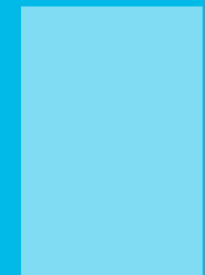




Introduction to citizen science

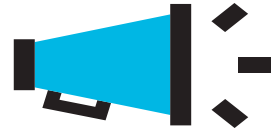
Citizen Science Networking Day 2026 - Schaarbeek

Welcome!



Scivil
1

- 
1. Scivil
 2. What is citizen science?
 3. Who, why and how?
 4. Examples
 5. Choosing citizen science



Promote citizen science
approach



Connect citizen science
stakeholders



Support citizen science
initiatives



Innovate citizen science
methods

Building bridges for better citizen science

As the Flemish knowledge center for citizen science, Scivil is a catalyst and matchmaker, bringing together all parties and required tools for strong citizen science projects. Scivil promotes, connects, supports and innovates citizen science.

[READ MORE ABOUT SCIVIL](#)

How can we help you?

[I need advice on a citizen science project](#) →[I am looking for funding for a citizen science project](#) →[I am looking for a speaker on citizen science](#) →[I am looking for partners for a citizen science project](#) →[I want to start a citizen science project with students](#) →[I would like to get in touch with the Scivil team](#) →

Subscribe to our newsletter via www.scivil.be!





Innovate citizen science



ELF: a prototype project for measuring ELF magnetic fields generated by HV power lines.



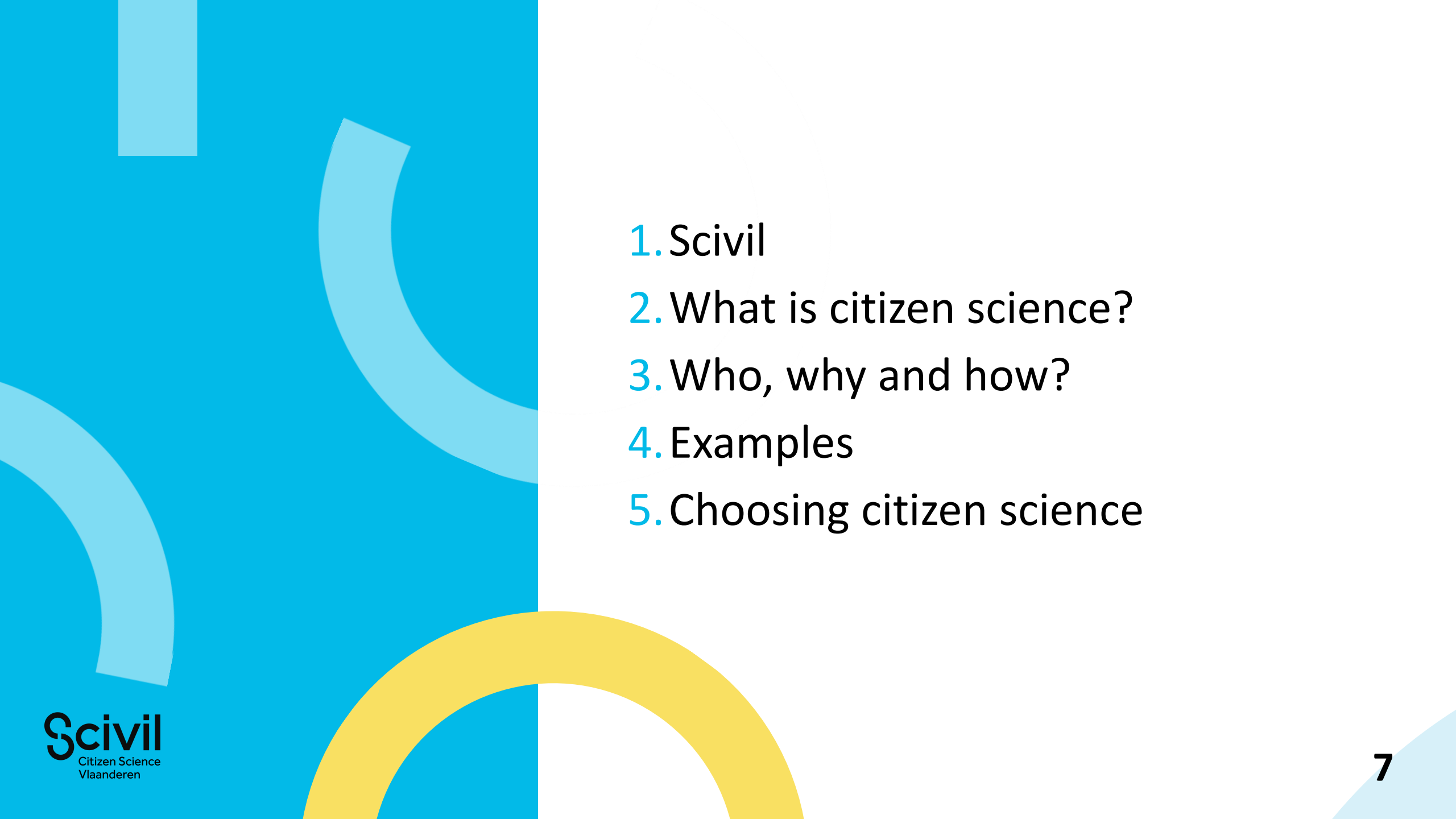
Citizens4Water: An international inventory of freshwater citizen science projects.



Amai!: Participatory approaches for AI innovations driven by society.



Maarallee.be: Growing the database of spoken 'Flemish' in order to teach AI to understand all Belgian Dutch speakers.

- 
1. Scivil
 2. What is citizen science?
 3. Who, why and how?
 4. Examples
 5. Choosing citizen science



How familiar are you with the term 'citizen science'?

Have you contributed to a citizen science project?



