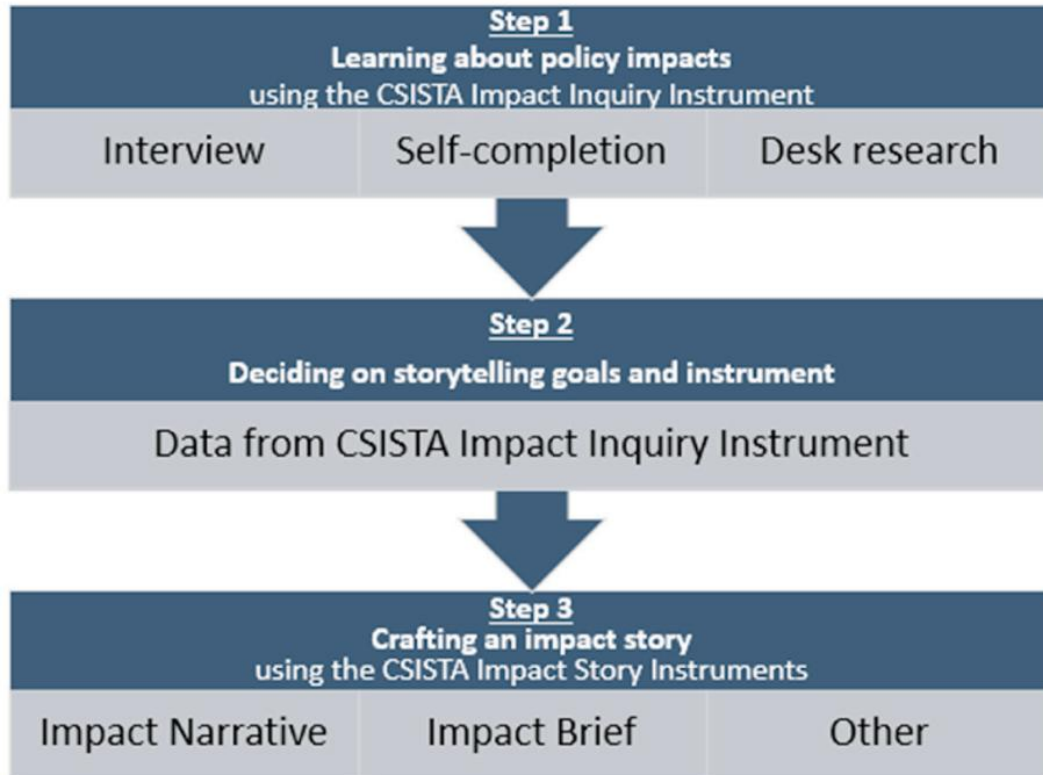


200+ questions

How to measure impact?

Using Impact Stories

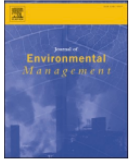
CSISTA – Citizen Science Impact Story Approach



Contents lists available at ScienceDirect

Journal of Environmental Management

journal homepage: www.elsevier.com/locate/jenvman



Capturing and communicating impact of citizen science for policy: A storytelling approach

Uta Wehn^{a,*}, Raquel Ajates^b, Dilek Fraisl^{c,e}, Mohammad Ghareisifard^a, Margaret Gold^d, Gerid Hager^c, Jessie L. Oliver^f, Linda See^c, Lea A. Shanley^g, Michele Ferri^h, Camden Howittⁱ, Martina Monego^h, Ellen Pfeiffer^a, Chris Wood^j

How to measure impact?

Using Impact Stories

Impact Brief

The Value of Citizen Science for Flood Risk Reduction

Citizens' Water Observatory in the Brenta Bacchiglione pilot basin

In a nutshell

Topic: Flood Risk Management, Forecasting & Prevention; and Flood-risk Awareness

Location: The Brenta-Bacchiglione catchment, which is located in the Veneto Region of Northern Italy and includes the Astichiello and Retrone and Rivers. The cities of Vicenza and Padua are the major cities in this region.

Duration: October 2012 and December 2016.

Initiators: The partners of the WeSenseIT project.

Stakeholders: Resident groups and Civil Society groups; Municipalities; the Regional and local Civil Protection Agencies, Environmental Agencies and Irrigation Authorities; and other stakeholders concerned with the management and use of the water resources, and with water related hazards in the Bacchiglione river basin.

Data: Water level measurements and waterway obstruction observations

The challenge

The Brenta-Bacchiglione region is increasingly dealing with the occurrence of rapid flash floods due to the mountainous landscape of the region, and these are difficult to predict and prepare for.



