MREŽA ZNANJA

Ljubljana, 14.–16. november 2023

Citizen Science and Open Science

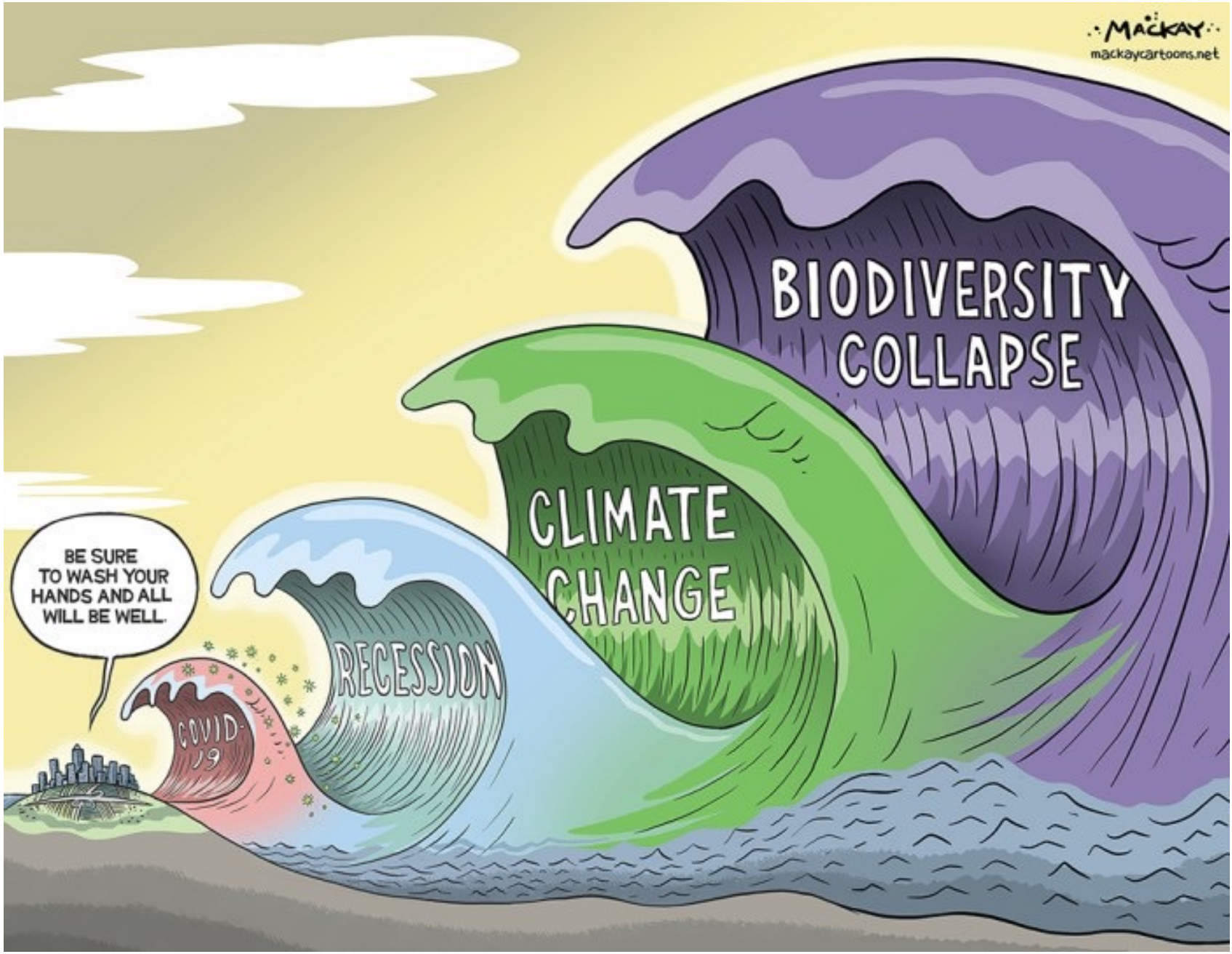
Four Waves of Movement from Global to Local

Margaret Gold, Leiden University

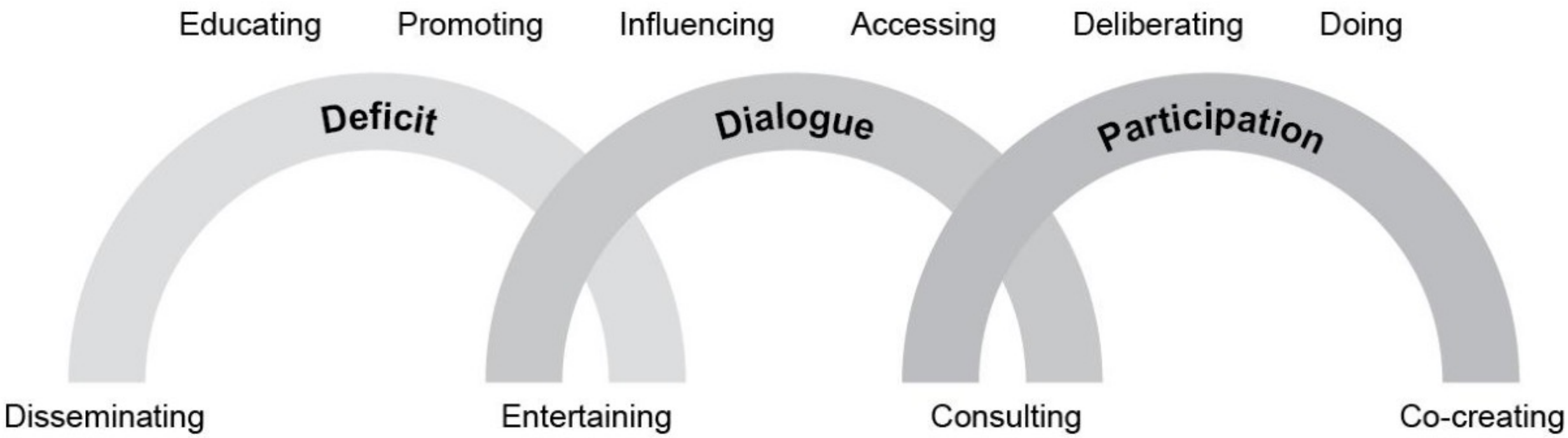
citizen science lab

- GLOBAL
- EUROPE
- NATIONAL
- LOCAL

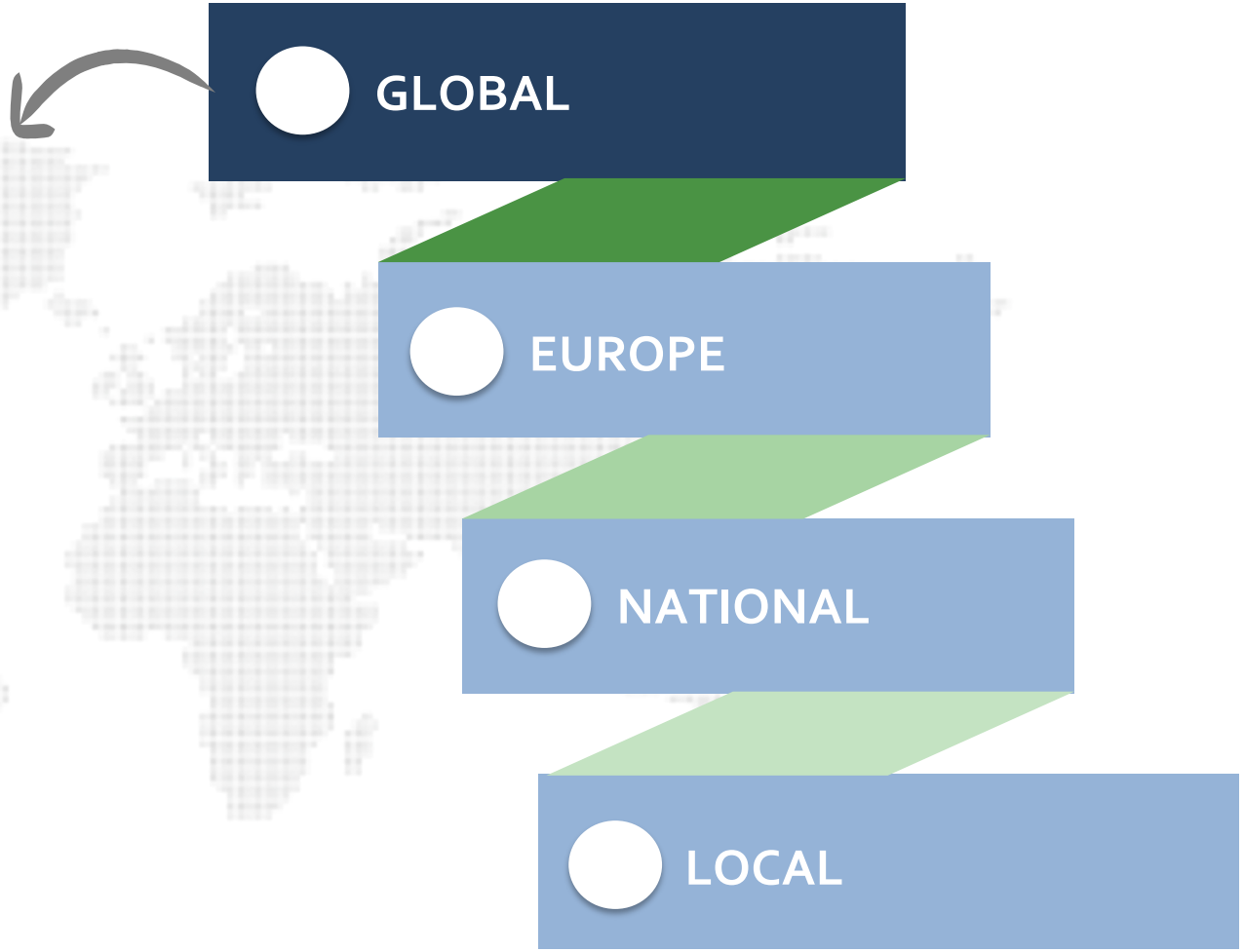
All Hands On Deck!



Discover – Participate - Research



- UNESCO Policy WG
- Citizen Science Global Partnership
- UNESCO OS & CS Community of Practice
- OECD Global Science Forum CS Task Force



United Nations
Educational, Scientific and
Cultural Organization

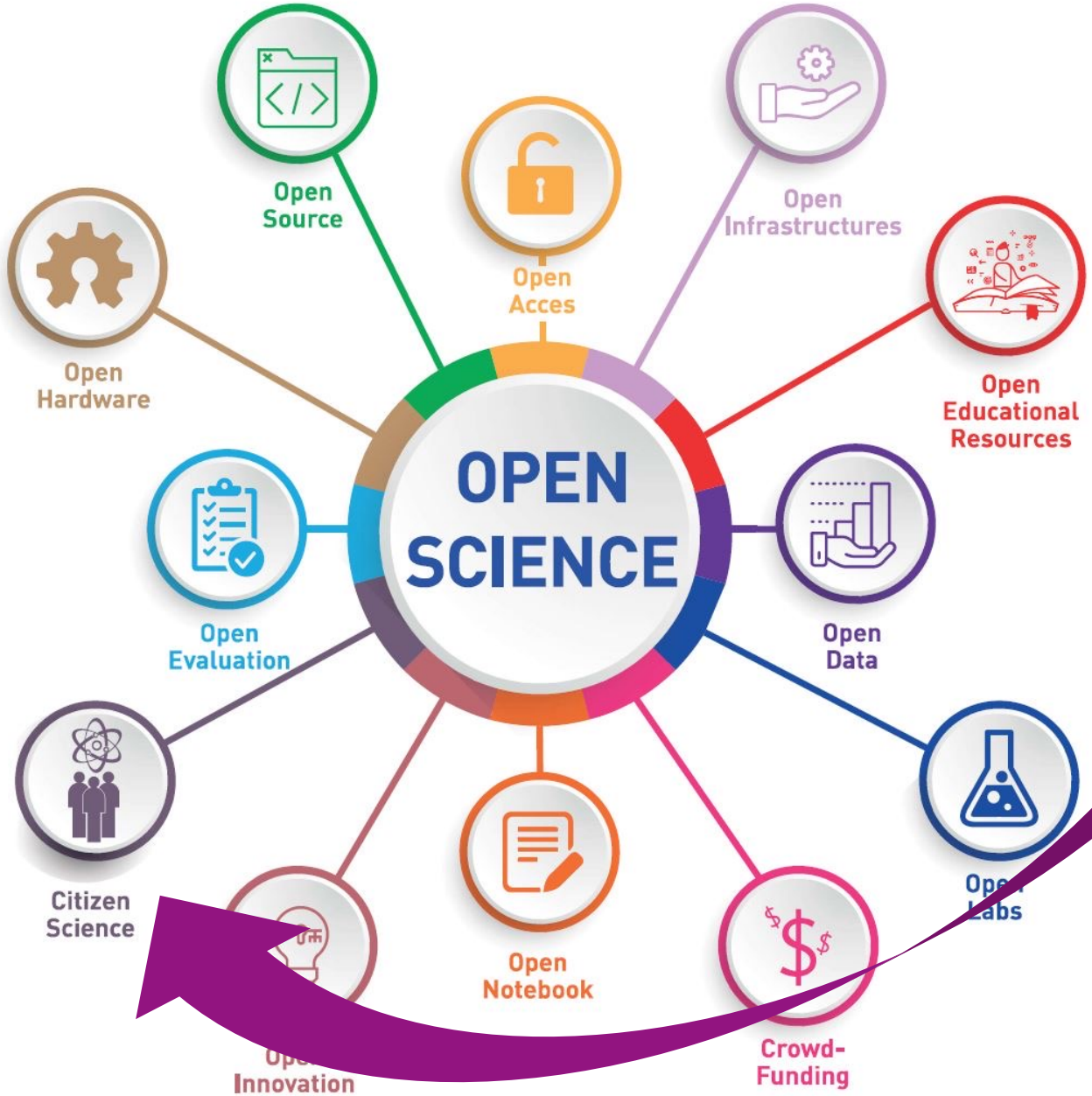
Open Science

UNESCO, 2021

citizen science lab

OPEN SCIENCE *is defined as an inclusive construct that combines various movements and practices aiming:*

- *To make multilingual scientific knowledge openly available, accessible and reusable for everyone,*
- *To increase scientific collaborations and sharing of information for the benefits of science and society, and*
- *To* ***open the processes of scientific knowledge creation, evaluation and communication***
- *To* ***societal actors beyond the traditional scientific community****.*
- *It builds on the following key pillars: open scientific knowledge, open science infrastructures, science communication,* ***open engagement of societal actors*** *and* ***open dialogue with other knowledge Systems***



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GLOBAL CITIZEN SCIENCE PARTNERSHIP

Supporting Partners

ADEC INNOVATIONS USA

Australian Citizen Science Association

BOKU

citizen cyberlab

CitizenScienceAsia

CITIZEN SCIENCE ASSOCIATION

CITIZEN SCIENCE CENTER ZURICH

ecsa

GLOBAL CEO ALLIANCE FOUNDATION GCEOA FOUNDATION

International Institute for Applied Systems Analysis IIASA www.iiasa.ac.at

PMMP

SMART AND SUSTAINABLE ACTION ASSOCIATION

UN environment programme

UNESCO

UNIVERSITÉ DE GENÈVE

Wilson Center

CITIZEN SCIENCE | GLOBAL PARTNERSHIP

citizenscienceglobal.org

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citizen science lab

November 25, 2022

Report Open Access

Guidance for the implementation of the UNESCO Open Science Recommendation re. "Opening science to society" (FINAL)

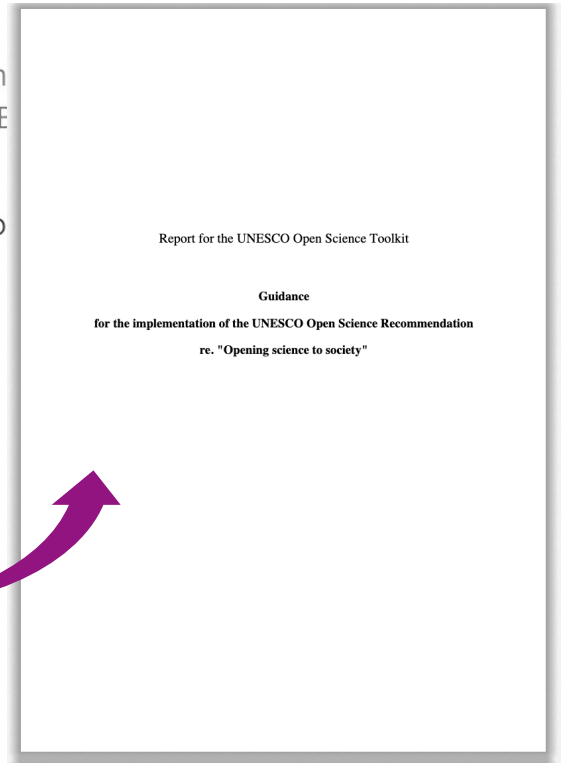
Wehn, Uta; Hepburn, Libby

Project member(s)

Hsing; Ajates; Kragh; Mandeville; Somerwill; Kiefer; Haklay; Gold; Koley; Hein da; Lehner; Morais; Per; Thakore; Gumiero; Alfaro-Ponce; Chandratreva; Roger; E p; Mendez; Michellier; Muniafu; Bonn

Guidance on successful approaches and mechanisms for embedding the o n) Science policy (Final version)

https://zenodo.org/record/7472827

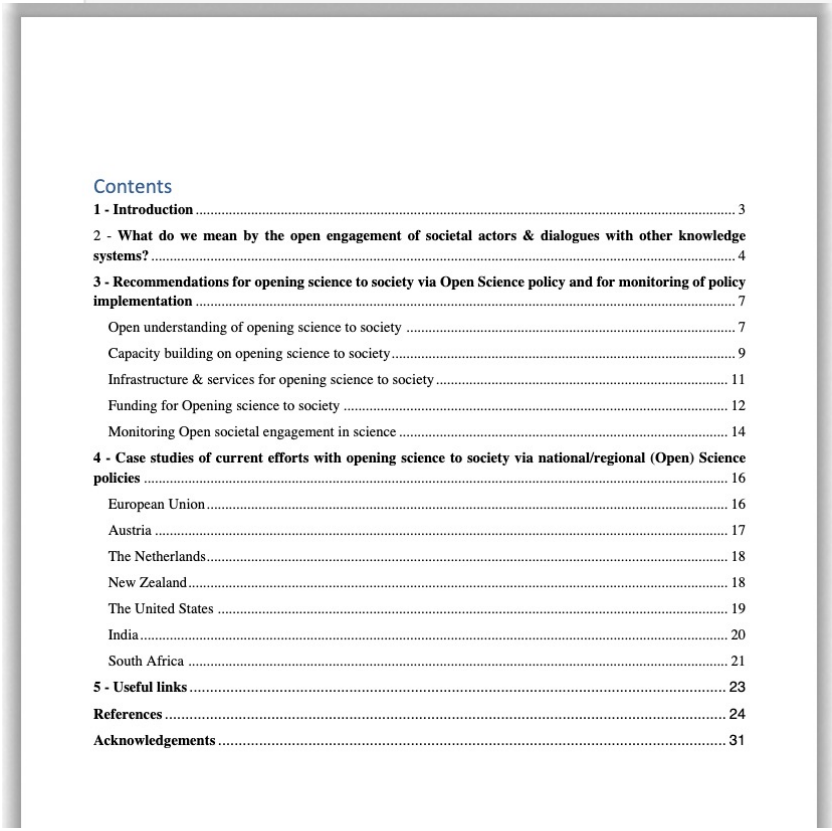


Report for the UNESCO Open Science Toolkit

Guidance

for the implementation of the UNESCO Open Science Recommendation

re. "Opening science to society"