Mobility

Large Crowdsourcing projects in Flanders



Air quality



Noise monitoring



Water quality

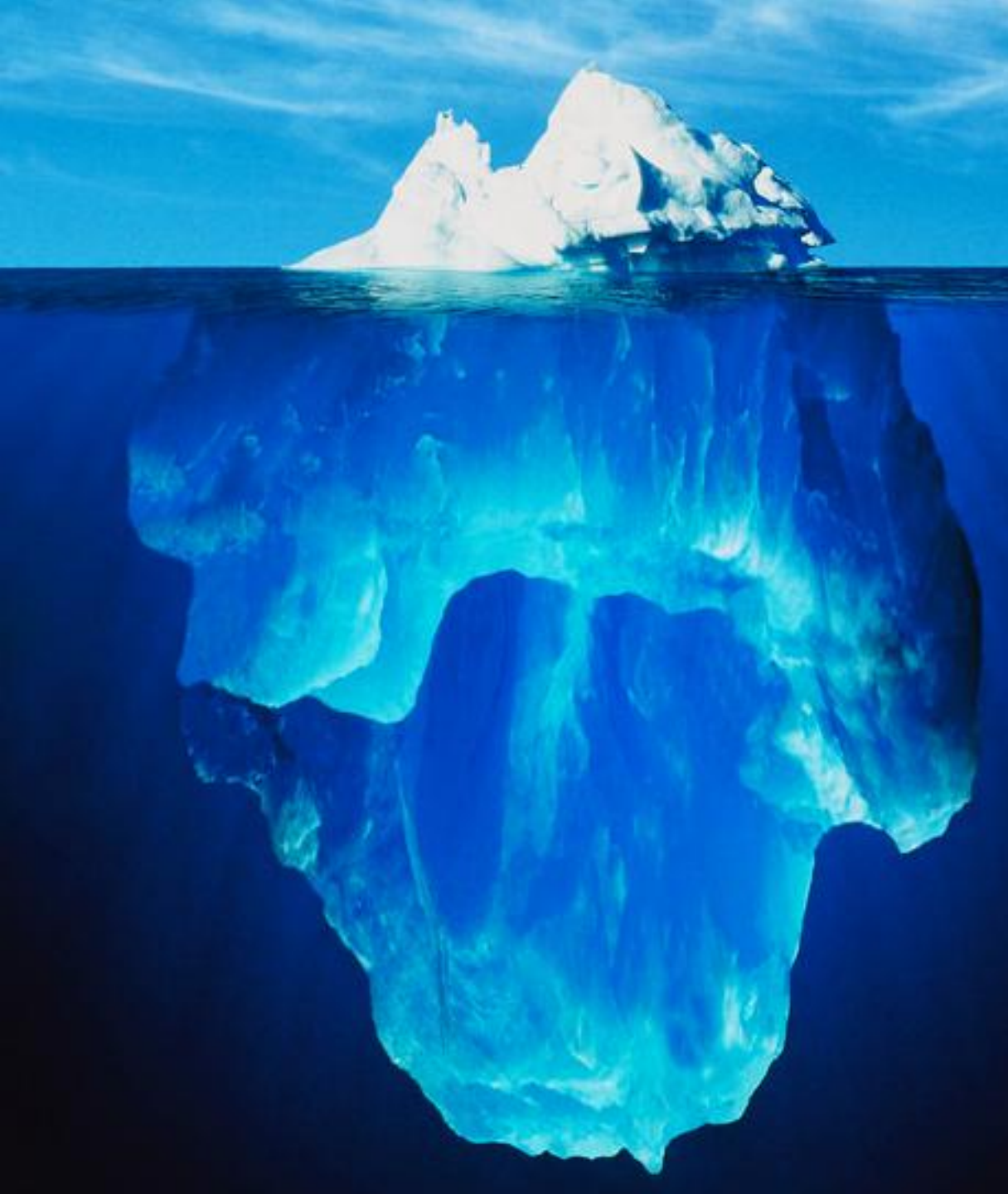
**WATER
MONSTERS**

Biodiversity



ObsIdentify

 **Waarnemingen.be**

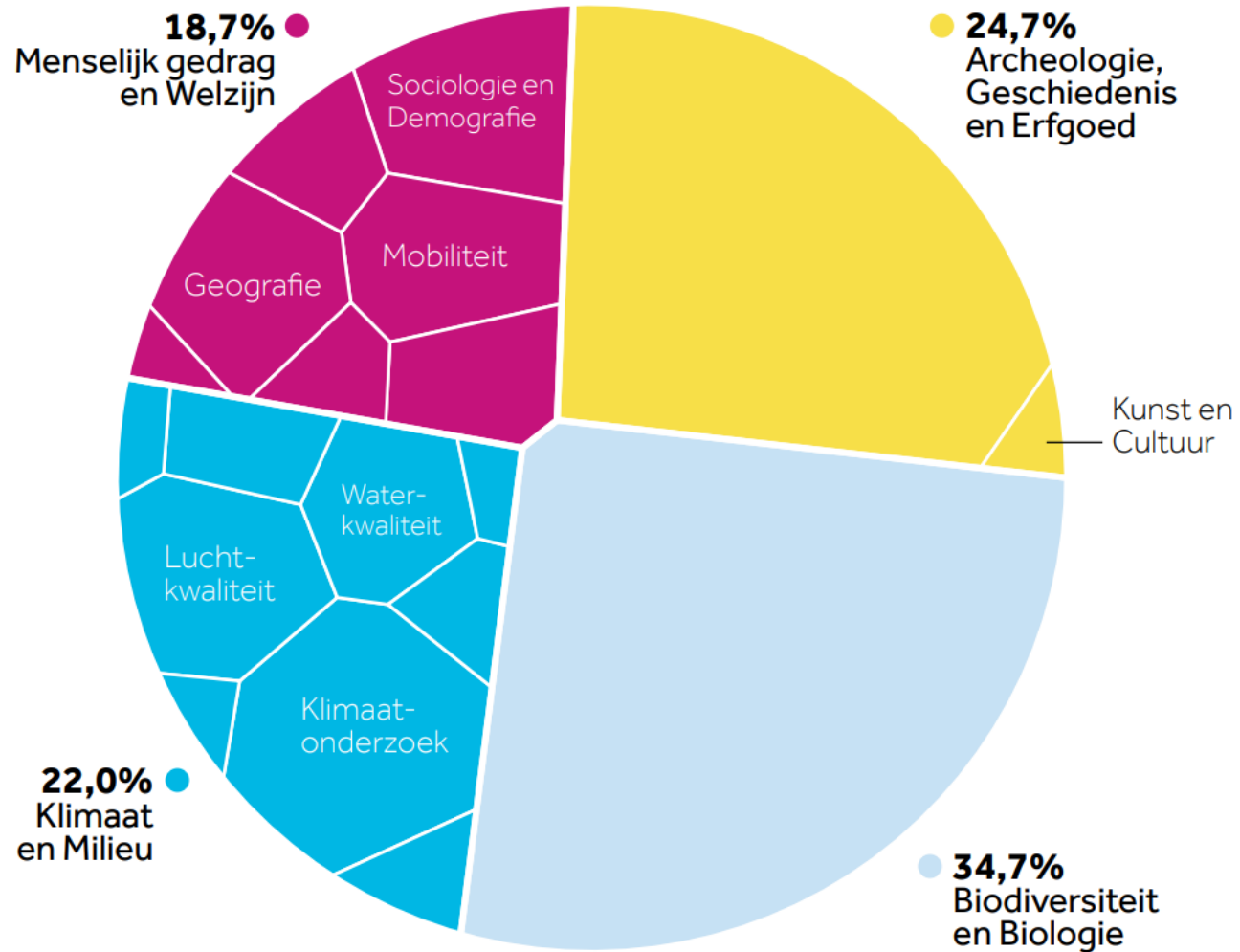


Topics

Air quality
Mobility
Biodiversity
Water quality
Noise
Archaeology
Astronomy
Genealogy
History
Heritage
Health
Art
Sociology
Psychology

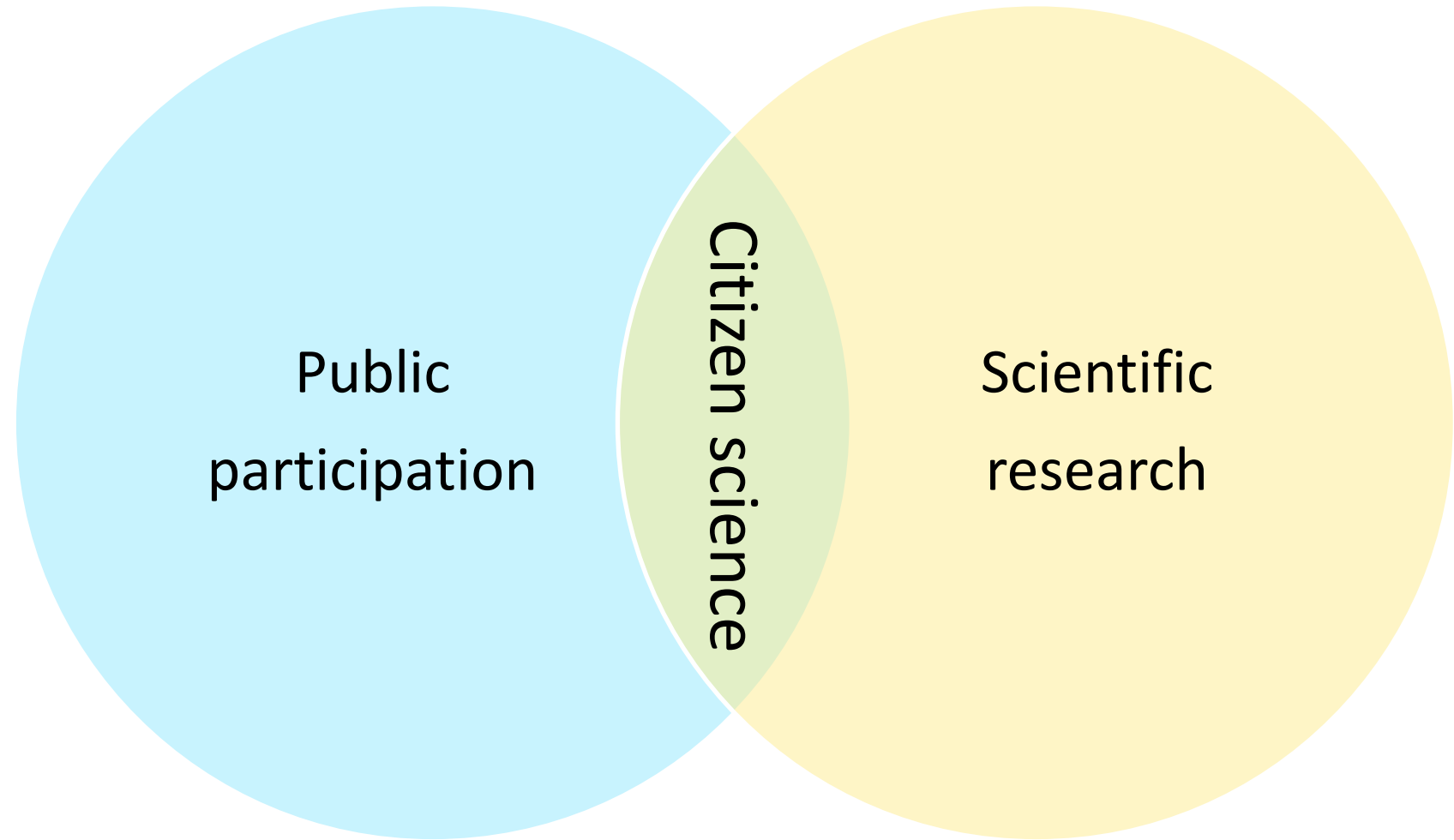
Actions

Sensors
Measuring
Counting
Observing
Photographing
Analysing
Annotating
Transcribing
Interpreting
Communicating
Defining research
Designing method



Duerinckx, A., Hens, C., Strouven, S., Van Laer, J., Vandermaesen, I., Verstraelen, K., (2024). Citizen Science Scan 2023: Landscape and evolution of citizen science in Belgium. SCIVIL, Leuven, België. DOI 10.5281/zenodo.13382908

What?