The towns most affected by flash floods in this region are Torri di Quartesolo, Longare and Montebelluna, and the major cities of Padua and Vicenza also receive widespread flooding. The major flood of 2010 that affected 130 communities consisting of 20,000 individuals in the Veneto region is an example of the scale of flooding in this region.

Why does it matter?

Flooding is a long-standing issue in the Brenta-Bacchiglione catchment. The main purpose of this CO is to contribute to increasing the resilience of the region by strengthening the communication process before and during flood events, thus also reducing the damage from flooding, and increasing preparedness for facing future flooding. This is also in line with the requirements of the EU Flood Directive on Flood Risk Management.

Impact Brief

Using eBird to inform conservation efforts for the Tricolored Blackbird

In a nutshell

Topic: Scientific evidence to inform conservation strategies for the tricolored blackbird

Location: California, USA

Duration: 2005 onwards

Initiators: Cornell Lab of Ornithology

Stakeholders: birdwatchers, scientists, advocacy organizations, conservationists, government agencies

Data: relative abundance data, nesting data

The challenge

The Center for Biological Diversity petitioned the state of California and the federal government to protect the tricolored blackbirds (*Agelaius tricolor*) with a threatened or endangered listing in 2004, but the request was dismissed for lack of scientific evidence. Moreover, there seemed to be reluctance to use citizen science data, particularly for regulatory decisions.



Why does it matter?

Tricolored Blackbirds might nest by the thousands in a Central California field one year, then be gone the next. Tricolored blackbird colonies move unpredictably from year to year, making them notoriously difficult to census. Despite apparent population declines, scientists couldn't convince California officials that Tricolored Blackbirds needed the state's protection. Without protection, the bird population was in danger of further decline.

The action

eBird is based on the idea that every birdwatcher has unique knowledge and experience. In 2015, the Cornell Lab of Ornithology used eBird data to generate the scientific evidence needed to



Contents lists available at ScienceDirect

Journal of Environmental Management

journal homepage: www.elsevier.com/locate/jenvman



Capturing and communicating impact of citizen science for policy: A storytelling approach

Uta Wehn^{a,*}, Raquel Ajates^b, Dilek Fraisl^{c,e}, Mohammad Ghareisifard^a, Margaret Gold^d, Gerid Hager^e, Jessie L. Oliver^f, Linda See^c, Lea A. Shanley^g, Michele Ferri^b, Camden Howitt^h, Martina Monego^b, Ellen Pfeiffer^a, Chris Woodⁱ

Community-Based Natural Resource Management (CBNRM) in Zambia:

from a local pilot to a national citizen observatory

Introduction:

Community participation in natural resources management is one of the most important components of rural development and biodiversity conservation. In Zambia, a constitutional change and shift towards decentralization policies support activities that strengthen local decision-making. In principle, community participation in the management of specific natural resources in Zambia is fully formalized in laws and primary policies, most prominently for wildlife management in open and protected areas through local institutional units known as Community Resources Boards (CRBs). Community-level co-management committees are also fully institutionalized for forestry, fisheries and water. In all cases, they are established based on local demand and on application basis, which means local communities have to express the need and willingness to establish a community-level committee, and gain approval by national departments in charge of managing the respective resources. Local rights and rights of traditional authorities are also recognized in relation to land and heritage, but less clearly delineated.



Join our full day workshop on Nov 19th!



Copyright: Citizen Science team RUG

This meeting is funded by:



Save the date!

**On November 19th 2026, the CS team will host an
Open Science meeting on Citizen Science Impact
Assessment**

Date: July 16, 2026

The CS-team is happy to announce that we have received funding from the Open Science NL to organize a full-day workshop on citizen science impact assessment. The goal of the meeting is to bring together Dutch CS practitioners, researchers, support staff, and other interested stakeholders to collaboratively map and streamline CS evaluation and impact assessment methodologies, frameworks and experiences, in order to improve the usability, findability and accessibility of the available tools. The day will build on a previous session we hosted at the CS-NL Networking Event last January and will feature guest speakers from both the Dutch and Belgian citizen science networks.

The event will take place on **November 19th**, presumably from **10:00-17:00** at the **Quinton House in Utrecht**. The detailed programme will be shared in September.

We only have limited spots (40) available, so please register quickly if you want to join!

Registration link: <https://forms.gle/AN8nCvhn4VP1vLU9>



Thank you for your attention!

Mohammad Gharesifard
Assistant Professor of citizen science,
University of Groningen
m.gharesifard@rug.nl