Contents

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Table 2: Summary of recommendation for opening science to society via Open Science policy

Open understanding of opening science to society	Empower and engage societal actors through open engagement	• Go beyond facilitating public participation in scientific processes that are led top down • Foster transparent communication & long-term relationships with community partners • Ensure free and open access to educational content, enhance science and data literacy
	Ensure diversity, equity, inclusion, & justice in opening science to society	• Ensure engagement of and partnerships with marginalised communities • Support non-traditional venues for scientific activities and accessible communication • Ensure benefits of societal engagement reach all involved stakeholders
Capacity building on opening science to society	National & policy-maker levels	• Create enabling environment that cut across governance levels • Leverage existing resources • Foster multi-level and multi-stakeholder policy connections
	Institutional & individual level	• Foster capacity building and academic recognition within Higher Education Institutions • Foster societal engagement through (high) schools and life-long learning programmes • Support informal training initiatives
	Knowledge exchange opportunities	• Prioritise impact at scales from local to global • Support development of infrastructures for practitioners of open societal engagement • Ensure accessible resources
Infrastructure & services for opening science to society	• Develo e infrastructure for societal engagement • Incor Open Data sharing • Encour eusability and interoperability by developing standards that require input from societal actors • Suppo ttom-up development of infrastructure to allow societal actors to shape tools for engaging with science	
Funding for opening science to society	For wha	• Foster open societal engagement and dialogues with other knowledge systems • Mainstream societal engagement in all funding
	F whom	Financial support for a wide range of actors
	For how long	Funding models to focus on creating diverse, long term relationships & community building
	By whom	Collaboration between public and private funding agencies
	Fit-for-purpose instruments & evaluation	Specifically address quality criteria of good societal engagement & co-create fit-for-purpose funding & evaluation instruments

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November 25, 2022

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Knowledge Exchange

Mendez; Michellier; Muniafu; Bonn

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Wehn, Uta; Hepb

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Enabling Environment

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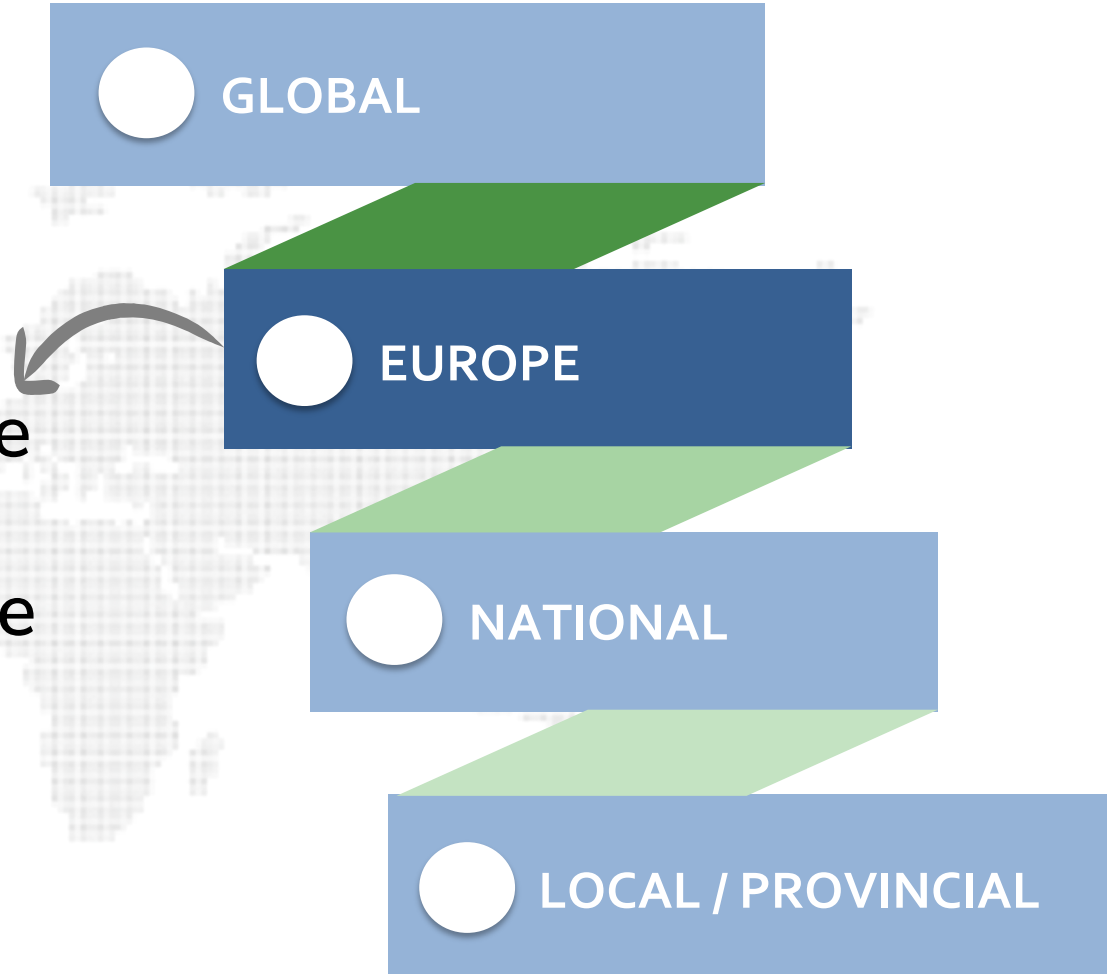
- EU-Citizen.Science / European Citizen Science
- Horizon Europe Criteria
- Mutual Learning Exercise



European Commission

CITIZEN SCIENCE
ELEVATING RESEARCH & INNOVATION THROUGH SOCIETAL ENGAGEMENT

Interaction between citizens, scientists and policy makers is essential to enrich research and innovation, and reinforce trust of society in science. I am proud of the hundreds of thousands involved citizens that already contributed to research and innovation and look forward to continue opening up research towards society and the world.

Mariya Gabriel *Commissioner for Innovation, Research, Culture, Education and Youth*

Citizen Science in the European R&I policy

Citizen Science (CS) is a core dimension of

the **Pact for R&I in Europe** that lists **societal responsibility** as a main principle and **active citizen and societal engagement in R&I** as a priority area for joint actions

the **open science policy** of the **European Commission,** embedded in the **new European Research Area (ERA)** policy agenda **to achieve greater societal impact and increased trust in science**

the Horizon Europe Programme, with the aim of deepening science-society relations and maximising the benefits of their interactions by ***engaging and involving all societal actors such as citizens and civil society organisations in co-designing and co-creating*** *responsible research and innovation agendas and contents,* ***promoting science education***, ***making scientific knowledge publicly accessible***, *and* ***facilitating participation by citizens and civil society organisations in its activities***"

European Commission

Citizen Engagement in HORIZON EUROPE

Open science, which includes citizen science and citizen/societal engagement, **is the *modus operandi* of the HE programme**

Co-design and co-creation, and **engagement of citizens and civil society organisations**, are **mainstreamed** across the programme, notably in the **Cluster** and **EU R&I Missions programmes**

EU R&I Missions: Portfolio of actions intended to achieve a set of goals within a given timeframe with impact for science and technology and civil society

Citizen and societal engagement is a key part of ***co-design, co-creation*** and ***co-assessment*** **activities** in the **EU R&I missions**

A number of **participatory instruments** are foreseen by the **Mission Implementation Plan**

HE workprogramme in 5 mission areas:

- **Adaptation to Climate Change**
- **Cancer**
- **Restore our Oceans and Waters by 2030**
- **100 Climate-Neutral and Smart Cities by 2030**
- **A Soil Deal for Europe**

European Commission

Mutual Learning Exercise on Citizen Science

Mutual learning exercises (MLE) focus on **specific R&I challenge** of interest to **MSs and ACs**

MLE on Citizen Science (CS) proposed from MSs to

- ✓ **strengthen their CS national policies and initiative** by exchanging lesson learnt and best practice
- ✓ exploit synergies and **upscale suitable (cross-) national CS initiatives** across the ERA

Exercise supported by EC Policy Support Facility and external experts

11 MSs/ACs: Germany, Slovenia, Austria, Belgium, France, Hungary, Portugal, Romania, Italy, Sweden and Norway

CS MLE Topics:

1. Introduction and overview on citizen science
2. Ensuring good practices and impacts
3. Maximising the relevance and excellence of citizen science
4. Enabling environments and sustaining citizen science
5. Scaling up citizen science

European Commission

I believe the work and reports of the MLE on Citizen Science come at a perfect conjuncture in European policy, where the national implementation of ERA Actions and the course setting towards FP10 meet the efforts towards a research assessment reform. Citizen Science stakeholders have now really valuable tools and knowledge to use this opportunity and establish Citizen Science at the centre of the debate in all three of those processes.

Michalis Tzatzanis
Participant from Austria

European Commission

Citizen Science initiatives

Policy and Practice

#HorizonEU

PSF CHALLENGE – MUTUAL LEARNING EXERCISE (MLE)

An increasing number of citizen science projects and initiatives are being implemented across Europe. This rapidly emerging mode of research and innovation shows substantial potential in terms of achieving greater societal impact and increasing trust in science, by leveraging collective societal capabilities, by enlarging the scope of the R&I, and by increasing relevance, responsiveness and transparency. The following topics of interest have been identified for the MLE:

- Topic 1: Introduction and overview on citizen science
- Topic 2: Ensuring good practices and impacts
- Topic 3: Maximising the relevance and excellence of citizen science
- Topic 4: Enabling environments and sustaining citizen science
- Topic 5: Scaling up citizen science

Visit the website for more information: https://ec.europa.eu/research-and-innovation/en/statistics/policy-support-facility

Participating countries: Austria, Belgium, France, Germany, Hungary, Italy, Norway, Portugal, Romania, Slovenia and Sweden.

Chair
Alan Irwin

Rapporteur
Margaret Gold (Rapporteur and Expert on Topic 4)

Independent Experts
Muki Haklay (Expert on Topic 1)
Rosa Arias (Expert on Topic 2)
Marzia Mazzonetto (Expert on Topic 3)
Antonella Radicchi (Expert on Topic 5)
Ingeborg Meijer (Support Rapporteur and Support Expert on Topic 4)

DG RTD Policy Officer
Annamaria Zonno
(Annamaria.ZONNO@ec.europa.eu)

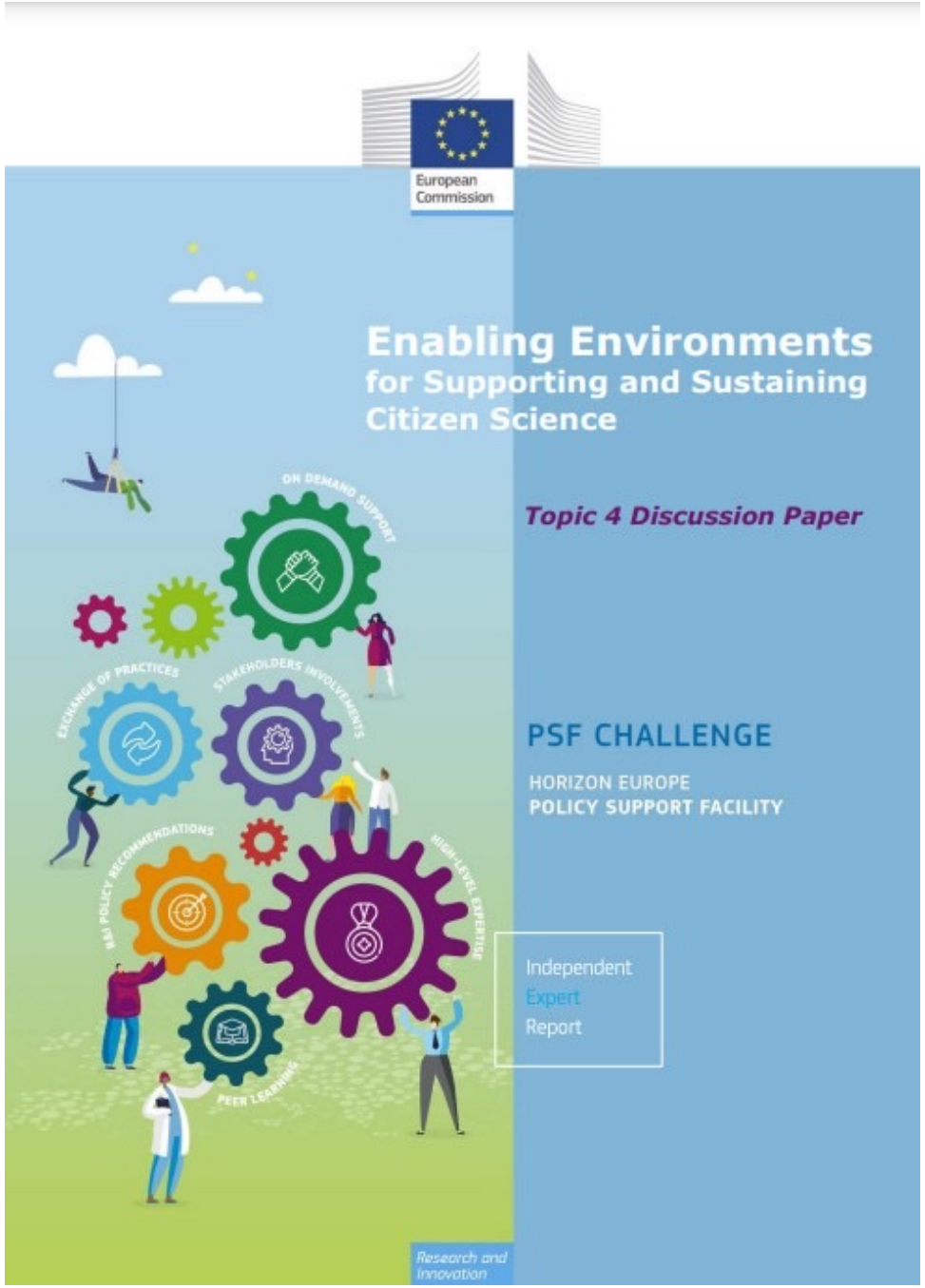
Scheduled meetings

January 2022 – Topic 1 meeting
March 2022 – Topic 2 meeting
June and September 2022 – Topic 4 meeting
October 2022 – Topic 3 meeting
November 2022 – Topic 5 meeting
December 2022 – Final Meeting
Early 2023 – Dissemination event

ISBN 978-92-76-53090-9, doi:10.2777/847700, KI-AX-22-007-EN-N

Research and Innovation

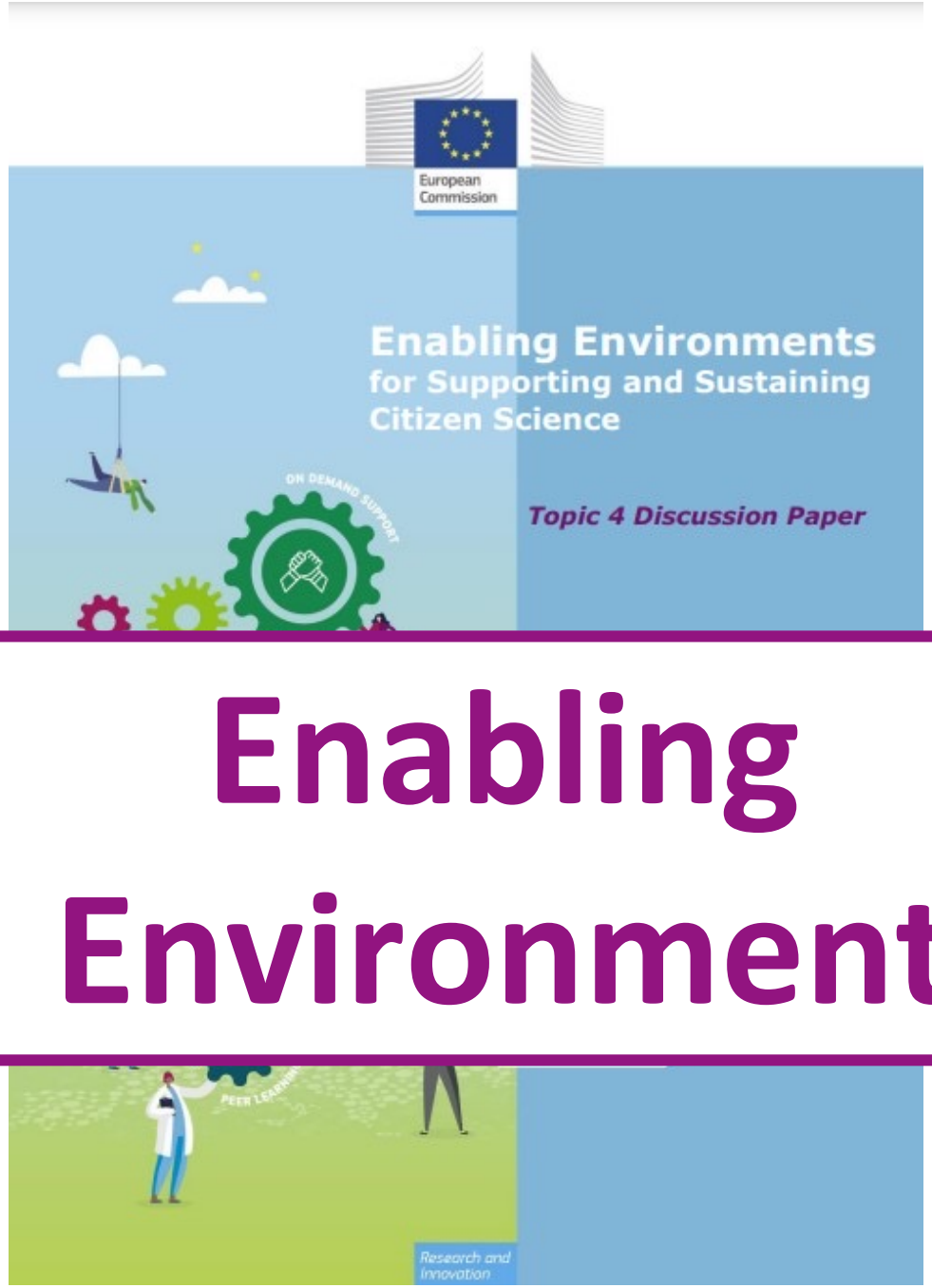
https://tinyurl.com/3xs986c6



Topic 4 - discussion paper:

Enabling Environments for Supporting and Sustaining citizen science

For Citizen Science to fully live up to its potential to achieve real societal impact as well as new scientific knowledge and insights, it is essential for Member States to put an enabling environment in place that will allow Citizen Science initiatives to be sustained and thrive, and Citizen Science practices to be supported and promoted.