Ten principles of citizen science

Citizen science is a flexible concept which can be adapted and applied within diverse situations and disciplines. The statements below were developed by the 'Sharing best practice and building capacity' working group of the **European Citizen Science Association**, led by the Natural History Museum London with input from many members of the Association, to set out some of the key principles which as a community we believe underlie good practice in citizen science.

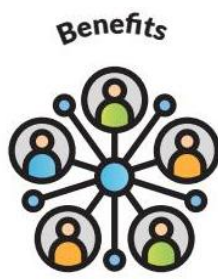
Version 1, April 2020

ECSA's characteristics of citizen science

Introduction

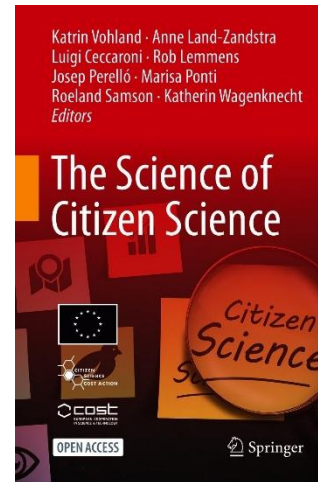
Citizen science is a common name for a wide range of activities and practices. It is possible to understand it by considering the characteristics of those activities and practices, which are described in this document. These are found in different scientific disciplines – from the natural sciences to the social sciences and the humanities – and within each discipline, the interpretation of citizen science can be slightly different. Yet despite these differences, citizen science is an emerging area of research and practice, with evolving standards on which different stakeholders are developing methodologies, theories and techniques. It is, therefore, useful to establish some level of shared understanding, across disciplines and practices, as to what to expect from an activity or a project that is set out to be a citizen science one.

<https://ecsa.citizen-science.net/>



Chapter 2

What Is Citizen Science? The Challenges of Definition



Mordechai (Muki) Haklay, Daniel Dörler, Florian Heigl, Marina Manzoni, Susanne Hecker, and Katrin Vohland

Abstract In this chapter, we address the perennial question of *what is citizen science?* by asking the related question, *why is it challenging to define citizen science?* Over the past decade and a half, we have seen the emergence of typologies, definitions, and criteria for qualifying citizen science. Yet, citizen science as a field

Haklay, M. M., Dörler, D., Heigl, F., Manzoni, M., Hecker, S., & Vohland, K. (2021). What is citizen science? The challenges of definition. In: K. Vohland et al. (eds.), *The Science of Citizen Science*, 13. https://doi.org/10.1007/978-3-030-58278-4_2



EC Factsheet on citizen science, DG R&I, 2020

WHAT IS CITIZEN SCIENCE AND WHY IS IT IMPORTANT?

Citizen science can be described as the **voluntary participation of non-professional scientists in research and innovation** at different stages of the process and at different levels of engagement, from shaping research agendas and policies, to gathering, processing and analysing data, and assessing the outcomes of research.

Active engagement with citizens and society has the potential to **improve research and its outcomes and reinforce societal trust in science**. It can increase

- **relevance** and **effectiveness** by ensuring that R&I aligns with needs, expectations and values of society
- **creativity** and **quality** by enlarging the collective capabilities, the scope of research and the quantity and quality of data
- **transparency, science literacy** and **confidence of the public in research**

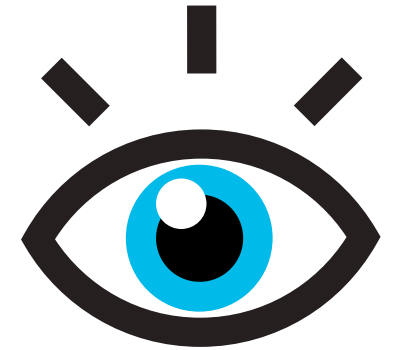
CITIZEN SCIENCE AS PART OF EU POLICY

Citizen engagement is at the core of the Von der Leyen Commission's **New Push for European Democracy** and more participatory decision-making, and an **integral part of the EU's Open Science policy priority** and the **European Research Area**.



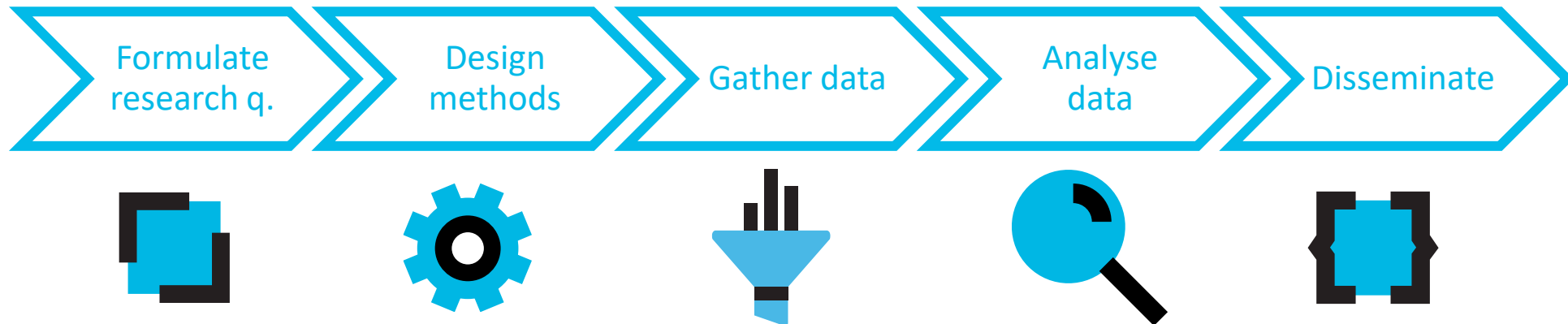
What is Citizen Science?

Citizen Science is **scientific research** conducted, in whole or in part, by **nonprofessional scientists** (citizens). Citizen science is **often** (but not always) conducted in collaboration with **professional** scientists.



Citizens conducting scientific actions

What is Citizen Science?



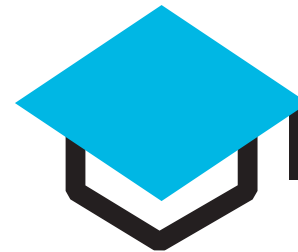
Who?



**(professional)
Researchers**



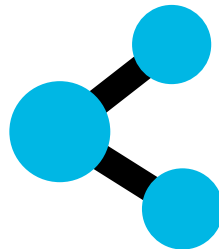
Government



Educators



Citizens



Companies



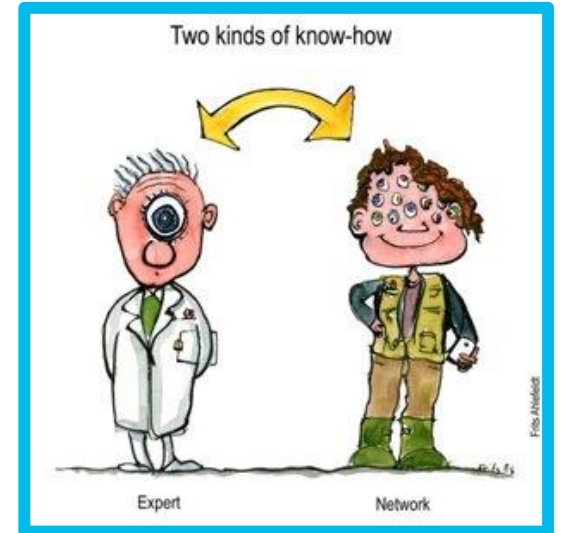
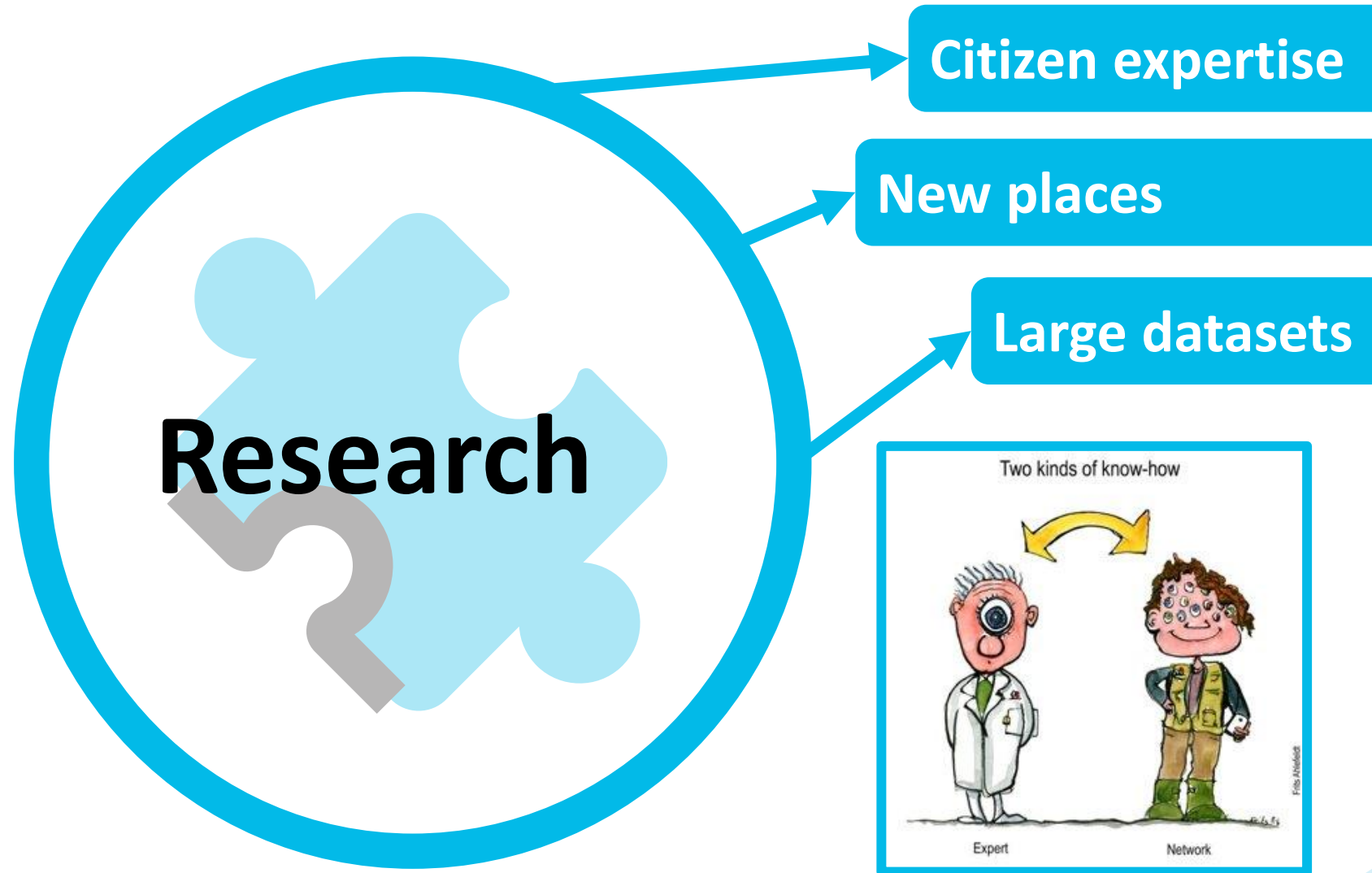
NGO's

Diverse perspectives

Who?



Why?



Why?

Topic

Scientific process

Critical thinking

Education

Research

Impact

Citizen expertise

New places

Large datasets

Empowerment

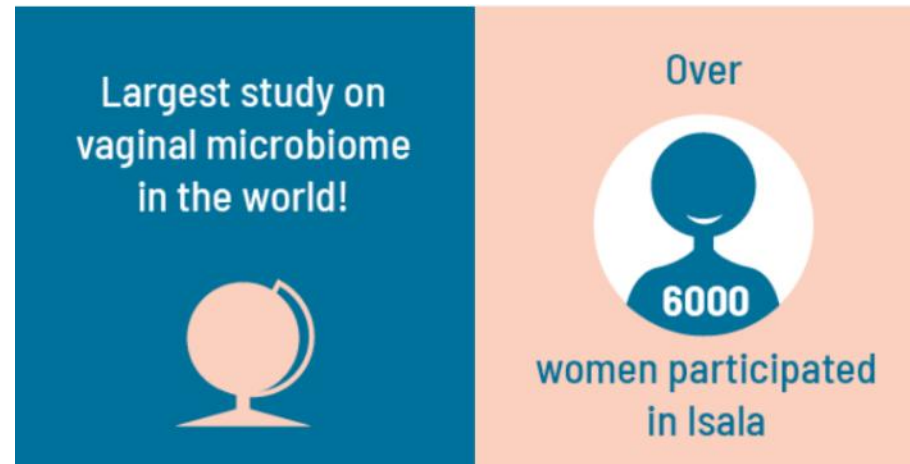
Behaviour

Evidence-based governance

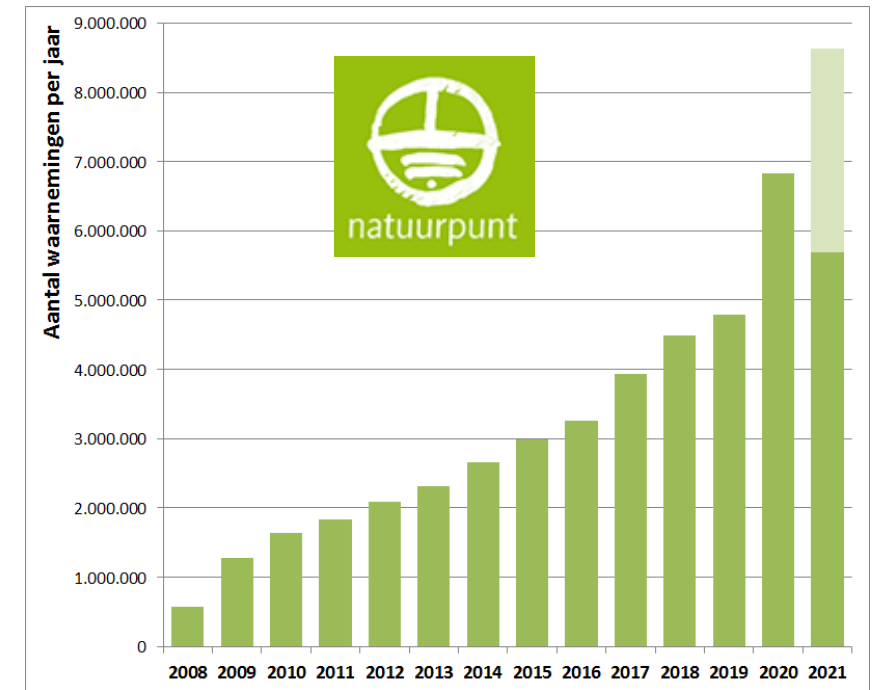


Time for some examples..
Your turn!

Large data sets



Isala.be – 6000 vaginal swabs crowdsourced and analysed



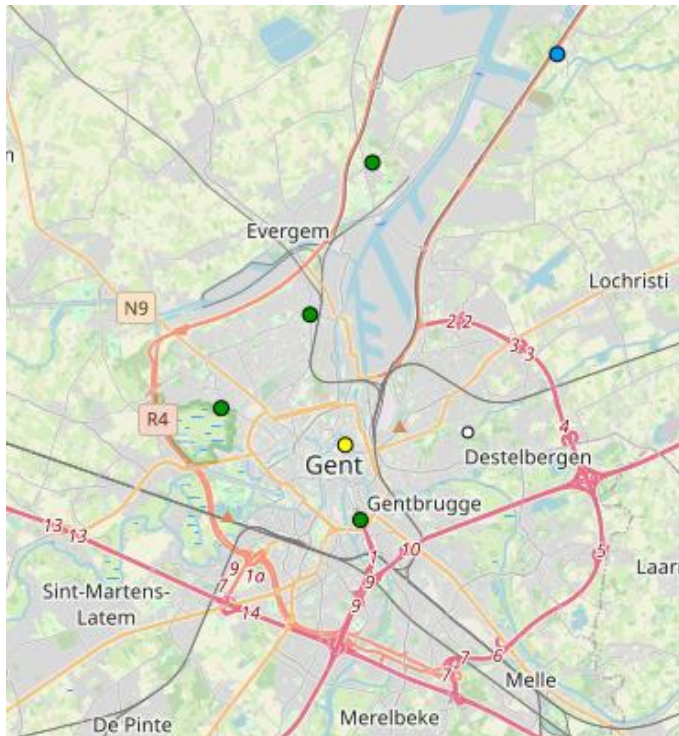
Waarnemingen.be – Natuurpunt:
+10 million observations in 2024