Enabling Environment

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What is an Enabling Environment?

the factors that enable Citizen Science initiatives to be launched, sustained, grow and thrive – and ultimately achieve their aimed-for impacts and outcomes

Legal & Policy Frameworks

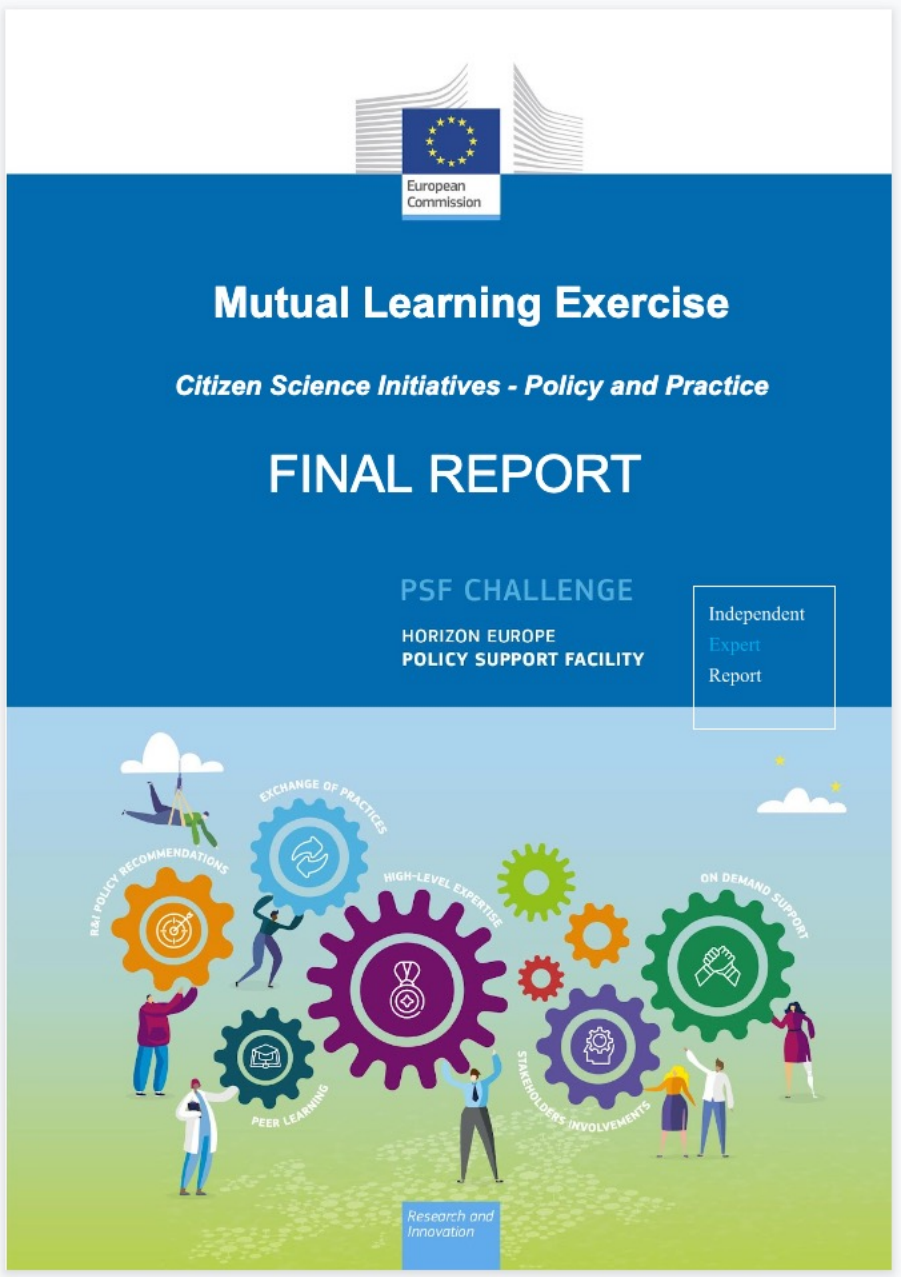
Internal Policies & Culture

Capacity Building & Networks

Supporting (Data) Infrastructure

Societal Dialogue

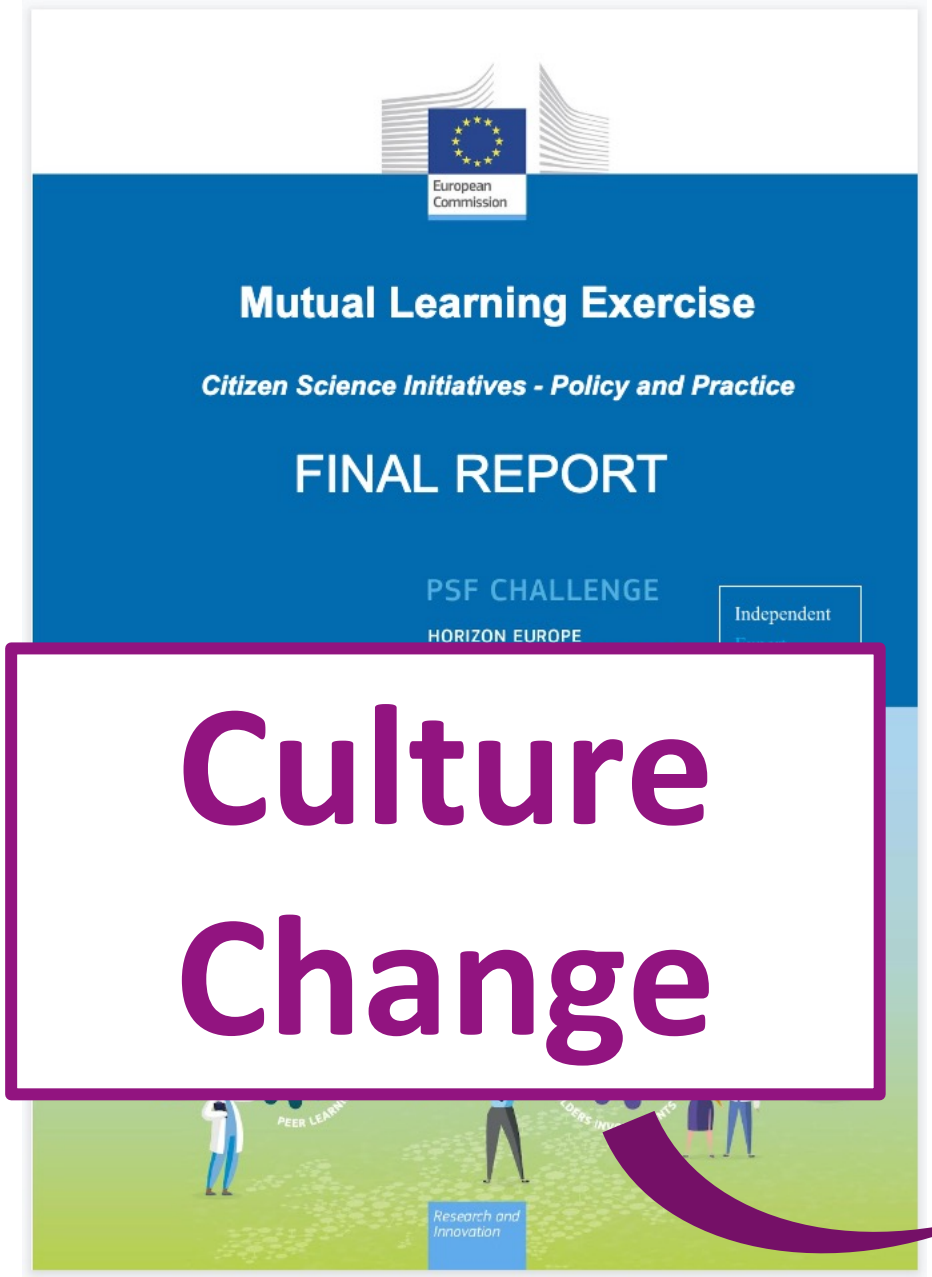
FUNDING



Of all of these recommendations for action, the four most impactful recommendations that have been supported across all of the thematic topics of the MLE are to:

1. Ensure that Citizen Science practitioners - in academia (top-down), in society (bottom-up), in policy (collaborative) and in the private sector (collaborative) - are supported by a **national network of practitioners** to share knowledge, form partnerships, and further develop best practice.
2. Ensure that **dedicated funding instruments** can provide financial support to the places where it is most needed (especially to societal partners) in order to enable new initiatives to get off the ground and to provide ongoing funding or scaling-up funding for successful initiatives. These instruments should allow sufficient flexibility for co-creational approaches to be implemented.
3. Enable the **culture change** required to open-up science and the scientific process more fully to the participation of citizens, societal actors, and civil society organisations for the benefit of research quality, policy impact, and improved societal welfare.
4. Enable the establishment and ongoing iterative development of key **supportive infrastructure** such as data-gathering tools and platforms, data analysis and visualisation tools, data hosting and archiving, and domain-specific research infrastructures.

https://tinyurl.com/MLEcsfinal



Culture Change

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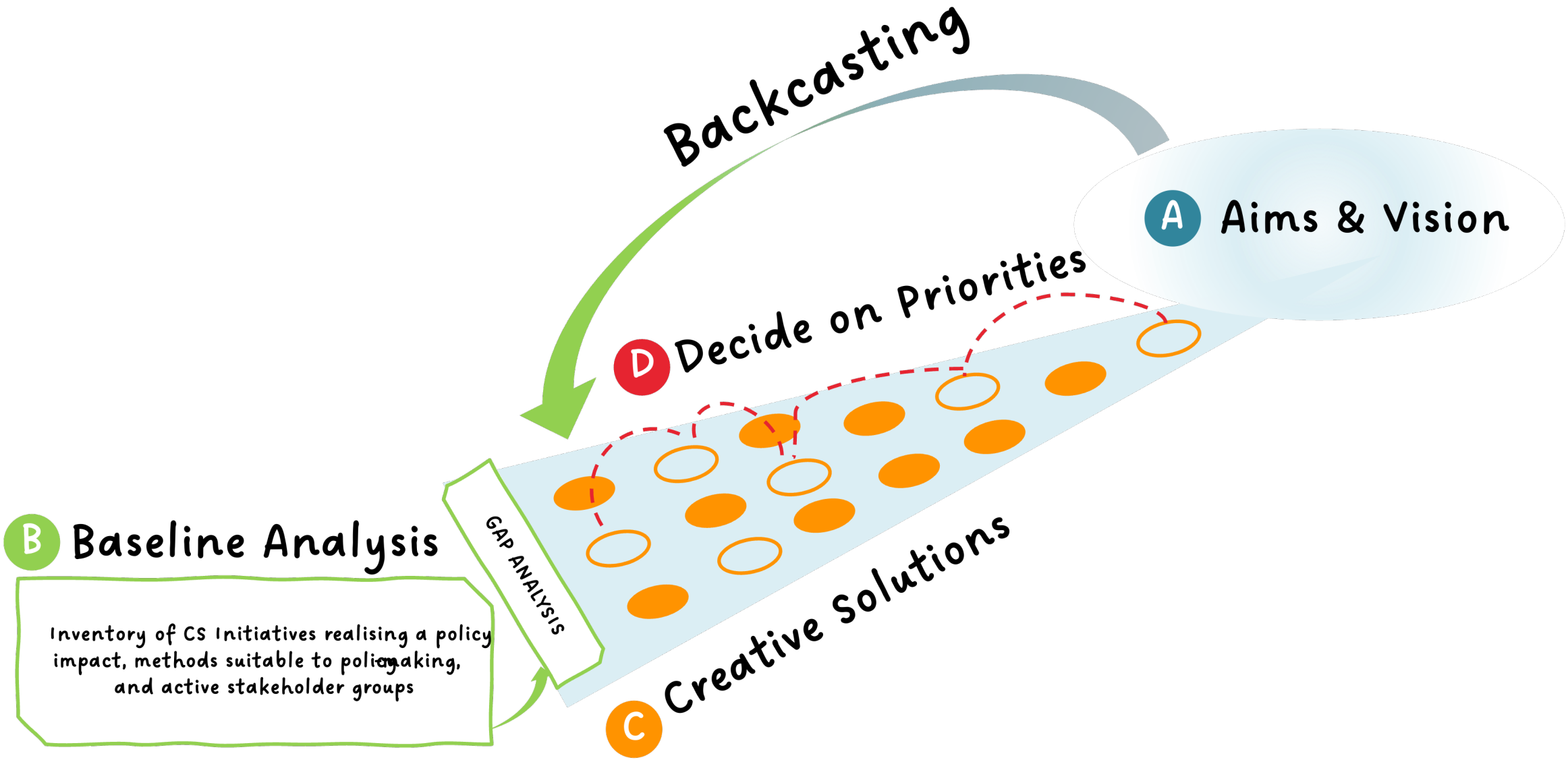
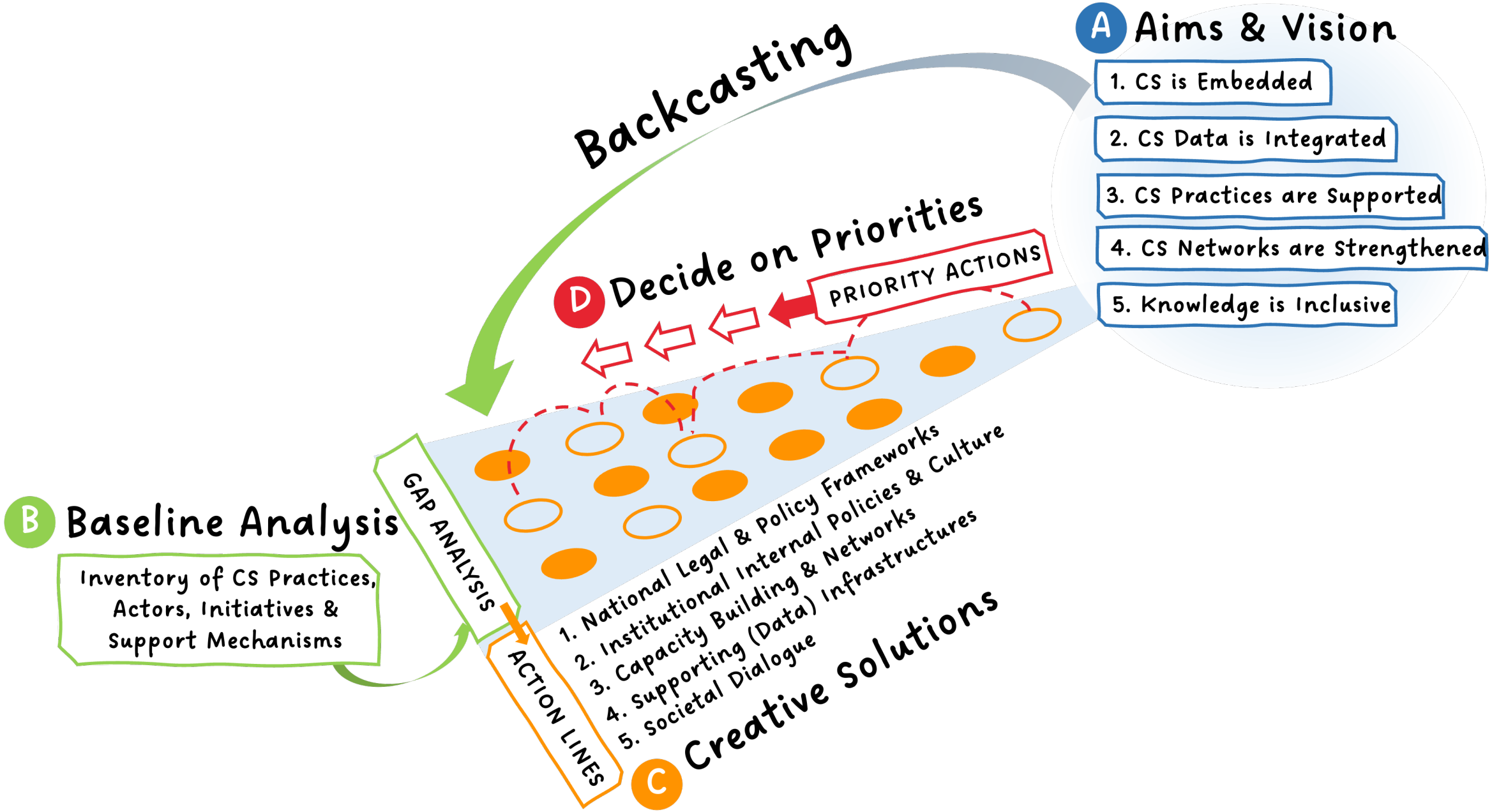

Backcasting
A Aims & Vision
D Decide on Priorities
B Baseline Analysis
Inventory of CS Initiatives realising a policy impact, methods suitable to policymaking, and active stakeholder groups
GAP ANALYSIS
C Creative Solutions


Backcasting
A Aims & Vision
1. CS is Embedded
2. CS Data is Integrated
3. CS Practices are Supported
4. CS Networks are Strengthened
5. Knowledge is Inclusive
D Decide on Priorities
PRIORITY ACTIONS
B Baseline Analysis
Inventory of CS Practices, Actors, Initiatives & Support Mechanisms
GAP ANALYSIS
ACTION LINES
1. National Legal & Policy Frameworks
2. Institutional Internal Policies & Culture
3. Capacity Building & Networks
4. Supporting (Data) Infrastructures
5. Societal Dialogue
C Creative Solutions

Networks

Legal & Policy Frameworks

Internal Policies & Culture

Capacity Building & Networks

Supporting (Data) Infrastructure

Societal Dialogue

FUNDING

ecsa | European Citizen Science Association

EUROPEAN CITIZEN SCIENCE ASSOCIATION

Ten principles of citizen science

...ible concept which can be adapted and applied within ...
...developed by the 'Sharing best practice and bu...
...led by the Natural History Mus...
...key principles wh...

EUROPEAN CITIZEN SCIENCE ASSOCIATION

Dieci principi di Citizen Science

...concetto flessibile, che può essere adattato ...
...riportate in questo documento ...
...apacity' (C...

EUROPEAN CITIZEN SCIENCE ASSOCIATION

Dix principes de sciences participatives

...patives sont un concept flexible qui peut être adapté et appliqué dans de nombreuses ...nes. Les déclarations ci dessous ont été développées par le groupe de travail «Echanger ...s et renforcer les capacités » de l'European Citizen Science Association, mené par le ...Naturelle de Londres, avec la contribution de nombreux membres de l'Association, afin ...nous considérons, en tant que communauté, comme sous-tendant les bonnes ... Grégoire Loïs, Gérald ...

EUROPEAN CITIZEN SCIENCE ASSOCIATION

Zehn Prinzipien von Citizen Science – Bürgerwissenscha

Citizen Science – Bürgerwissenschaft – ist ein flexibler Ansatz, welcher ... Disziplinen angepasst werden kann. Die hier aufgeführten Prin... von Praxiserfahrungen und Kapazitätenentwick...
...muse...

EUROPEAN CITIZEN SCIENCE ASSOCIATION

Dez princípios da ciência cidadã

...nível que pode ser adaptado e aplicado ... ...umento foram desenvolvidas ... melhores práticas ...

EUROPEAN CITIZEN SCIENCE ASSOCIATION

Deu principis de ciència ciutadana

...és un concepte flexible que es pot adaptar i aplicar ...

EUROPEAN CITIZEN SCIENCE ASSOCIATION

Diez principios de ciencia ciudadana

La ciencia ciudadana es un concepto flexible que se puede adaptar y aplicar a div... disciplinas. Las declaraciones que se presentan en este documento han sido desarrolla... la **Asociación Europea de Ciencia Ciudadana (ECSA)** 'Sharing best practice a... prácticas y desarrollando capacidades), dirigido por el Museo de... muchos miembros de esta Asociación. La idea princip... creemos que subyacen a las buenas... Oltra, miembro de la E...

EUROPEAN CITIZEN SCIENCE ASSOCIATION

Ti principper for Citizen Science - Borgervidenskab

Citizen science – på dansk borgervidenskab – er et fleksibelt begreb, der kan tilp... forskellige situationer og indenfor mange forskellige discipliner. Neden... arbejdsgruppen 'Deling af bedst praksis og kapacitetsop... Borgervidenskab (European Citizen Science Associ... Naturhistoriske Museum med input fra m... af nøgleprincipperne, vi som f...

EUROPEAN CITIZEN SCIENCE ASSOCIATION

Deset principů občanské vědy

...nejvýznějších situa...

eu-citizen.science

Welcome to the platform for sharing citizen science projects, resources, tools, training and much more

Search...

Projects Resources Training Organisations Platforms Users Our Gold Star Selection

join the community
and participate

EU-Citizen.Science

The platform for sharing knowledge, tools, training and resources

Join the community of people interested in citizen science, to share tools and resources, projecto know-how and project examples for new and experienced pratitioners alike!

PROJECTS

Browse and search for **citizen science projects across Europe**, representing a wide range of fields, stages of research, and types of tasks.

Share your own citizen science projects, get in touch with other project managers, and collaborate on new initiatives.

RESOURCES

Browse and search for a wide range of **resources that are useful** in various stages of planning and running citizen science projects.

Share your own resources with the community – such as tools, guidelines, policy briefs, training resources, publications, and more.

FORUMS

Have a question?

The community discussion forums that will go live with the second release of the platform (summer of 2020) will enable the community to share citizen science tips, experiences and results with each other, answer questions, and start new collaborations.

OUR PLATFORM SEARCH ENGINE

search for citizen projects, resources, tools, training and more...

search

Search for citizen science projects **by title or keywords, or browse by country, activity status, or topic of research** - such as biology, education, or physics.

Search for citizen science resources by title or keyword, or browse **by language, resource type, or theme** - such as engagement, communication, or data quality.

BY THE COMMUNITY, FOR THE COMMUNITY

Our mission is to become the **central reference point for anyone setting up or running a citizen science project** - such as practitioners, researchers, educators, communities and citizens – all sharing their know-how and experience.

It doesn't matter if you have years of experience or are completely new to citizen science. Come showcase your projects, share your best

Help us **strengthen the knowledge base for citizen science** approaches across all domains of science, and further encourage the **democratization of science in Europe.**

Are you involved in a citizen science project? Join eu-citizen.science now.

Visit http://eu-citizen.science

MEET THE TEAM

The overall objective of ECS is to widen and strengthen the European Citizen Science community through capacity building and awareness raising activities such as the creation of a European Citizen Science Academy and the establishment of a network of 28 ECS Ambassadors. ECS will capitalise on EU-funded actions such as the EU-Citizen.Science platform and Cos4Cloud to support links and collaboration between members of the European Citizen Science community, who will be involved in the co-design and co-creation of a large variety of services, strategic priorities, training opportunities and policy recommendations. A key focus is on inclusivity, which will be achieved through dedicated actions such as engaging libraries affiliated to the Public Libraries 2030 network to attract underrepresented publics, as well as ad-hoc support to countries/regions lacking citizen science networks, platforms and policy recognition. ECS will create extensive capacity building opportunities by engaging in particular excellent researchers in a variety of disciplines, for example through the involvement of the Marie Curie Alumni Association, and emerging Horizon Europe Missions, Clusters, and wider ERA activities, to allow easy access for newcomers in citizen science activities.

ecs european citizen science

Capacity Building

The overall obj community through capacity building and awareness raising activities such a nment of a network of 28 ECS Ambassadors. ECS will capitalise on EU d to support links and collaboration between members of the European Citiz ation of a large variety of services, strategic priorities, training opport will be achieved through dedicated actions such as engaging libraries affiliated to the Public Libraries 2030 network to attract underrepresented publics, as well as ad-hoc support to countries/regions lacking citizen science networks, platforms and policy recognition. ECS will create extensive capacity building opportunities by engaging in particular excellent researchers in a variety of disciplines, for example through the involvement of the Marie Curie Alumni Association, and emerging Horizon Europe Missions, Clusters, and wider ERA activities, to allow easy access for newcomers in citizen science activities.

ecs european citizen science

Ambassadors

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ecs european citizen science

Public Libraries

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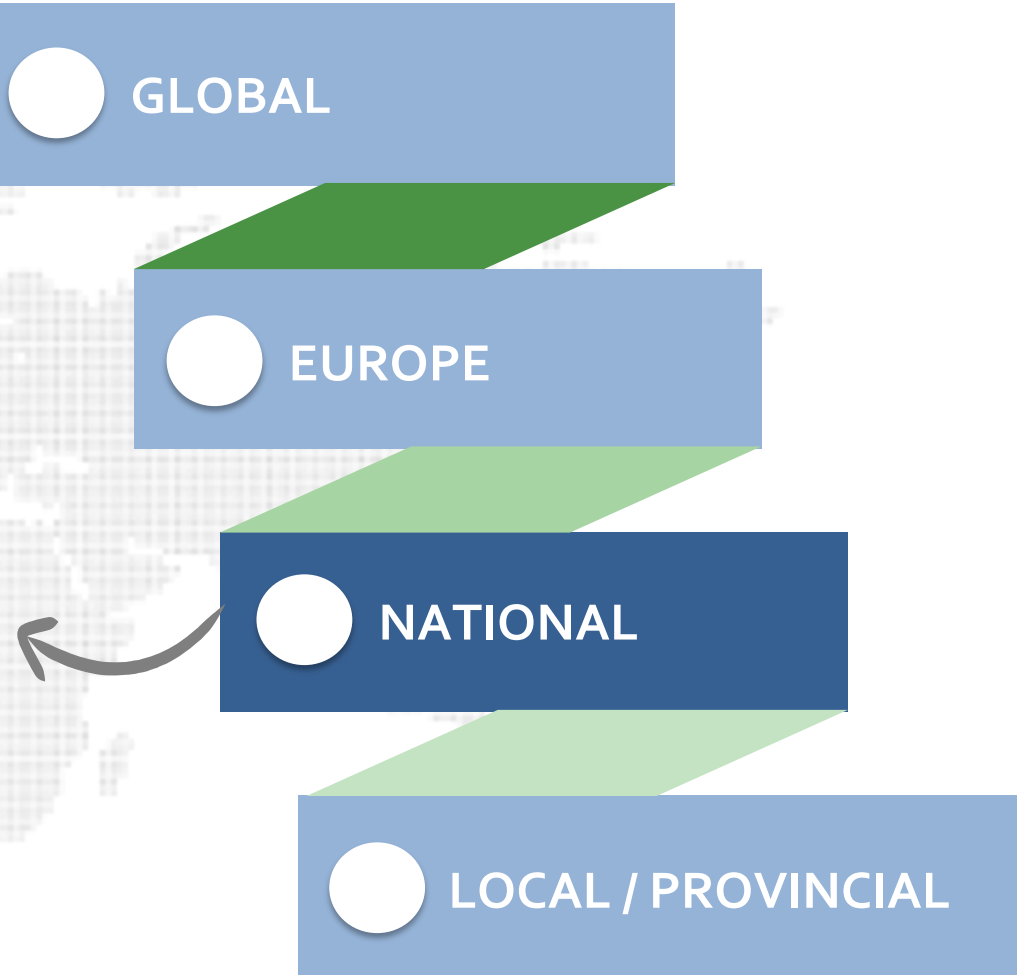
- NPOS – National Programme Open Science
- CS-NL – Citizen Science Nederland
- Rewards & Recognition Movement



The Netherlands National Programme Open Science

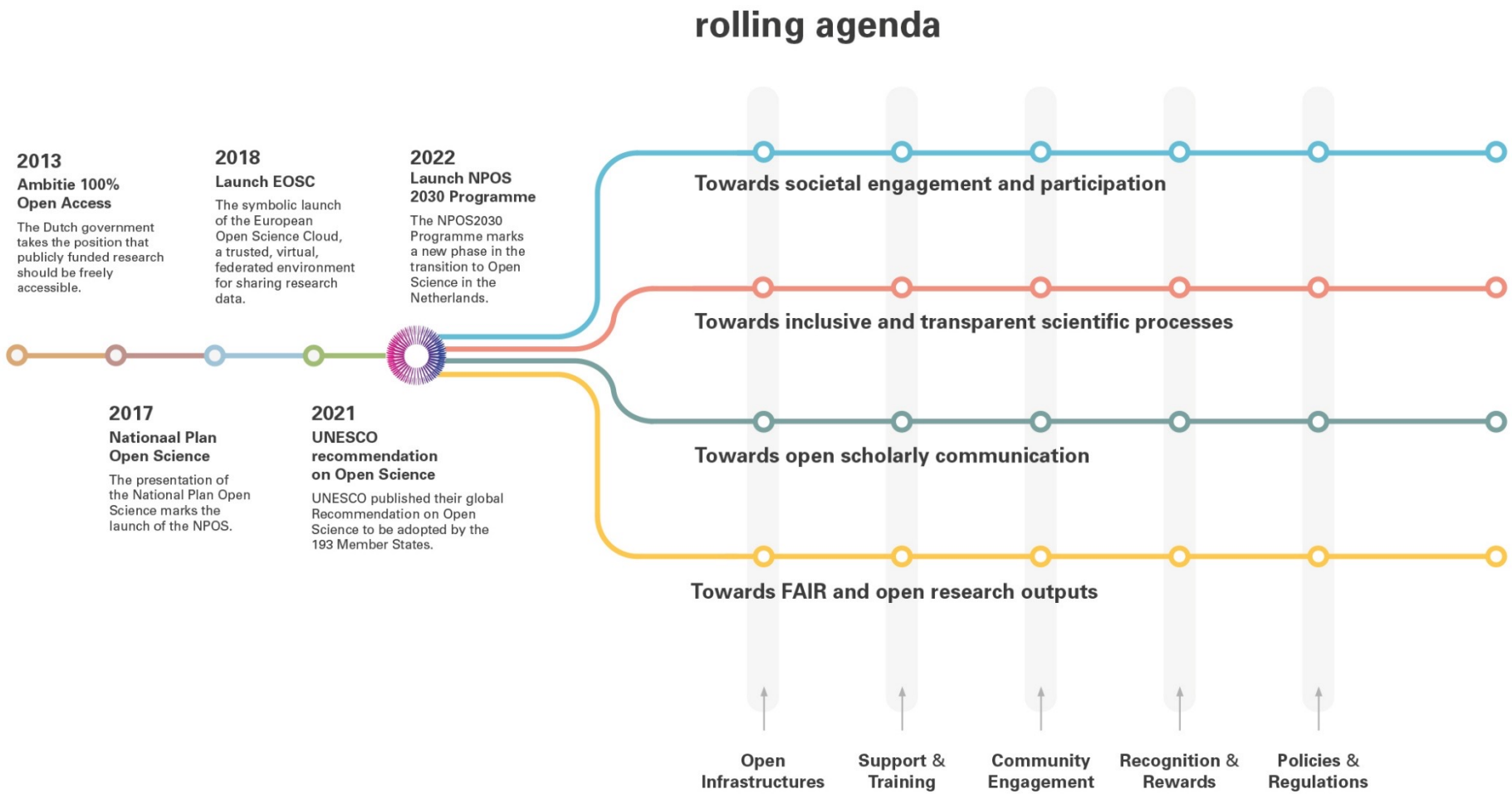
Towards a NPOS 2030 Multi Annual Plan

NPOS Ambition 2030

2013 - 2021

2022 - 2030

2030



strategic goals

Close collaboration between knowledge institutions, government, industry, and citizens to strengthen science and optimise the processes of creating, sharing, and communicating knowledge for the benefit of society.

Inclusive, efficient, and transparent processes of scientific (co-)creation, evaluation, quality assurance and communication

Removal of barriers to reading and reusing all scientific output, so everyone can access sci-entific knowledge in a sustainable way and benefit from it

Products of and for knowledge creation, like data and software, being findable, accessible, interoperable, and reusable (FAIR), and open in as far regulations allow

2013
Ambitie 100% Open Access

The Dutch government takes the position that publicly funded research should be freely accessible.

2017
Nationaal Plan Open Science

The presentation of the National Plan Open Science marks the launch of the NPOS.

2018
Launch EOSC

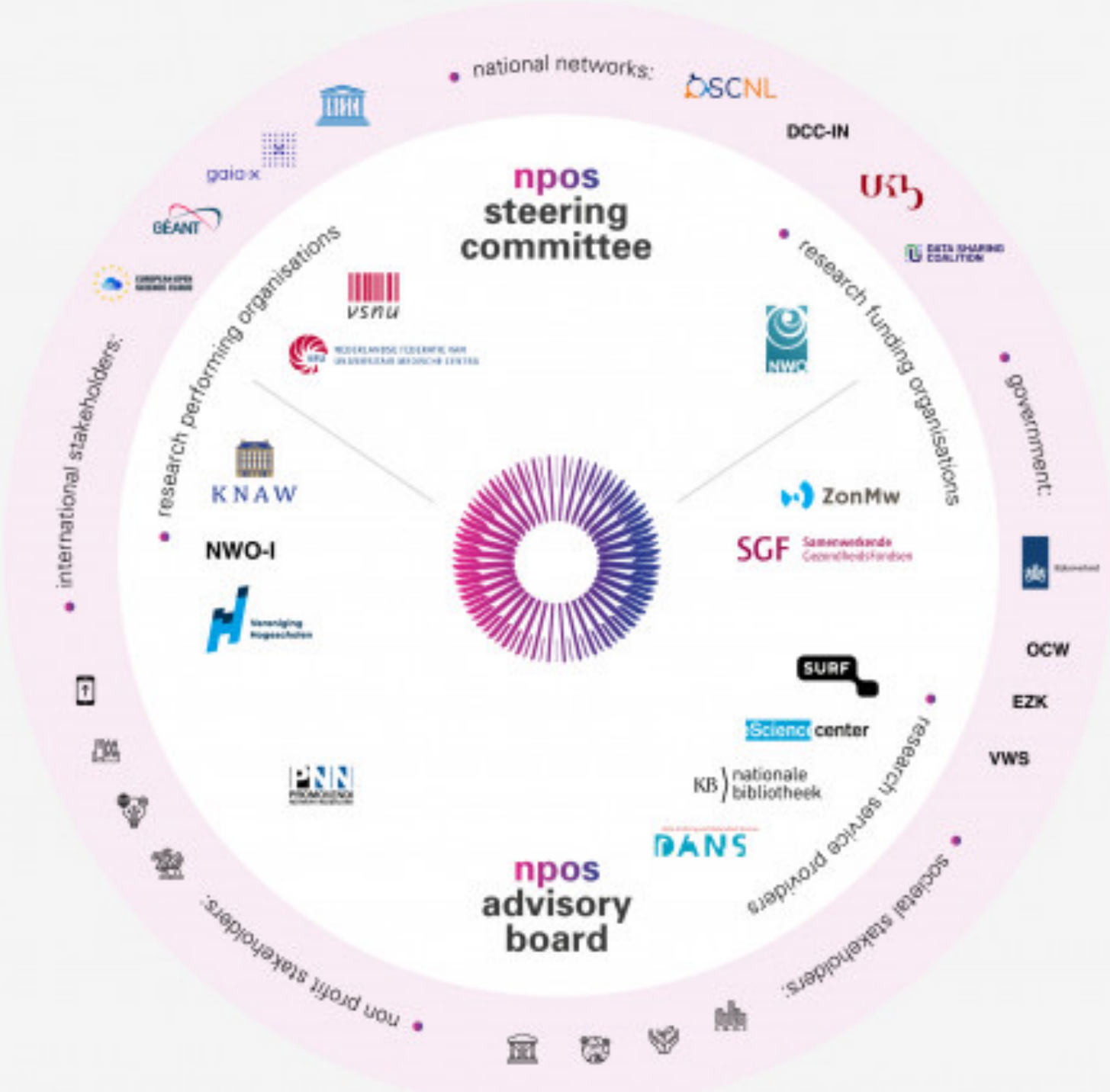
The symbolic launch of the European Open Science Cloud, a trusted, virtual, federated environment for sharing research data.

2021
UNESCO recommendation on Open Science

UNESCO published their global Recommendation on Open Science to be adopted by the 193 Member States.

2022
Launch NPOS 2030 Programme

The NPOS2030 Programme marks a new phase in the transition to Open Science in the Netherlands.

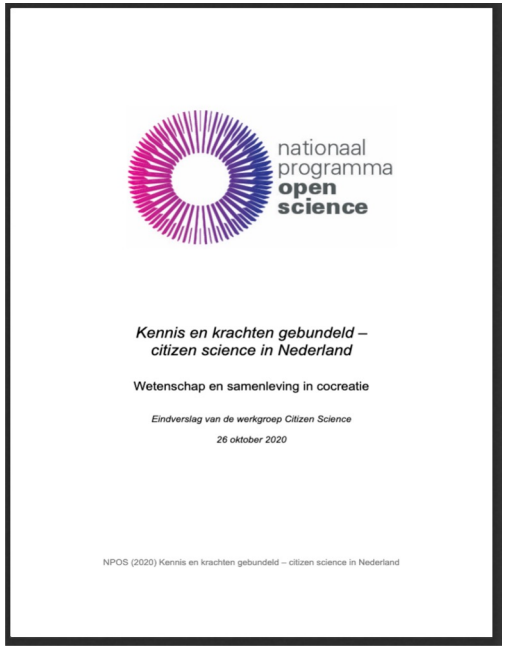


KNAW

de jonge akademie

NPOS Citizen Science Werkgroep

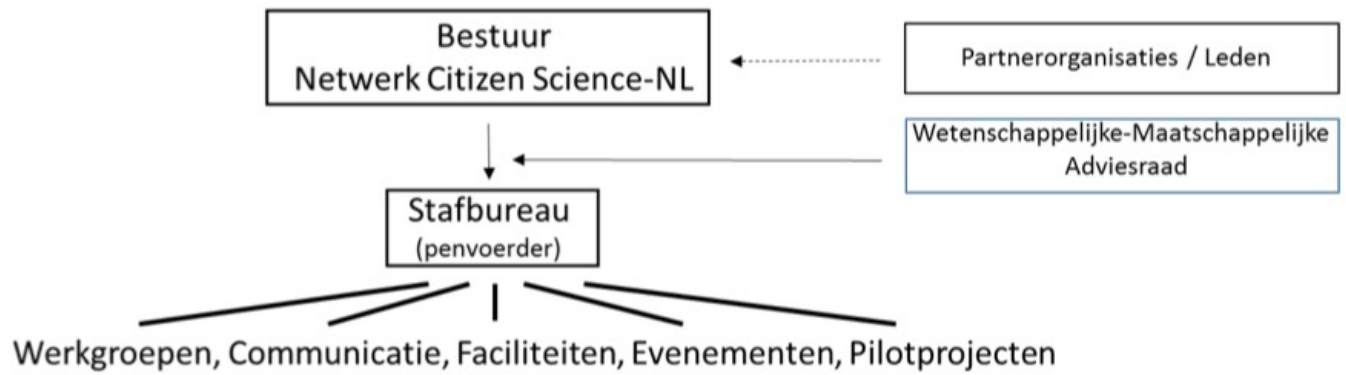
2019



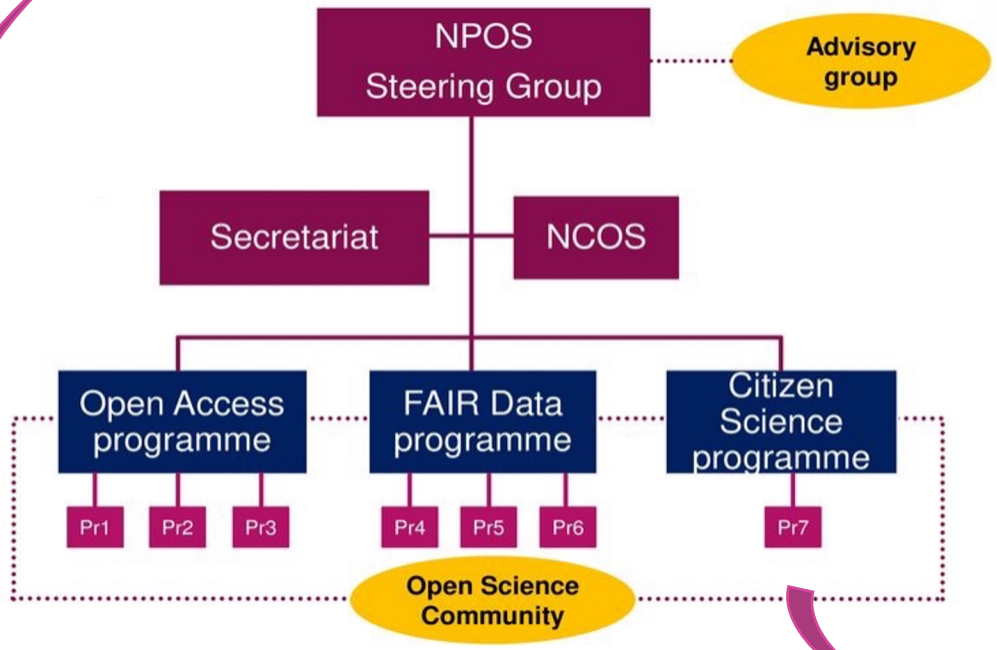
2020 Report

De voorstellen van de werkgroep moeten ertoe leiden dat in 2022:

1. Een **ondersteuningsstructuur** (netwerkstructuur) is ontstaan die
   - Onderzoekers houvast biedt
   - Initiatieven en actoren verbindt
   - Innovatie stimuleert (m.n. het verbinden van wetenschap en samenleving)
   - Verbindingen versterkt
   - Kansen biedt voor nieuwe verbindingen in de vorm van symposia, werkgroepen, onderzoek naar citizen science, en pilotprojecten (vanuit wetenschap en samenleving).