Straatpoezie.nl: 3325 poems

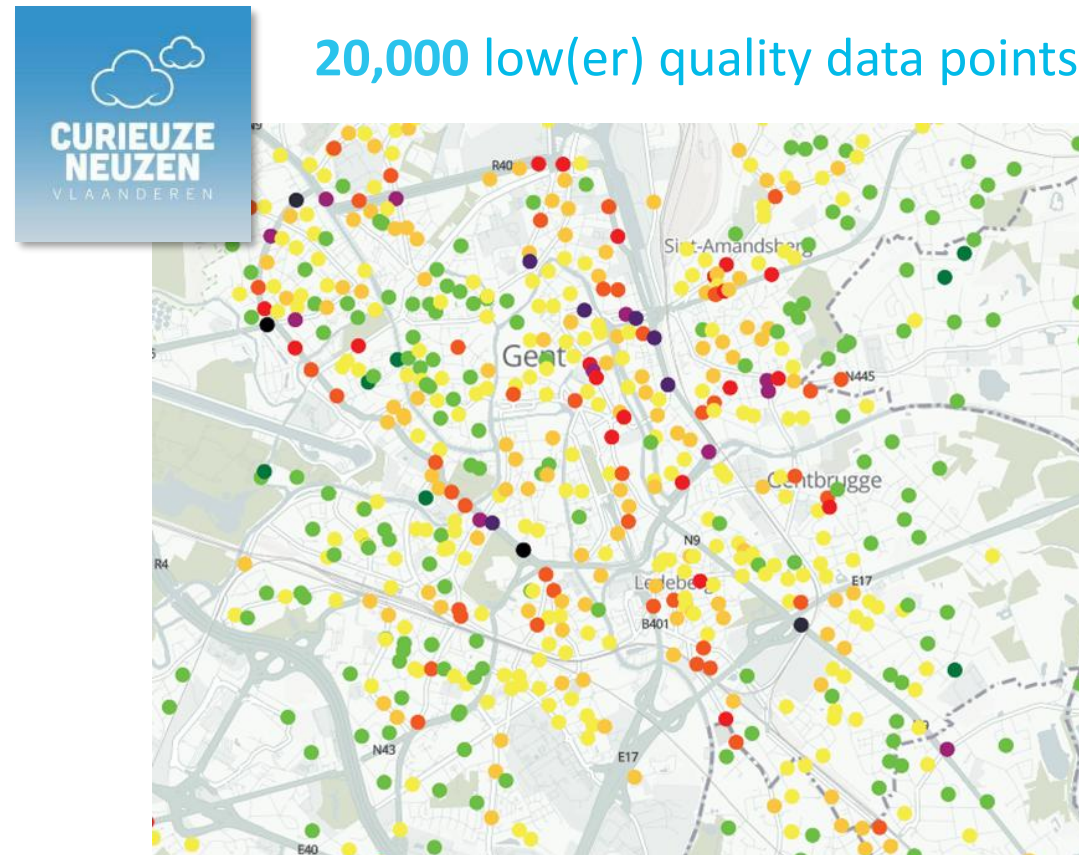
Increasing measuring density

56 High Quality data points



NO2 – annual average 2019 (ppmv) ©VMM

20,000 low(er) quality data points



NO2 – May 2018 (ppmv) ©CurieuzeNeuzen/DeStandaard



Square meter

Allowing research in new/private locations



SCivil

Mijn
Tuinlab.be



SPIDERSPOTTER
DISCOVER SPIDERS & THEIR WEBS



I am what I (don't) have

A participatory project to promote a resource-light lifestyle

Project Background:

Households are packed full of things. Many of these things, whether books, T-shirts, pens or old cell phones are primarily stored but hardly used. Many people feel this is a burden. And the consumption of resources is also problematic from a sustainability perspective. From a scientific perspective, the project serves to improve the understanding of the individual significance of goods as well as possibilities for reducing goods.

Project Objective:

The goal is to find out whether and to what extent measures to reflect on, document and reduce material possessions can contribute to living with fewer things in the long term. This means not only cleaning out in the short term, but also reducing one's own possessions in the long term and avoiding new purchases.

Intervention:

Phase 1: Project start
(Jan - March 2022)
- Registration
- Survey about the items
- Optional: exchange offered



Phase 2: Get started
(April - August 2022)
- Reflective exercises, documenting, cleaning out and sticking to it
- Exchange of experiences
- Second survey about the items
- Optional: exchange offered



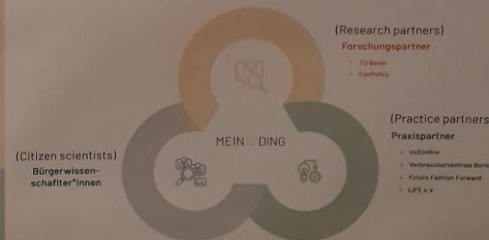
Phase 3: Collect and share
(October 2022 - March 2023)
- Motivate others to clean out and document the experience
- Final survey about the items
- Optional: exchange offered



Citizen Science:

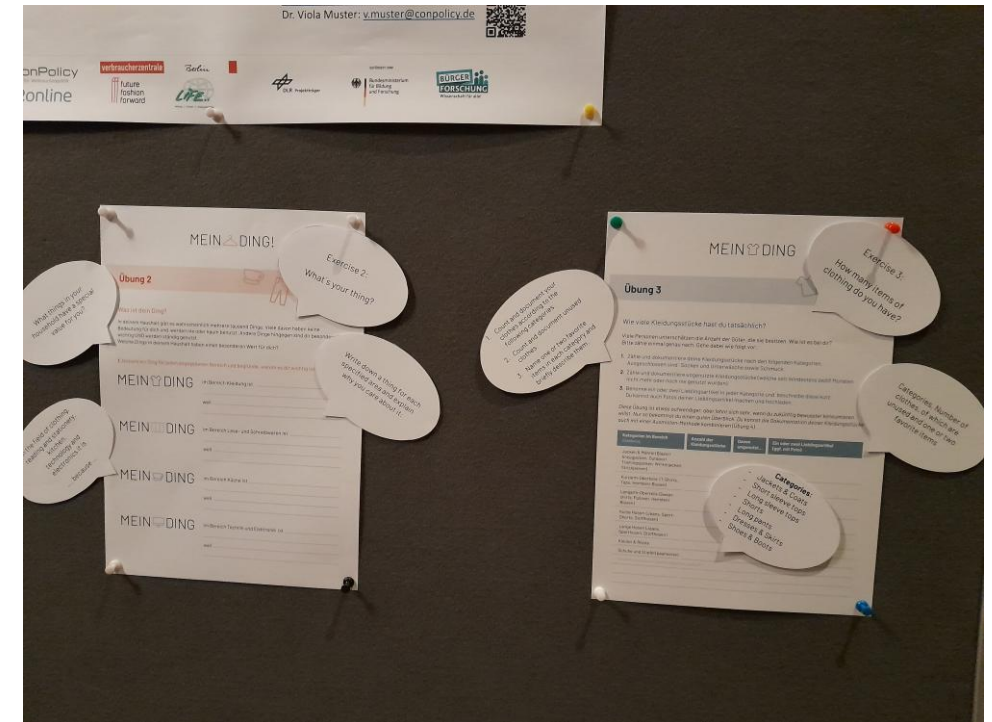
MeinDing! is a citizen science project. Citizen science means that citizens are involved in the project as researchers. Any person who has the time and desire to participate in a research project can be a citizen scientist. No prior knowledge or special skills are necessary. Depending on the project and topic, citizen scientists help develop the research design, conduct experiments or surveys, analyse data, or assist in publishing the results. This gives citizen scientists the opportunity to research exciting topics and issues with the support of a scientific team. This gives them an insight into the work of scientists.

Project team:



Information and Contact:

<https://www.projekt-meinding.de/>
Dr. Viola Muster: v.muster@conpolicy.de

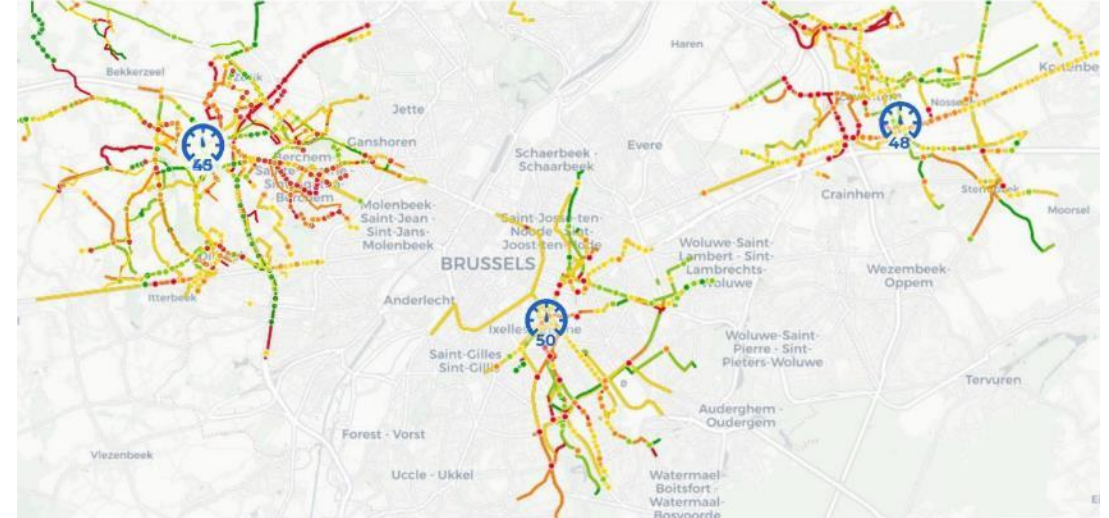


Citizen perspectives



VLinDER
finding and setting up sensor
locations with schools

Fietsbarometer (Bike barometer) (Perceived) traffic safety of young cyclists

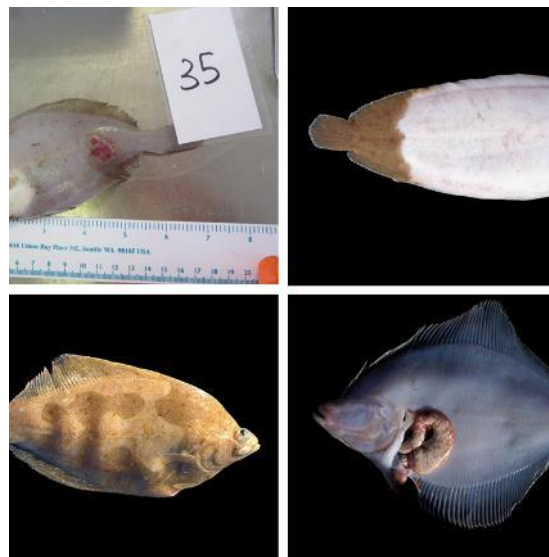


Age-friendly
Neighbourhoods
(Manchester, 2016)
Elderly Mancunians as
local livability experts
and interviewers





Vores historie
(Denmark, 2022)
Interviewing family
members about lived
history



Solefish diseases
(BE, 2018)
Fishermen search for
skin diseases in their
catch



Seawatch-B
(BE, 2015 - now)
Citizens as researchers
and ambassadors of
'their' beach

Citizen expertise

Transcribe or annotate data

Historical documents: SOSAntwerpen.be

**Radio Meteor Zoo**

Between December 28 and January 12, you can observe the Quadrantid meteor shower. The zenithal hourly rate (ZHR) of this shower can be as high as 100. However, because the shower is not seen as often as meteors in these other two showers, because the peak is not as high as the other two showers.

Help us identify meteor data

[Learn more](#) [Get started](#)

S.O.S. Antwerpen (1820-1946)

MA_74586_0016, S.O.S. Antwerpen - jaar 1942

Mijn profiel: Jef Van Laer | Uitloggen

Speciale tekens ☒ Helpteksten ☒ Scan meebewegen ☒ Andere schermindeling ☐

26 Januari	nieuwelijk kind	Verloven. Van Oel	24 Januari	dooftgeboren	7 maanden dracht	
"	Ma Leopoldine	Hofman	23	"	6 12 67	Broncho pneumonia
"	Victor Josephus	Post Poox.	23	"	31 7. 75.	Hartziekte.
"	Rachel.	Ganss.	23	"	4 5 62.	Neoplasma van de buarm
"	Maria Peltonella.	Dierckx.	23	"	2 11. 78.	Onderkomen.
"	Indonius.	Janssens.	24	"	4. 8. 72.	Hartdempingsziekte.

Volgnummer*

Datum registratie*

Voornamen*

Familienaam*

Datum overlijden*

Geboortedag*

Geboortemaand*

Geboortejahr*

Doodoorzaak*

Begraafplaats*

Begraafnisondernemer*

Dokter*

Aanmerkingen

Toelichting

1 person is talking about Radio Meteor Zoo right now.

[Join in](#)

Training AI with Astronomical data:
Zooniverse – Radio Meteor Zoo



Howard Hughes
Medical Institute

Published as: *Nature*. 2010 August 5; 466(7307): 756–760.



NIH Public Access Author Manuscript

Nat Struct Mol Biol. Author manuscript; available in PMC 2013 July 09.

Published in final edited form as:

Nat Struct Mol Biol. ; 18(10): 1175–1177. doi:10.1038/nsmb.2119.

Crystal structure of a monomeric retroviral protease solved by protein folding game players

Firas Khatib¹, Frank DiMaio¹, Foldit Contenders Group, Foldit Void Crushers Group, Seth Cooper², Maciej Kazmierczyk³, Mirosław Gilski^{3,4}, Szymon Krzywda³, Helena Zabranska⁵, Iva Pichova⁵, James Thompson¹, Zoran Popovi², Mariusz Jaskolski^{3,4}, and David Baker^{1,6}

Predicting protein structures

Seth Cooper¹, Firas Khatib², Adrien Tre
Beenen¹, Andrew Leaver-Fay^{2,4}, David B

¹Department of Computer Science & Engin

²Department of Biochemistry, University of

³Department of Computer Science, Carneg

Gamification:
playing, competition and
community

CS in big budget video games





Citizen science and education



Bugs 2
the
Rescue

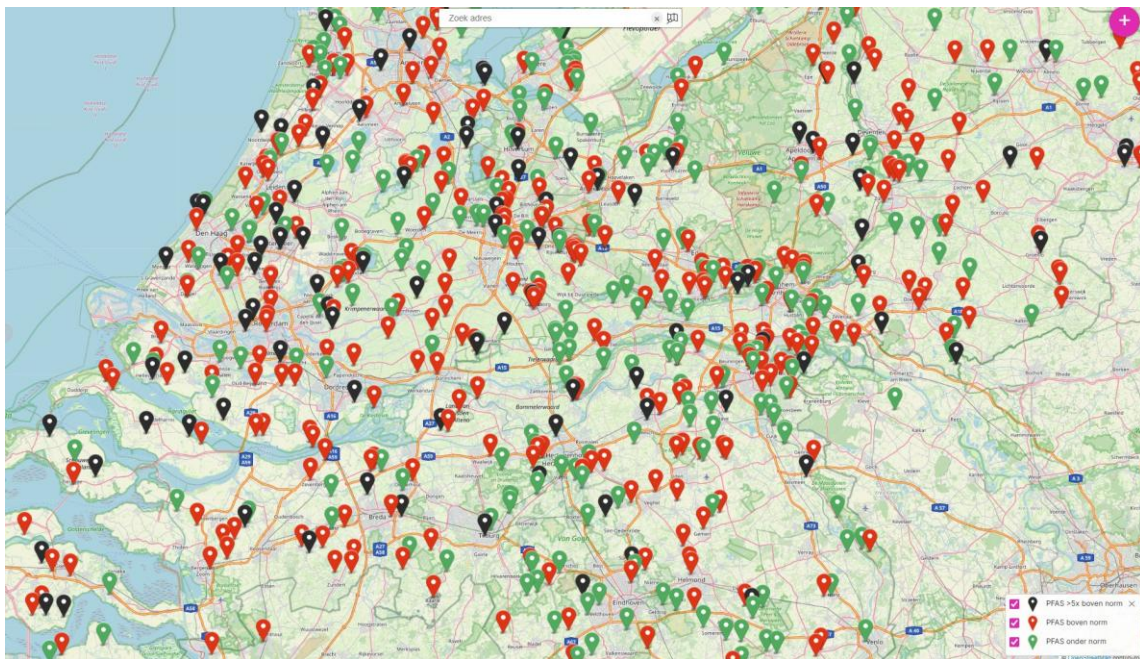
Addressing societal concerns



 **Telraam**
telraam.be



Joke Kenens, 2022.
<https://doi.org/10.5334/cstp.402>

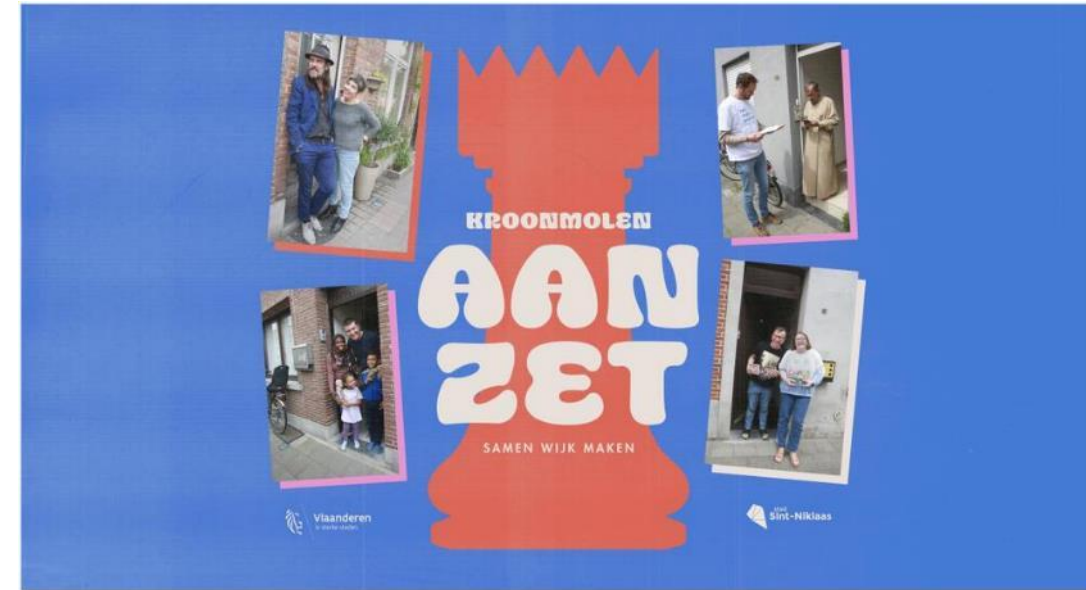


Pfas in Kaart (NL – 2025)

Buren Meten Hoogspanningslijnen (2026 – 2027)



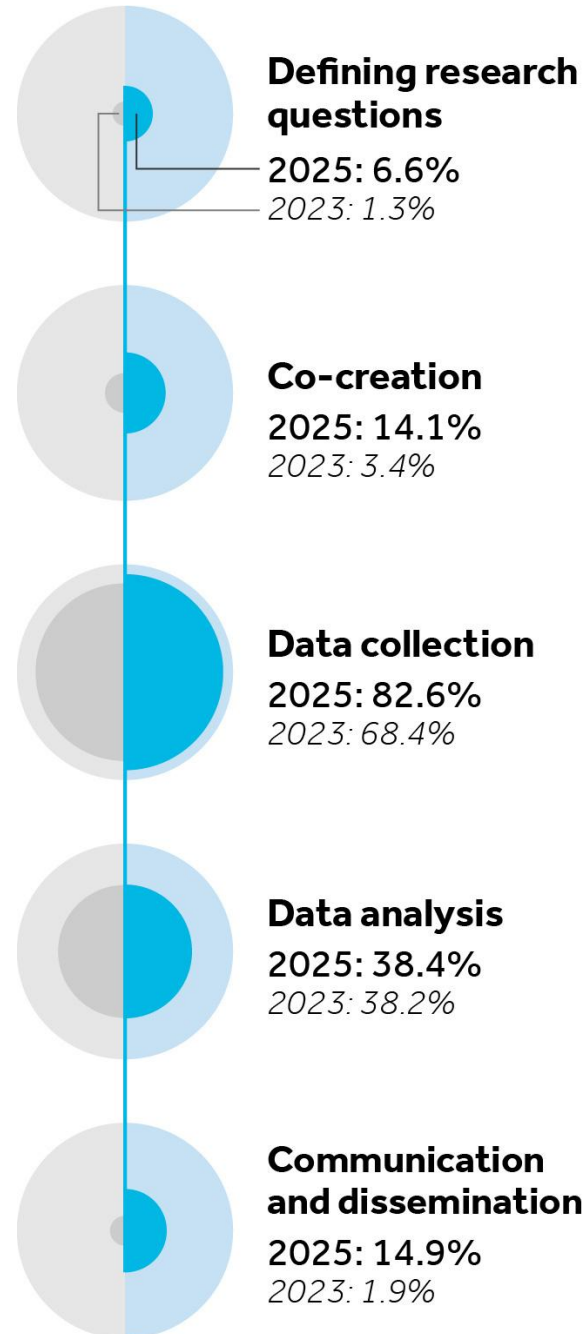
Building community



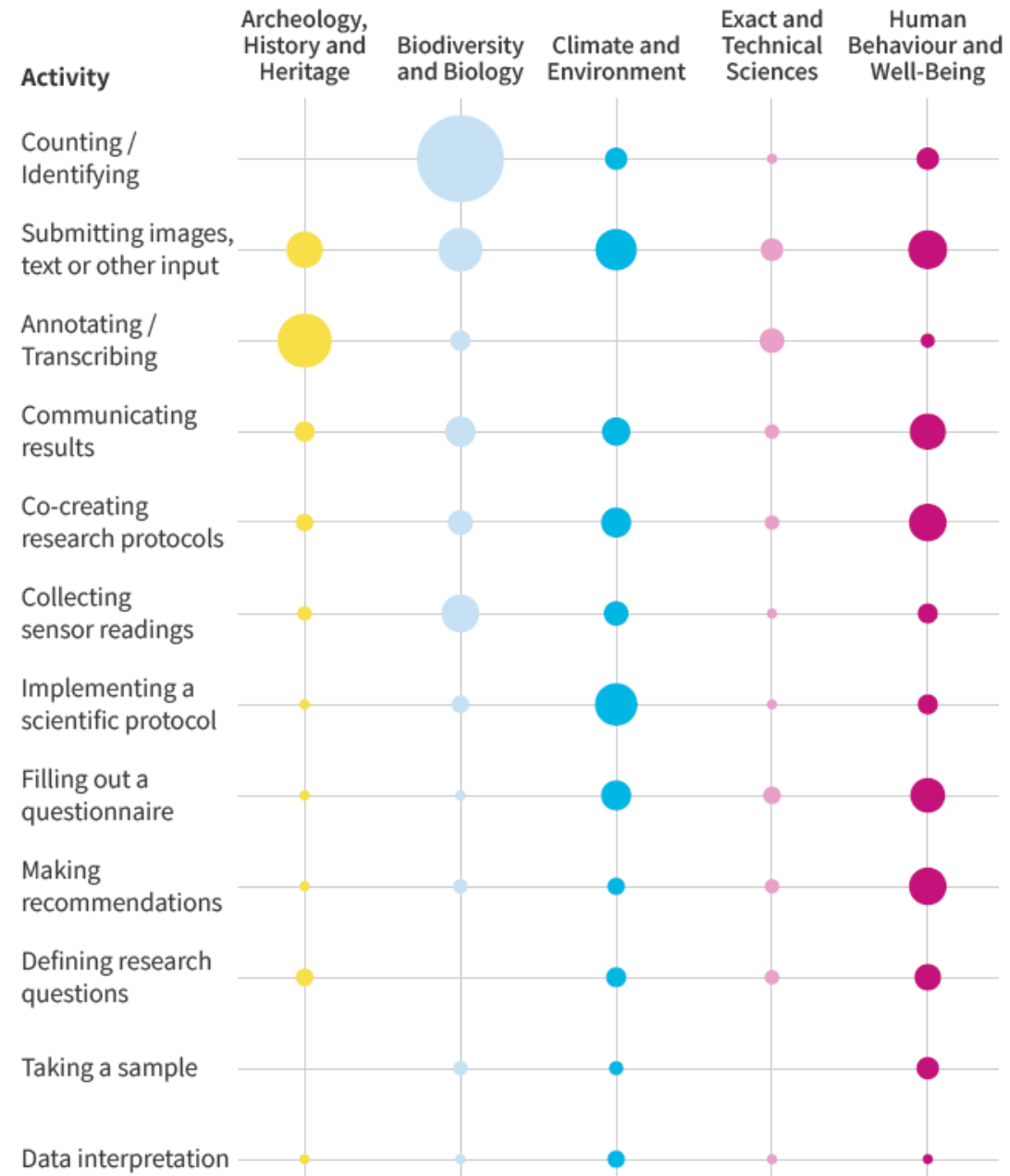
Kroonmolen aan zet –
Buurtbewoners nemen
welzijn in hun wijk
samen onder de loep.

Stiemerlab –
Buurtbewoners klitten
samen rond natuur,
wetenschap en kunst.