2021



key lines of action

FAIR DATA

- Build a professional community of data stewards
- Incentivise FAIR digital research outputs and metadata
- Enable sustainable interoperable networks of FAIR data services
- Develop a national FAIR data trust framework with societal stakeholders

OPEN ACCESS

- Make all scholarly output Open Access
- Enable full Open Access without additional costs
- Maintain high quality and research integrity
- Get control over ownership, public values, academic and digital sovereignty
- Enable novel ways of recognition & rewards
- Grow towards less dependency on publishers

CITIZEN SCIENCE

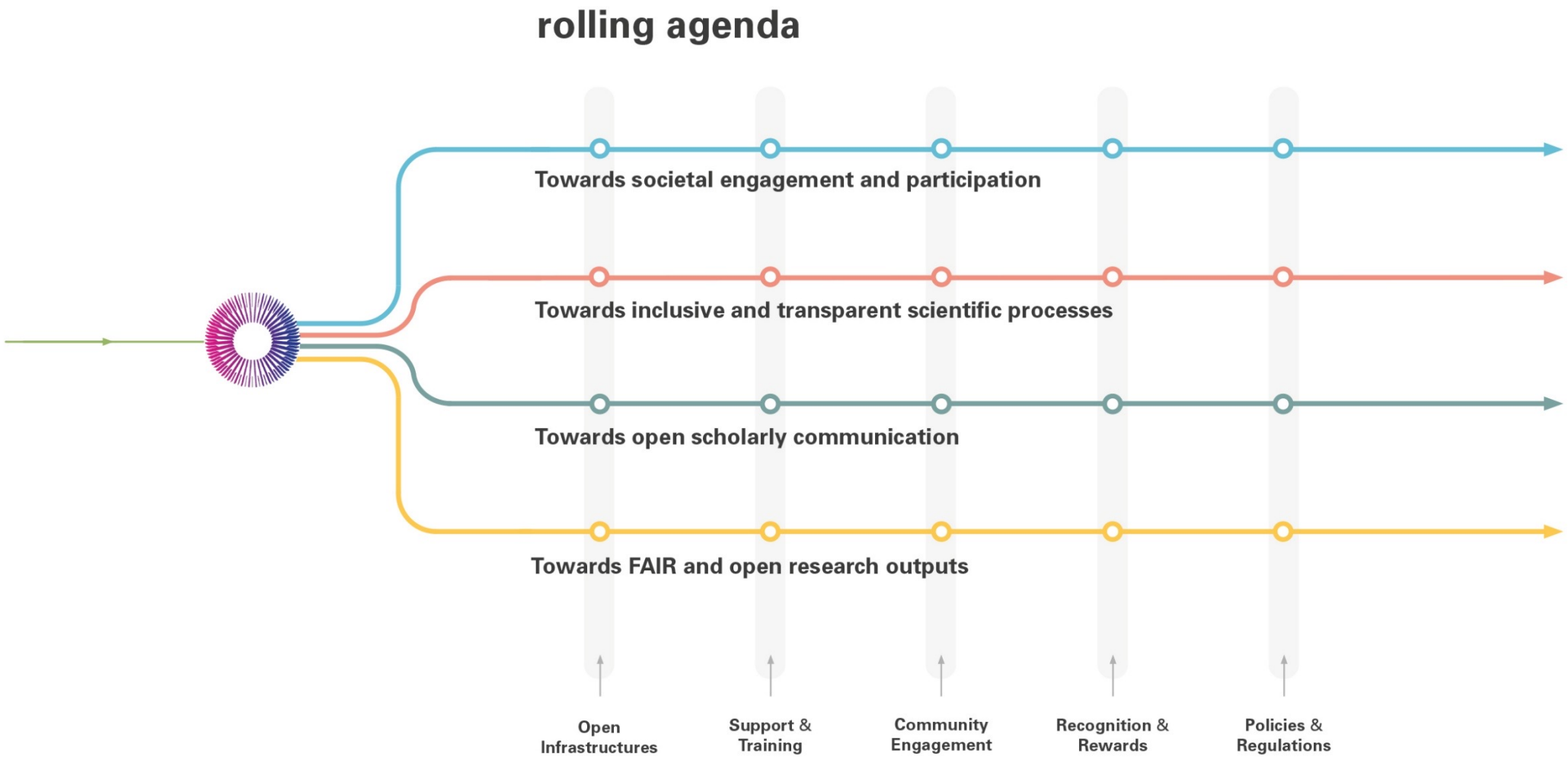
- Raise awareness
- Consolidate and further develop best practice
- Build capacity
- Enhance transdisciplinary collaboration
- Develop Supporting infrastructures

CS-NL
Citizen Science Nederland

nationaal programma open science

NPOS Ambition 2030 2/3

2022 - 2030



NPOS Ambition 2030

2013 - 2021

2022 - 2030

2030

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2022

rolling agenda

- Towards societal engagement and participation — *Citizen Science*
- Towards inclusive and transparent scientific processes
- Towards open scholarly communication
- Towards FAIR and open research outputs

Citizen Science

Research

Open Infrastructures | Support & Training | Community Engagement | Recognition & Rewards | Policies & Regulations

strategic goals

Close collaboration between knowledge institutions, government, industry, and citizens to strengthen science and optimise the processes of creating, sharing, and communicating knowledge for the benefit of society.

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Products of and for knowledge creation, like data and software, being findable, accessible, interoperable, and reusable (FAIR), and open in as far regulations allow

CS-NL
Citizen Science Nederland

400+ members

info@cs-nl.network

@CitSciNL

zenodo.org/communities/cs-nl/

tinyurl.com/CSNL-NIEUWSBRIEF

tinyurl.com/CSNL-LINKEDIN

Networks

Legal & Policy Frameworks

Internal Policies & Culture

Capacity Building & Networks

Supporting (Data) Infrastructure

Societal Dialogue

FUNDING

Regieorgaan Open Science officially launched as Open Science NL

23 March 2023

Representatives of fifteen knowledge institutions and the Ministry of Education, Culture and Science have signed the covenant for Open Science NL. It contains further agreements about the newly established Regieorgaan Open Science at NWO, which is called Open Science NL. The festive signing took place during a meeting at TU Delft, which was entirely dedicated to open science.

With the signing of the covenant, the newly establishe
Science NL is to further accelerate the transition to o

Characteristics

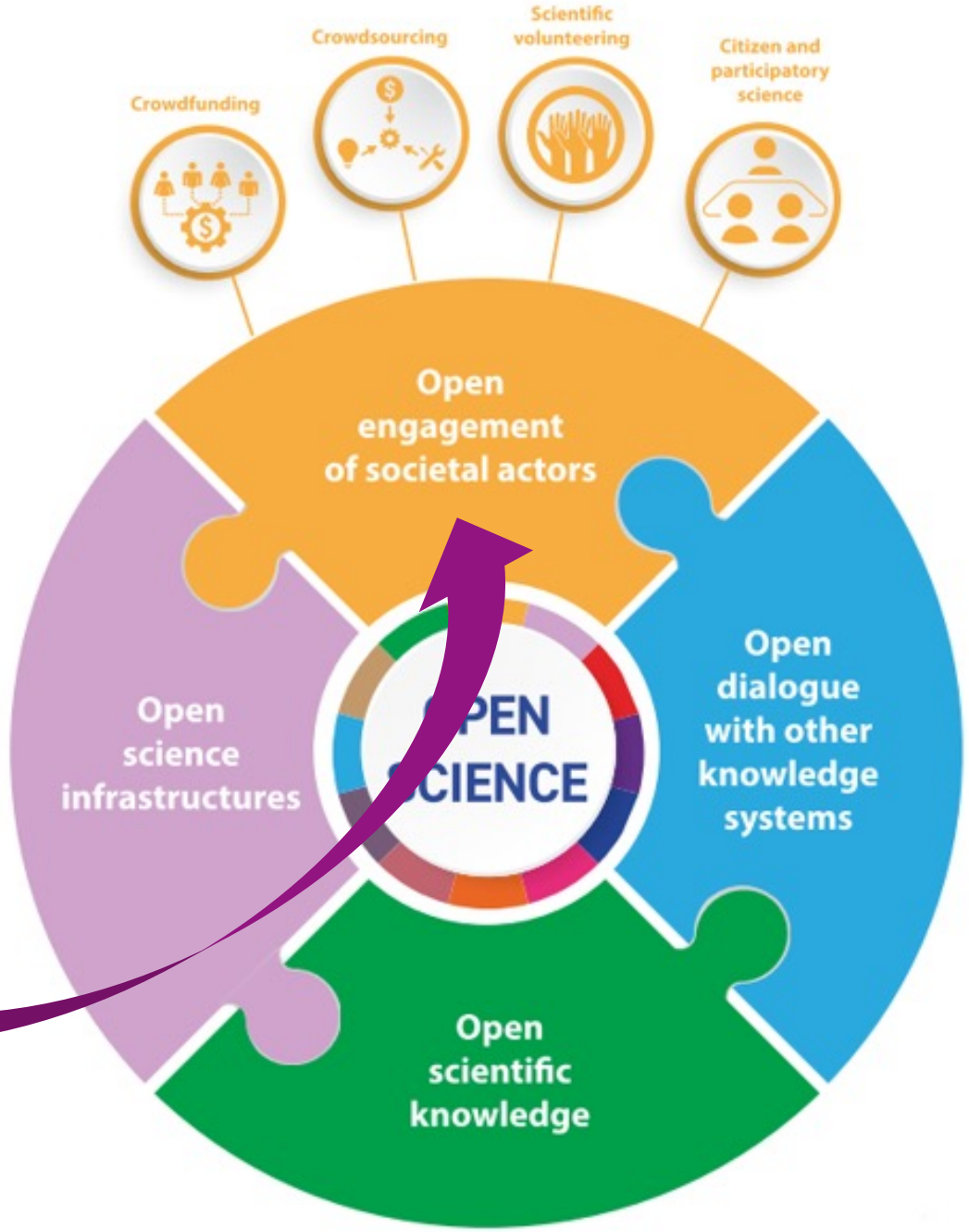
Theme

Open Science

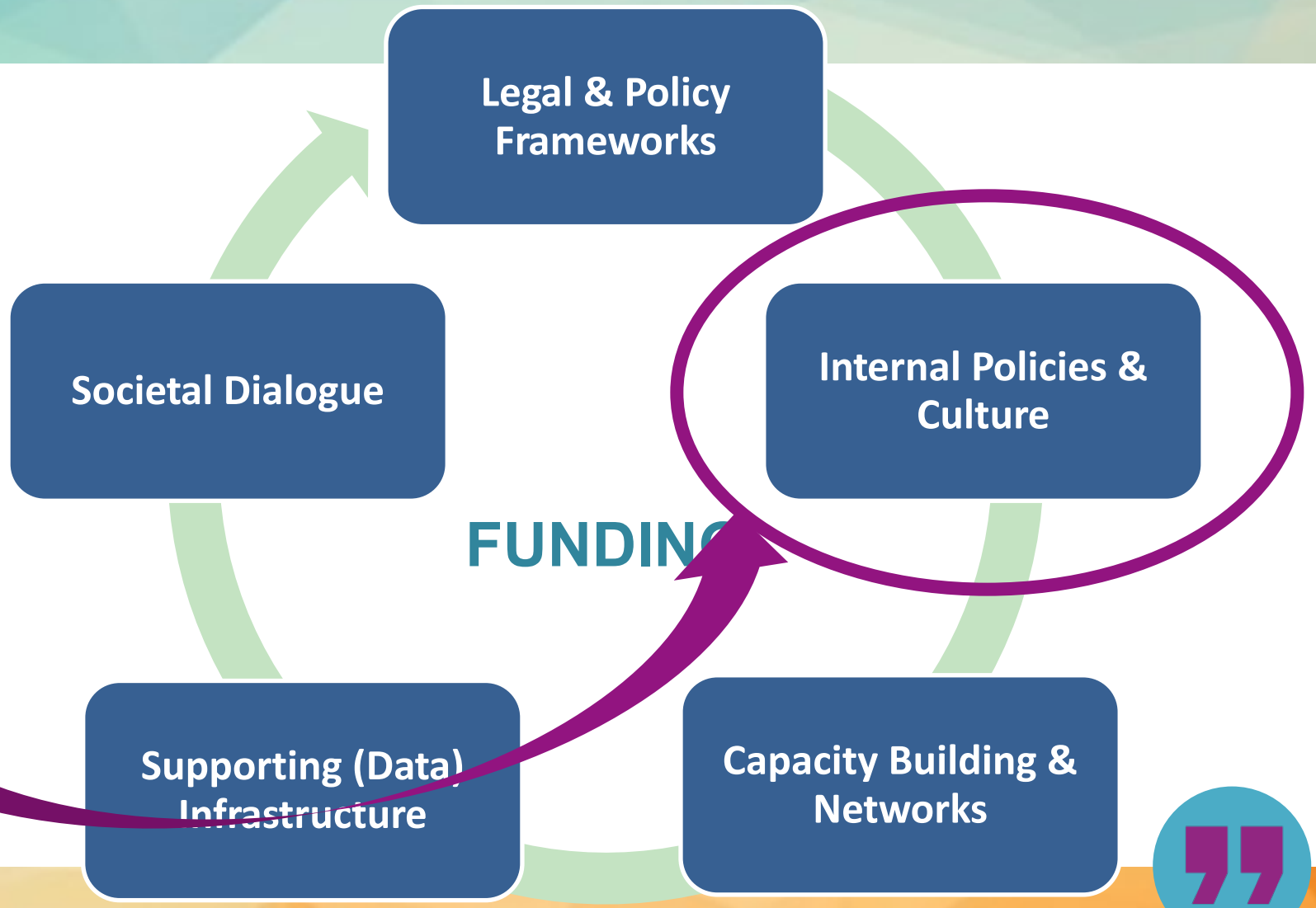
Type

Organisation

Open Engagement of Societal Actors



Enabling Factors

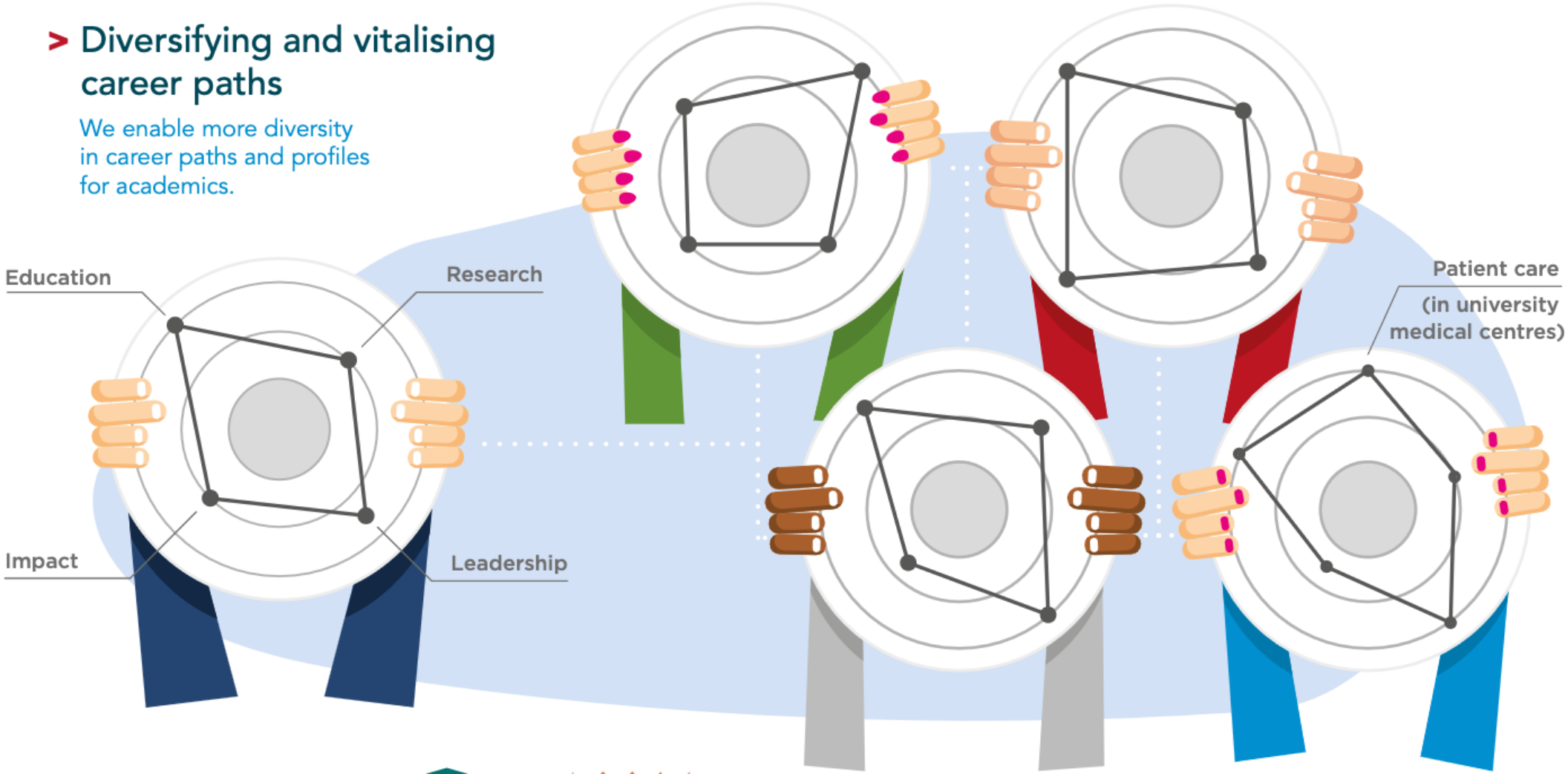


Room for everyone's talent

towards a new balance in the recognition and rewards of academics

> Diversifying and vitalising career paths

We enable more diversity in career paths and profiles for academics.



Coalition for Advancing Research Assessment

Our vision is that the assessment of research, researchers and research organisations recognises the diverse outputs, practices and activities that maximise the quality and impact of research. This requires basing assessment primarily on qualitative judgement, for which peer review is central, supported by responsible use of quantitative indicators.

Academia in Motion: de universiteit komt in beweging voor een betere wetenschap

Gepubliceerd op 08 november 2022

De Universiteit Leiden gaat aan de slag met Open Science en anders Erkennen & Waarderen! Dat is de hoofdboodschap van de nieuwe regiegroep Academia in Motion.

De afgelopen jaren is er geïnvesteerd in het ophalen van input en het formuleren van een heldere visie op Open Science en Erkennen & Waarderen. Nu duidelijk is welke richting we als universiteit willen inslaan, is het tijd om deze plannen in de praktijk te brengen. Om dit te bereiken

Zie ook

18 januari 2021
Op weg naar een andere manier van erkennen en waarderen

01 juni 2022
Dialoog en experimenten moeten Erkennen & Waarderen van de hele universiteit maken

Wetenschappers

Hester Bijl
Rector magnificus

Karlijn Hermans
Coördinator Open Science

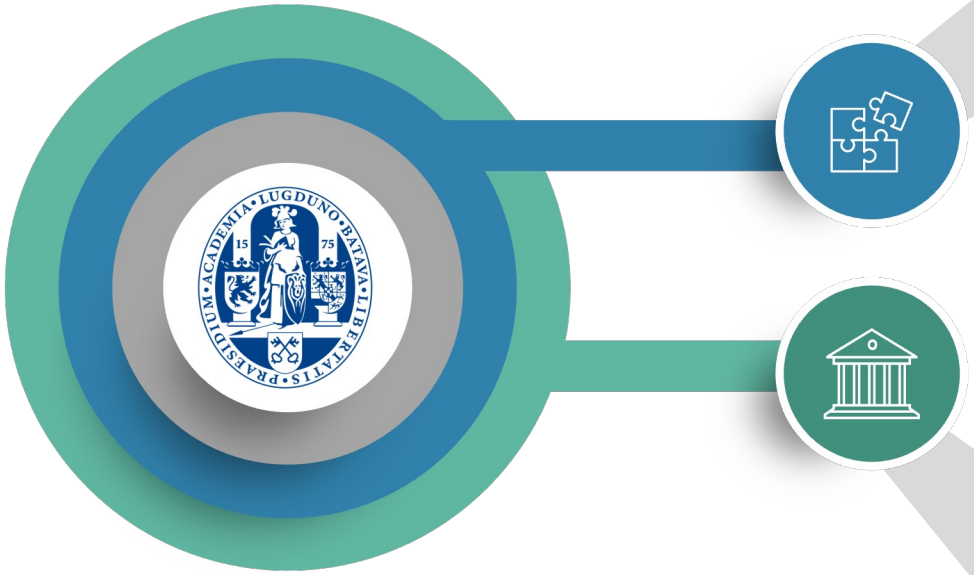
Margaret Gold
Coördinator Citizen Science

Cas Henckens
Coördinator Erkennen & Waarderen

Jasper Knoester

Academia in Motion 2022 - 2027

Open Science ontwikkelingen parallel laten lopen met **Erkenning en Waardering** van open kennisdeling praktijken.



Open Science Programme

Coordinator Karlijn Hermans

Citizen Science

Coordinator Margaret Gold

Open Access

FAIR Data

Research Software

Rewards & Recognitions

Coordinator Cas Henckens

Infrastructuur – Ontwikkeling van nieuwe en beter gebruik van bestaande infrastructuren voor effectieve en open kennisdeling.

Vaardigheden en ondersteuning van onderzoekers - Ontwikkeling vaardigheden voor kennisdeling in wetenschappelijke gemeenschap, afhankelijk van discipline.

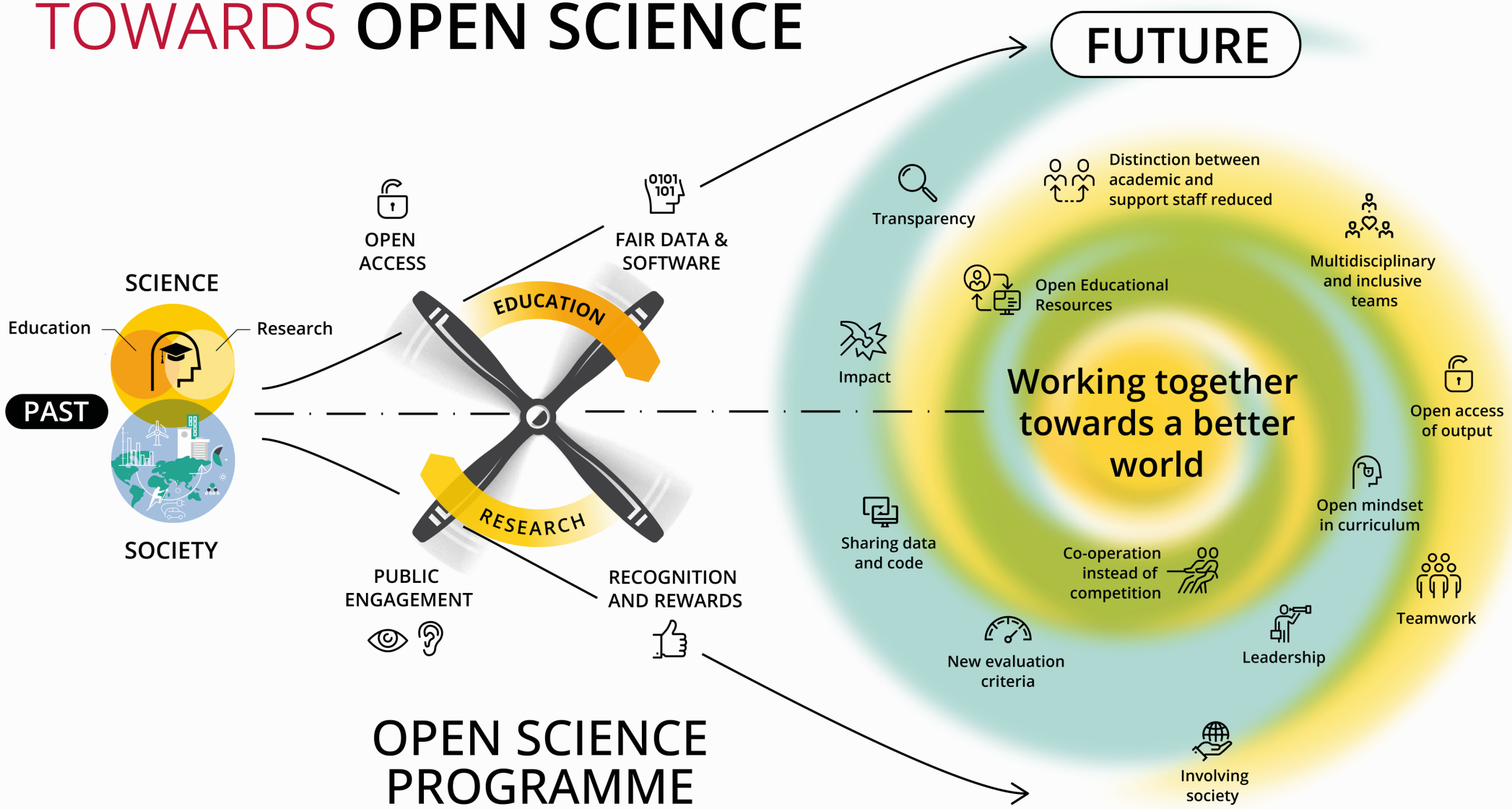
Academische cultuur - Investering in en verspreiden van best practices van kennisdeling, bewustwording van mogelijke manieren van kennisdeling en waarom Open Science (evidence-informed en OS monitoring).

Ontwikkeling persoonlijk en verbindend leiderschap - Integratie van Open Science in verantwoordelijkheid van academische leiders.

Utrecht University

www.uu.nl/openscience

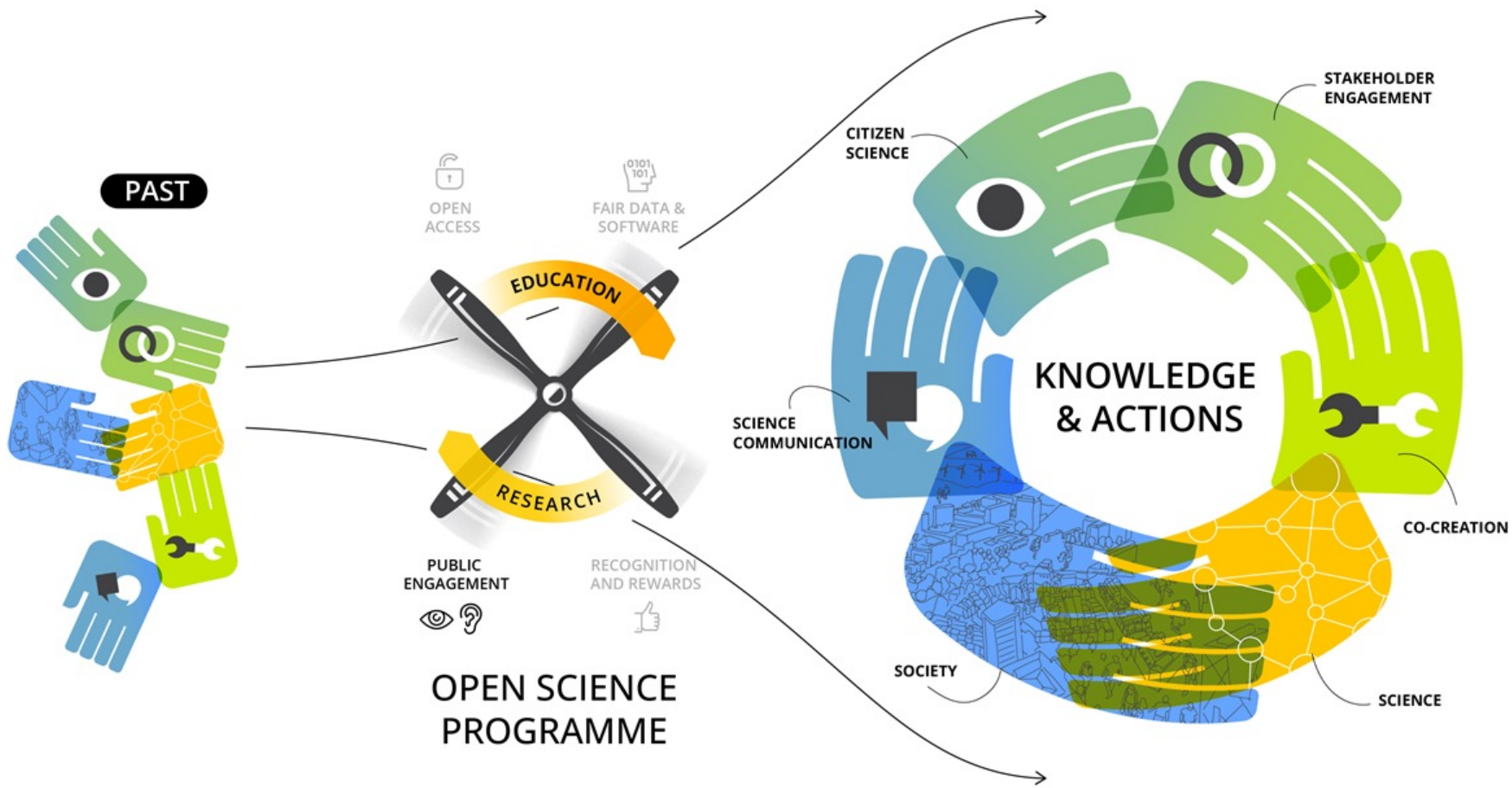
TOWARDS OPEN SCIENCE



OPEN SCIENCE PROGRAMME

Utrecht University

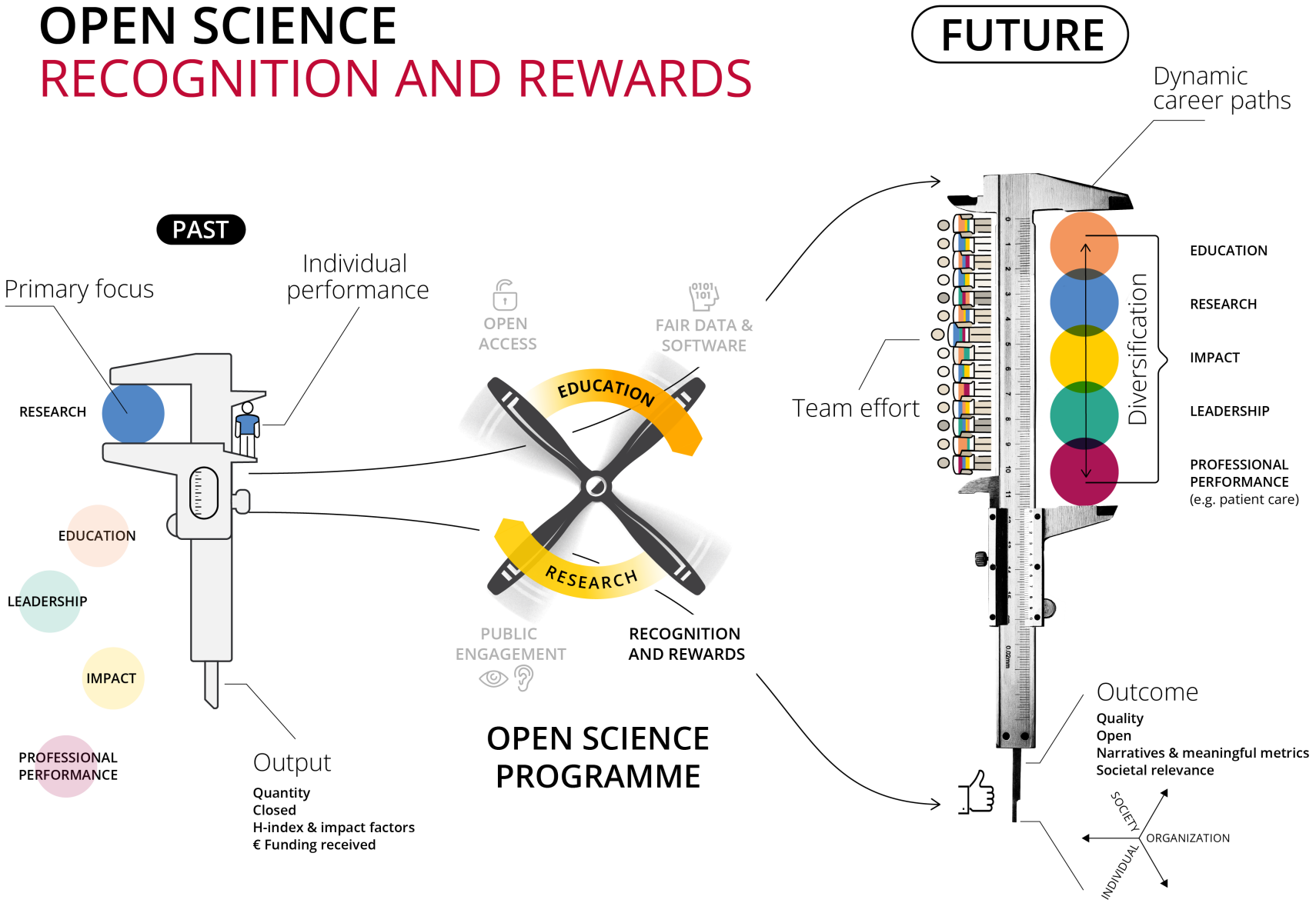
OPEN SCIENCE
PUBLIC ENGAGEMENT

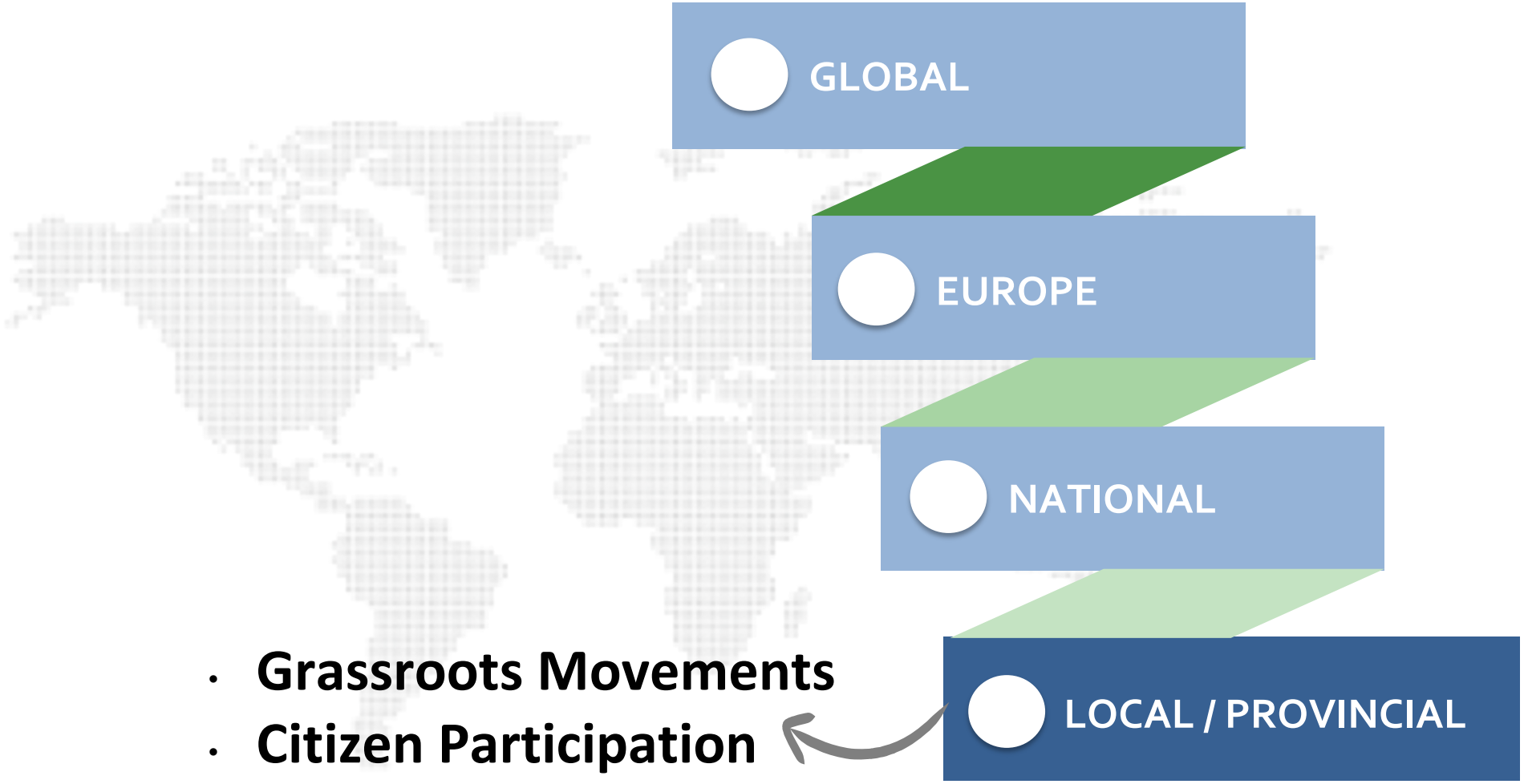


Utrecht University

SKETCH AUTUMN 2020

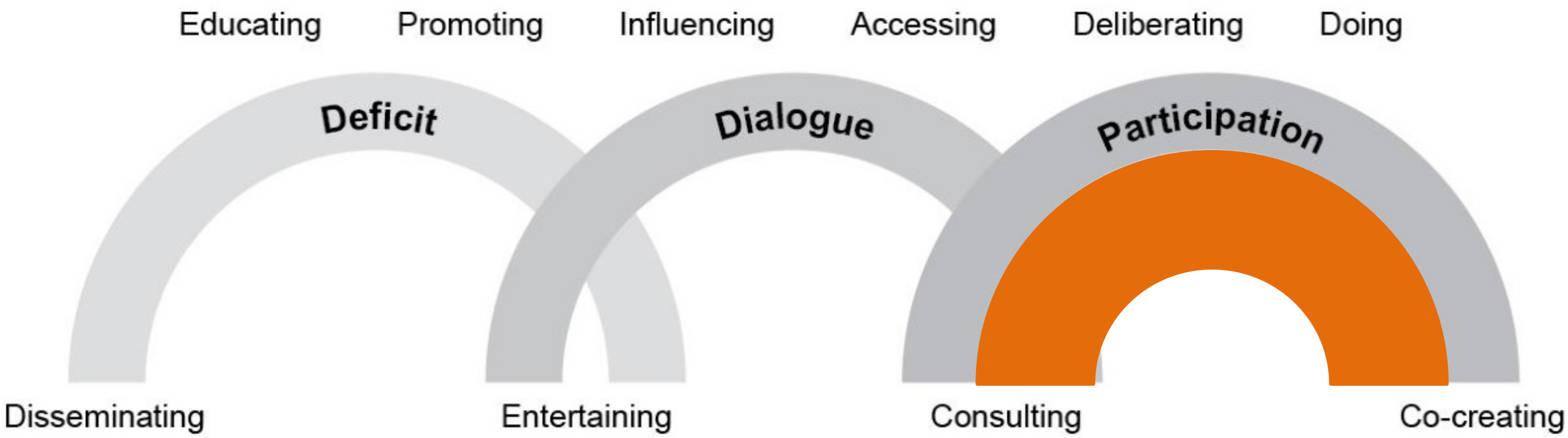
OPEN SCIENCE
RECOGNITION AND REWARDS





- **Grassroots Movements**
- **Citizen Participation**

Discover – Participate - Research



A big example and a little example

…about light, science, and art coming together to investigate light pollution and air pollution…