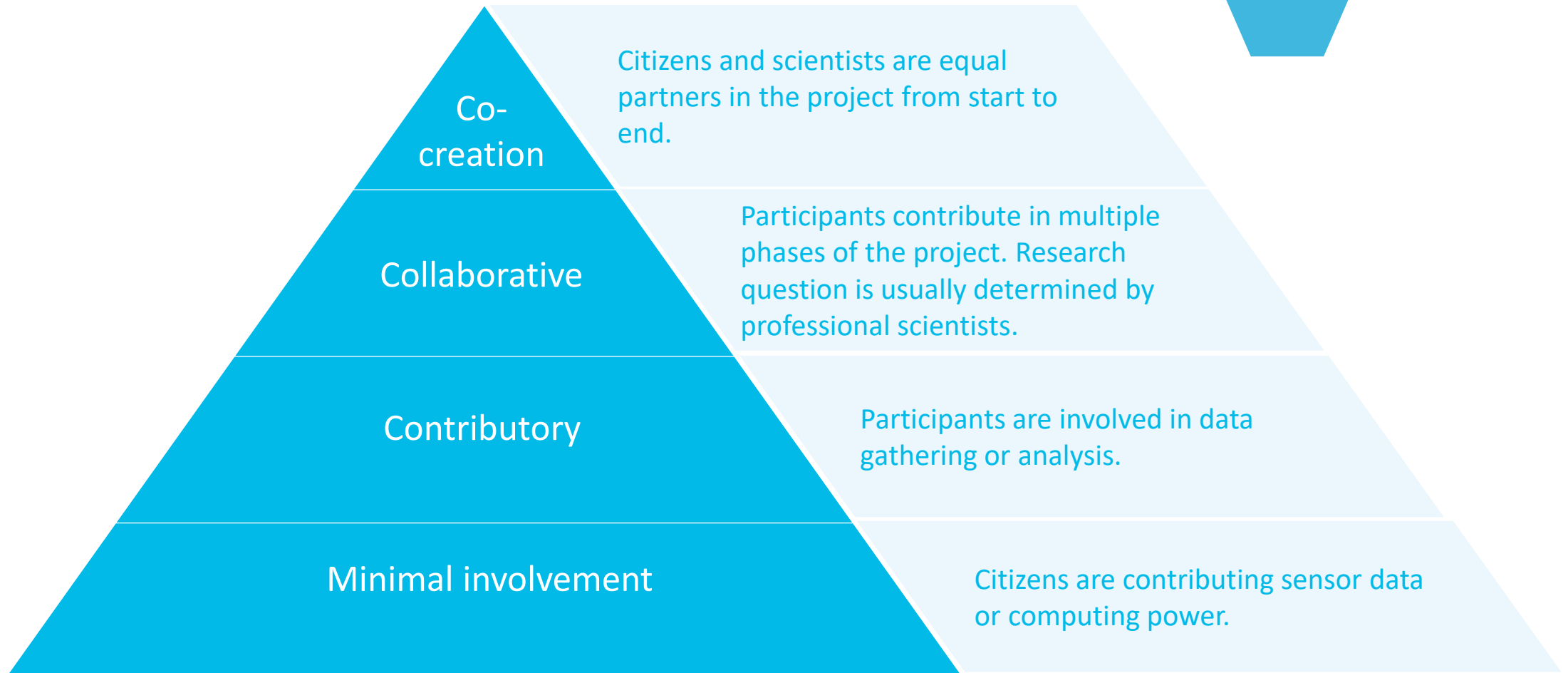
What do citizen scientists do?



What do citizen scientists do?



Participation pyramid





Participation slider



Many citizen scientists
Crowdsourcing

Few citizen scientists
Cocreation

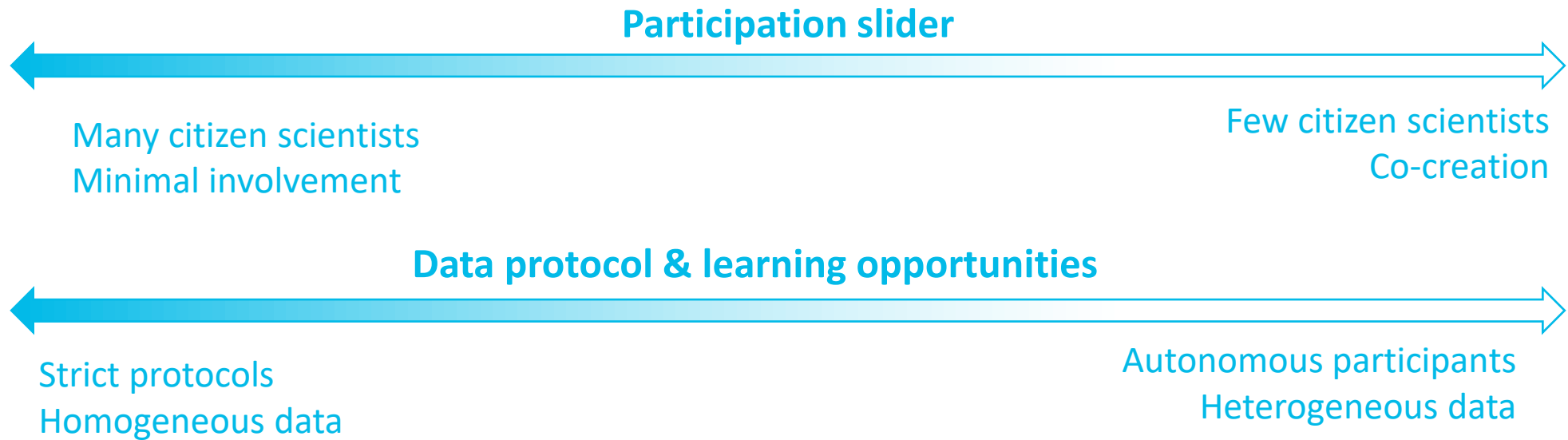
Authenticity

You don't have to choose citizen science

Does citizen science fit your goals?

No 'one size fits all'

No 'one size fits all'



Communication & engagement

Match communication (channels) to target audience

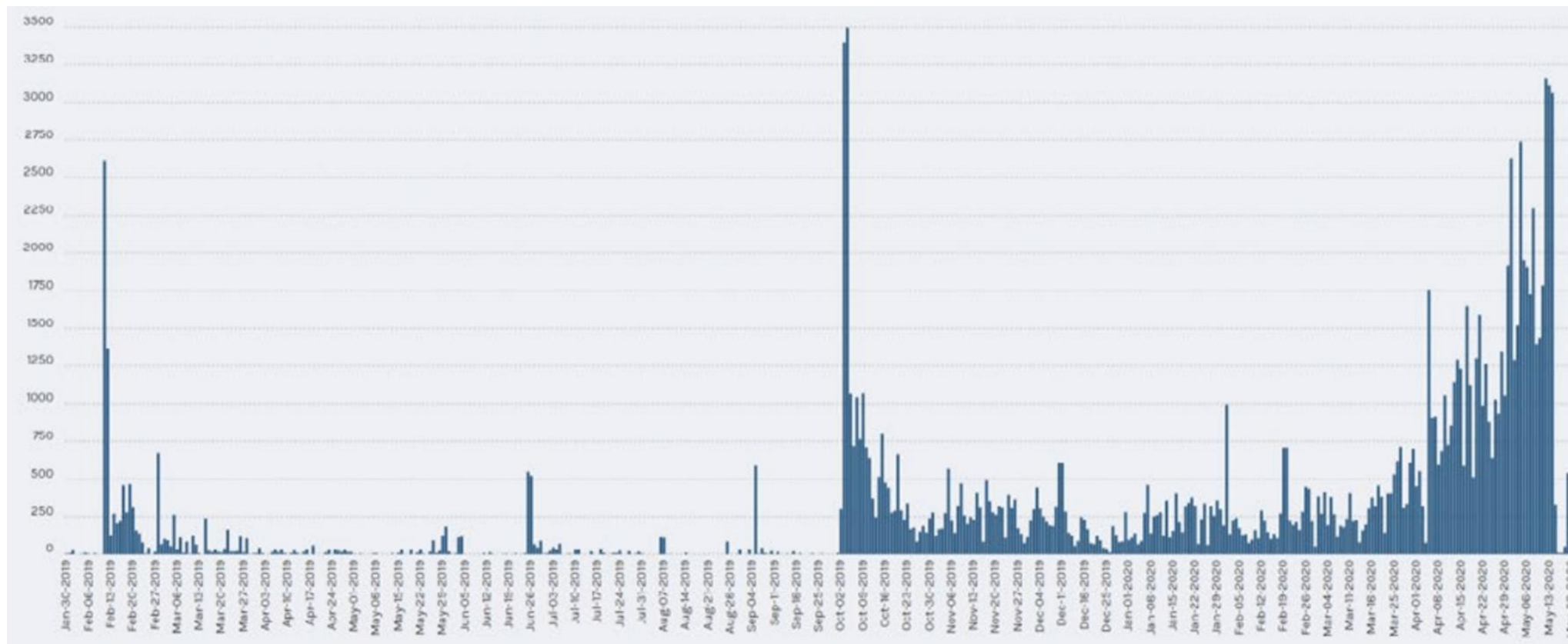
Drop-out of participants

Existing networks

Don't underestimate!

Annotated images at 'Eye for Diabetes'

Jan 2019 – May 2020



More tips and tricks?



Communication in citizen science



Data charter and guide for citizen science



Citizen science for local government



Citizen science in the classroom (only available in Dutch)



Library: tools and reading materials

Citizen Science Starter Kit

Online Citizen Science Training Materials

Deliverable 3.3 | V3 - October 2023
Carina Veeckman [VUB] | Lawrence Van den Bogaert [VUB] |
Floor Keersmaekers [VUB] | Karel Verbrugge [VUB] | Eline Livemont [VUB]

VUB ONDERZOEK RESEARCH
part of **RUG** European University

<https://zenodo.org/records/10119036>

Thema's

Over deze onderwerpen schreven we (nog) geen volledige gids. We verzamelden tips en leesmateriaal op de volgende pagina's.



What is citizen science?



Ethics and privacy



Sensors, platforms and apps



Evaluation



Aftercare



Valorise



Funding sources



Finding partners

<https://www.scivil.be/en/book/guides-and-manuals>



Keep in touch!

jef@scivil.be
info@scivil.be

Scivil
Citizen Science
Vlaanderen