European
City of Science
Leiden2022


365 dagen nieuwsgierig
365 dagen nieuwsgierig
European City of Science Leiden2022
2022
DARWIN
DAG 043
ZA 12 FEB
Radio Weetlust 08.00-09.00uur
Stel je vraag op Postbus71.nl
leiden2022.nl/1202
365 dagen nieuwsgierig
Van harte welkom in 2022! Een jaar lang is Leiden de Europese Stad van de Wetenschap. Dag in dag uit valt er van alles te beleven en ontdekken in Leiden en omstreken. Met deze scheurkalender en alle 365 fantastische onderwerpen die er in staan hopen we jou nieuwsgierig te maken naar de wondere wereld van wetenschap, kennis, kunst en kunde. Er is volop keuze: 365 dagen een ander onderwerp, voor elk wat wils. Dus zeker ook voor jou!
Hoe werkt het? Blader naar hartenlust door deze dikke dagkalender. Zoek naar je interesses of laat je verrassen door de grote variatie aan onderwerpen en ontdek wat er allemaal achter schuil gaat. Hoe? Scan de QR-code met je mobiel en laat je meevoeren... We rekenen erop je daarna te ontmoeten, ergens in 2022!
Team Leiden2022
PS. O ja, en natuurlijk alvast van harte gefeliciteerd met je verjaardag. Kijk snel wat we die dag voor je hebben klaargezet...
European City of Science Leiden2022
365 dagen nieuwsgierig

Year of Events

365

European
City of Science
Leiden2022

Co-funded by
the European Union

Knowledge throughout the Neighborhoods

365

European City of Science Leiden2022

Co-funded by the European Union

Knowledge throughout the Neighborhoods

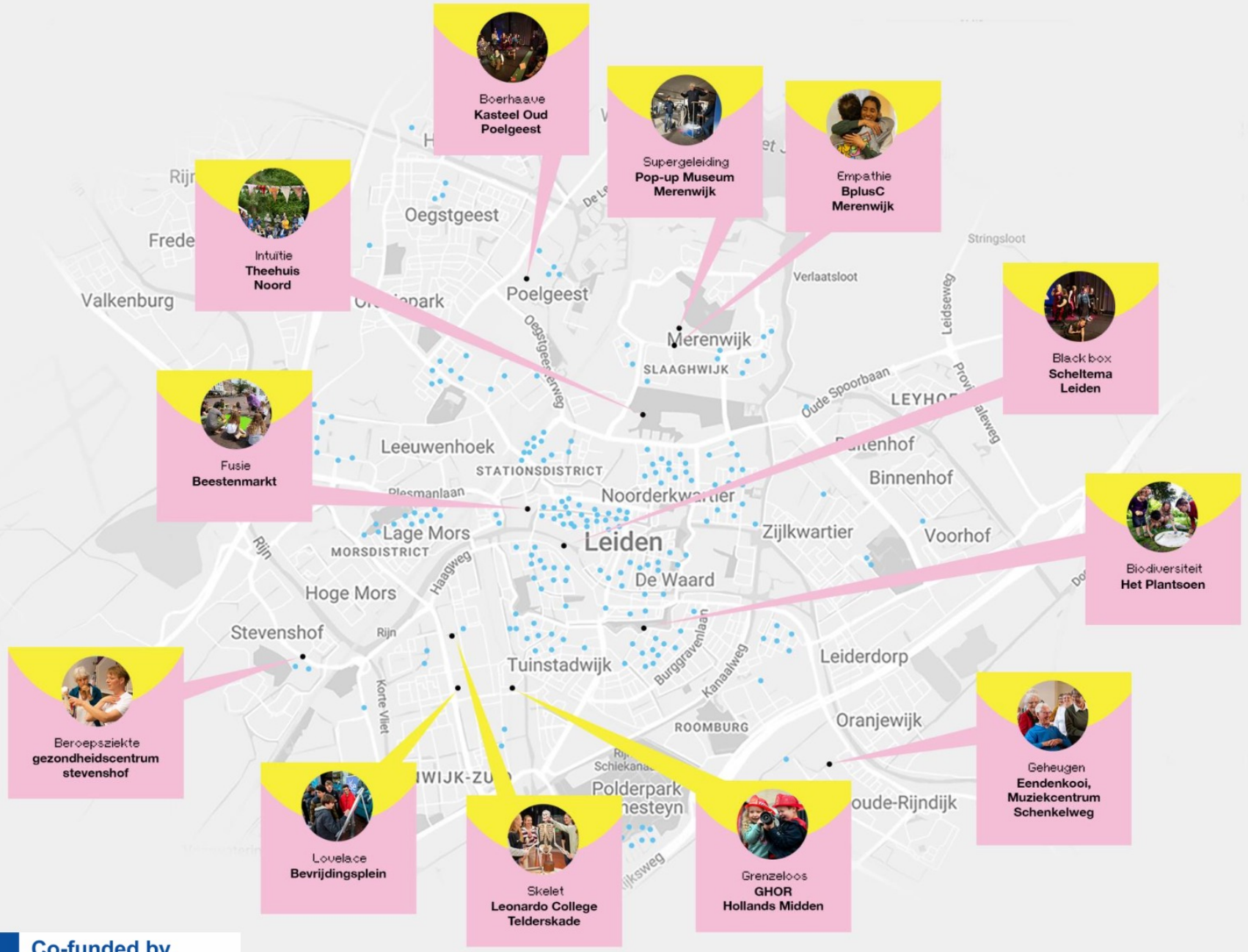
A TOPIC A DAY

210+ activities

199+ owners-of-the-day

10.000+ participants

101 districts



Co-funded by the European Union

365 days connecting science with society

RADIO WEETLUST
365 guests **406** radio shows
and **numerous** fans!

P.O. BOX 71
500+ citizens asking questions
180+ scientists providing answers
110+ YouTube movies
13.000+ views
110.000+ twitter-hits

KNOWLEDGE THROUGHOUT THE NEIGBOURHOODS
365 topics-of-the-day
210+ local activities
10.000+ participants
199+ owners-of-the-day
101 neighbourhoods in Leiden & region
3 TukTuks
8.5/10 appreciation rate

52 trees planted

100+ congresses & symposia
2000 participants, **13.000+** delegates

BRANDING LEIDEN2022
1222 QR-logo's distributed
61.035 QR-logo's scanned

COMMUNICATING LEIDEN2022
161.819 website visits
5378+ social media community
1,115,163+ social media impressions
37,446+ social media engagement
73,654+ social media video views

FINANCING LEIDEN2022
7.2 million euro budget
4 million co-funded by the European Commission
37 Financial Partners, **4** Founding Partners

European City of Science Leiden2022

Many thanks to 1000s of local, national and European, known and anonymous, formal and informal partners.Together, we brought Leiden European City of Science 2022 to life.

CREATED WITH **500.000+** PARTICIPANTS

1000+ activities with a huge COMMUNTY BONUS

ESOF 2022 EUROSCIENCE OPEN FORUM
10th edition
98 scientific sessions
4 live-only, **29** hybrid, **63** online
3.138 delegates from **87** countries
494 speakers from **54** countries
7.5/10 appreciation rate

EUCYS
33rd edition
65.000 participants **132** finalists
87 projects from **32** countries
8.4/10 appreciation rate delegates
9/10 appreciation rate jury

EU TalentOn
1st edition
5 EU mission arena's
700+ applicants, **104** participants
41 nationalities, **28** countries
26 teams, **26** buddies
20+ experts
8/10 appreciation rate
8,5/10 appreciation rate incl. buddies

NEW EUROPEAN BAUHAUS
21 events
25+ local citizens assemblies
1 Ministry of the Future

Co-funded by the European Union

BIOLOGISCHE KLOK

Klik voor meer

DAG 084 VR 25 MRT

ASTRO

WKZH MEET UP 2022

UPGx PERSONALIZED MEDICINE

DAG 089 WO 30 MRT

METEN=WETEN

VAATDAGEN 2022

DAG 102 DI 12 APR

AARDE

DAG 113 ZA 23 APR

MOEDER NATUUR

DAG 128 ZO 08 MEI

LICHT

Klik voor meer

ISMSE-15 & ICPMSE-13

DAG 136 MA 16 MEI

ZIEN

7TH CTE-STEM

12TH CHEMICAL STRUCTURES

Klik voor meer

DAG 166 WO 15 JUN

DHZ

DAG 114 ZO 24 APR

European
City of Science
Leiden2022

Science in and with the City

W38

VALLENDE STER

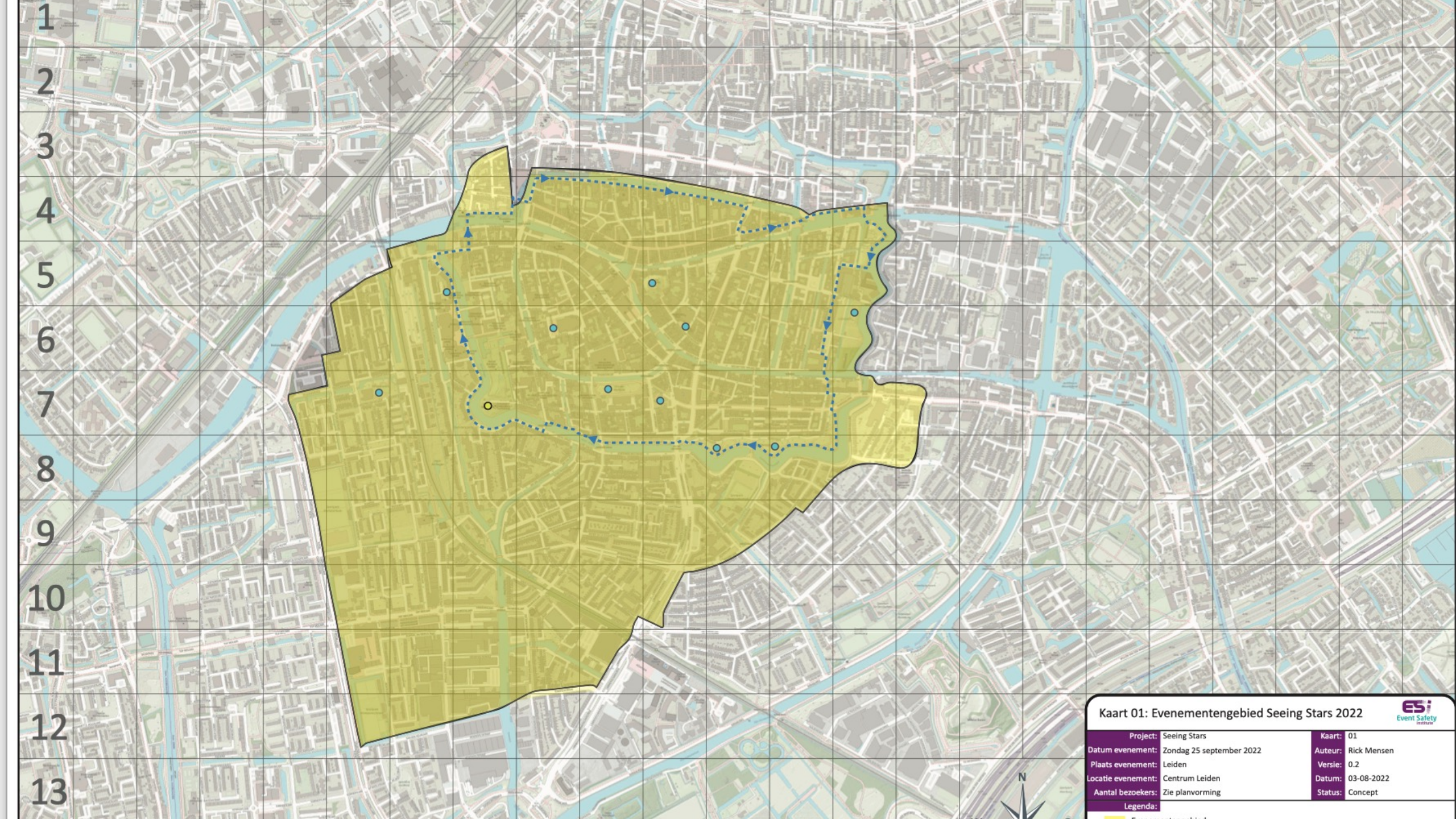
SPACE

DAG 268

ZO 25 SEP

Lights Out…

…Stars On


1
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N
Kaart 01: Evenementengebied Seeing Stars 2022
Event Safety Institute
Project: Seeing Stars
Kaart: 01
Datum evenement: Zondag 25 september 2022
Auteur: Rick Mensen
Plaats evenement: Leiden
Versie: 0.2
Locatie evenement: Centrum Leiden
Datum: 03-08-2022
Aantal bezoekers: Zie planvorming
Status: Concept
Legenda:

Cos4Cloud

POCKET. SCIENCE

Dark Sky Meter

Loss of the Night

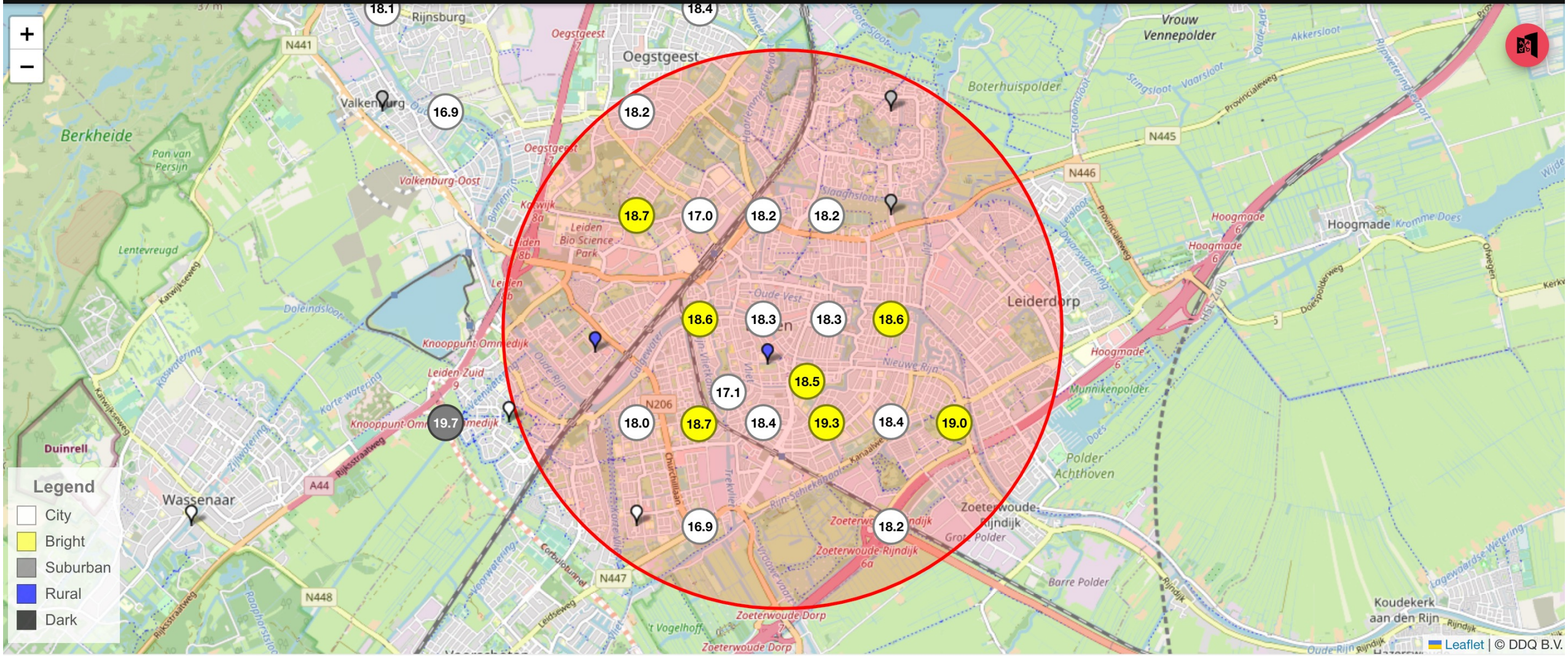

CELESTRON

MOBIS
MOBILE OBSERVATION INTEGRATION SERVICE

POCKET. SCIENCE

Cos4Cloud

Seeing Stars Leiden



Data Browser | Map

Seeing Stars Leiden: “Lights out, stars on”

A Citizen Science initiative together with the residents of Leiden, to measure what the effect is on light pollution when you turn off the lights of an entire city.

*Margaret Gold *, Joep van der Heiden**, Norbert Schmidt **, Frans Snik* and 150+ citizen scientists*
**Leiden University, **DDQ Pocket Science*

citizen science lab

25 September 2022, 22:00 – 23:30

In the year that Leiden is the European City of Science, the city of Leiden turned off the lights, together with residents, to once again be able to look up at the stars. We wondered what the impact of this would be on light pollution in Leiden

What did we experience?

The stars and Jupiter between the (still lit) clouds

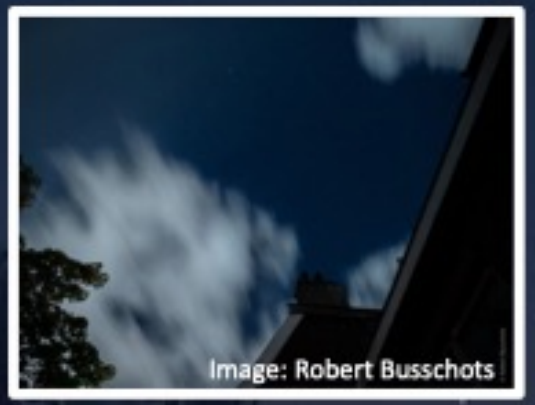


Image: Robert Busschots

An extraordinary night with thousands of people in the streets


Image: Anne Sytske Keijser

Reactions to light pollution

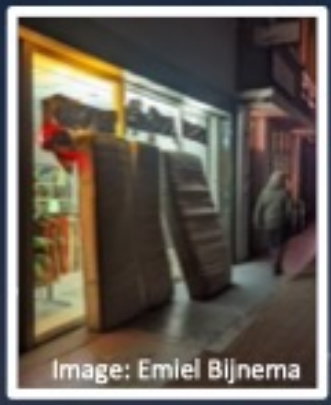


Image: Emiel Bijnema

“In Leiden on Sunday, the lights went out to make the night sky visible. #SeeingStarsLeiden was a fantastic evening despite the clouds. It was moving for me as a Leiden astronomy student and reporter, to all look up together.” @FJD_Rensen

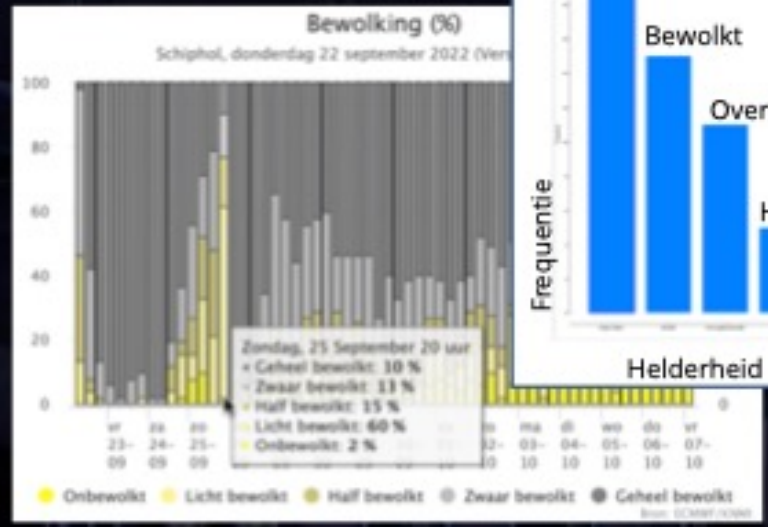
“If there is anything I learnt from #SeeingStarsLeiden is that there are lots of shops that

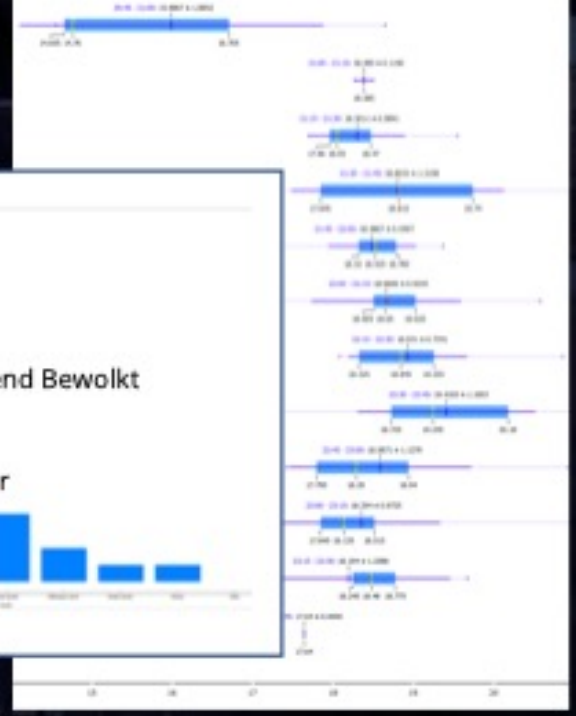
SQM – how much light falls on the sensor.

Image: ESO/P. Horálek, M. Wallner

What did we measure?

It was unfortunately too cloudy for reliable data





More than 150 people joined us in taking measurements during Seeing Stars Leiden

- 389 Dark Sky Meter measurements (SQM)
- 100 Loss of the Night measurements (Bortle)

We continue to measure light pollution - will you JOIN US?

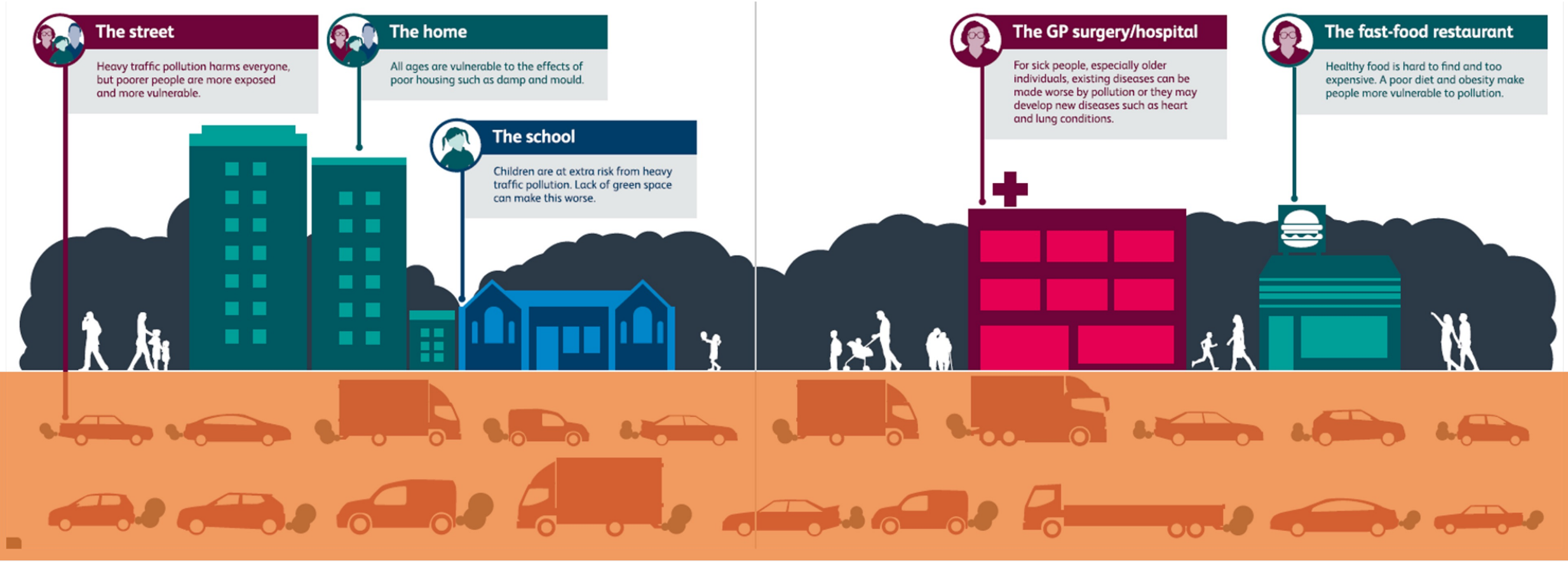
- **'Dark Sky Meter'** for iPhone (SQM)
  Using your iPhone, take two photos with the 'Dark Sky Meter' app - a 'dark' photo to calibrate your camera, and a 'light' photo directly upwards (90°) to take a light measurement.

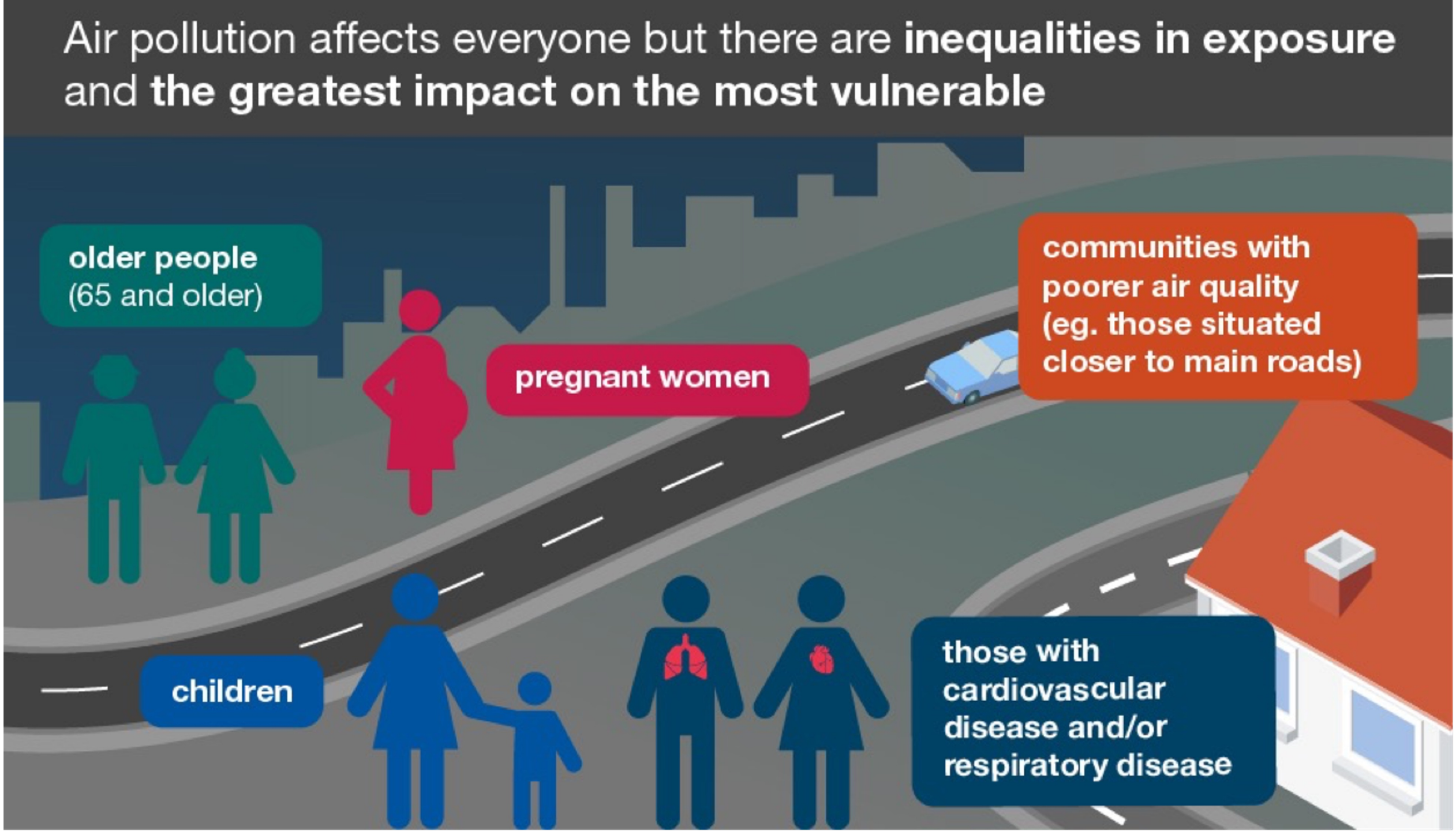
- **'Loss of the Night'** for Android (Bortle scale)

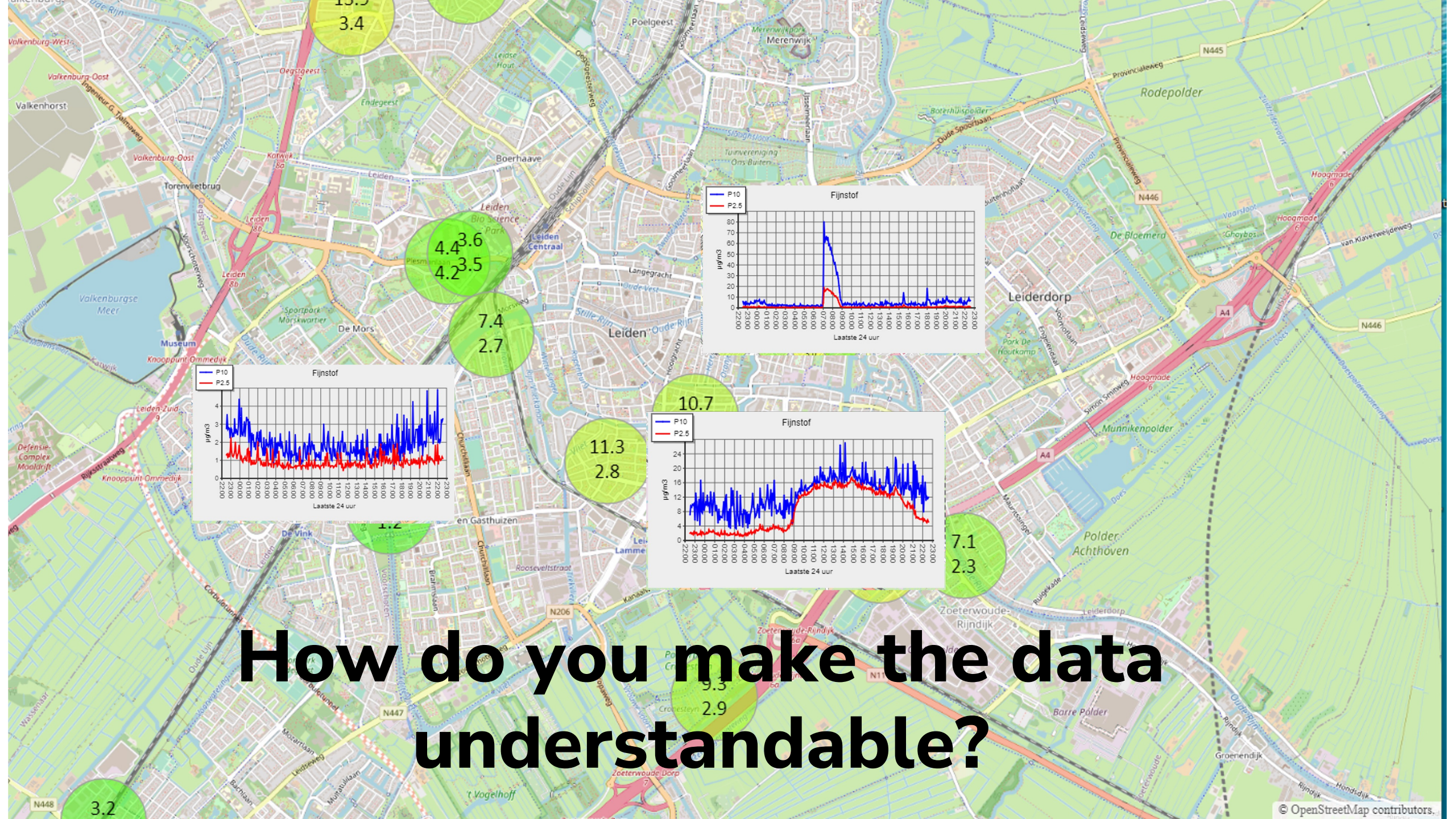
A big example and a little example

…about light, science, and art coming together to investigate light pollution and air pollution…

How do you make the invisible – visible?




Air pollution affects everyone but there are **inequalities in exposure** and **the greatest impact on the most vulnerable**
older people (65 and older)
pregnant women
communities with poorer air quality (eg. those situated closer to main roads)
children
those with cardiovascular disease and/or respiratory disease



How do you make the data understandable?

Universiteit Leiden

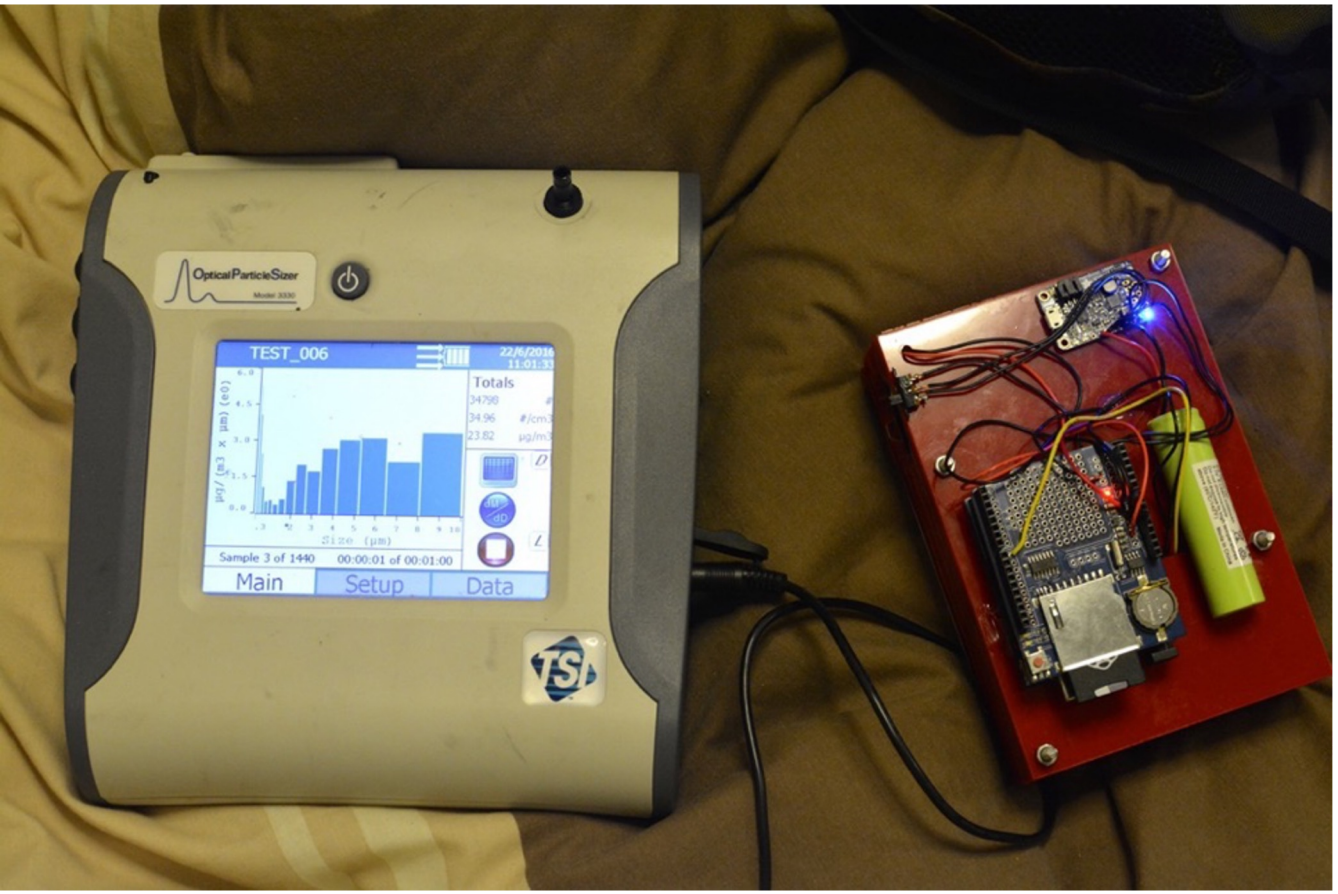
UNIVERSITY OF BIRMINGHAM

Air Quality “in the Picture”

euni well European University for Well-Being

VAULT ARTIST STUDIOS

What happens if you can find a way to visualise the problem – and the data?



```
while True:
    if (time.time() - test_time > 1):
        wildish = alpha.histogram()
        test_time = time.time()
        #wildish2 = str(wildish['PM10'])
        #print(wildish)

        #pope =  open('pi_robin', 'a')
        #pope.write(str(datetime.utcnow()) + ", ")
        #pope.write(str(wildish['PM1']) + ", ")
        #pope.write(str(wildish['PM2.5']) + ", ")
        #pope.write(str(wildish['PM10']) + ", ")
        #pope.write(str(wildish['Bin 0']) + ", ")
        #pope.write(str(wildish['Bin 1']) + ", ")
        #pope.write(str(wildish['Bin 2']) + ", ")
        #pope.write(str(wildish['Bin 3']) + ", ")
        #pope.write(str(wildish['Bin 4']) + ", ")
        #pope.write(str(wildish['Bin 5']) + ", ")
        #pope.write(str(wildish['Bin 6']) + ", ")
        #pope.write(str(wildish['Bin 7']) + ", ")
        #pope.write(str(wildish['Bin 8']) + ", ")
        #pope.write(str(wildish['Bin 9']) + ", ")
        #pope.write(str(wildish['Bin 10']) + ", ")
        #pope.write(str(wildish['Bin 11']) + ", ")
        #pope.write(str(wildish['Bin 12']) + ", ")
        #pope.write(str(wildish['Bin 13']) + ", ")
        #pope.write(str(wildish['Bin 14']) + ", ")
        #pope.write(str(wildish['Bin 15']) + ", ")
        #pope.close()
        if (wildish['PM2.5'] > 0):
            print("PM2.5 " + str(wildish['PM2.5']) + " ug/m^3 ---- log PM2.5 = " + str(math.
        global PM25
        PM25 = wildish['PM2.5']
        tbuff.append(test_time)
        buff.append(PM25)
        #print buff
        #print tbuff
    #if (time.time() - display_update > 0.1)
    #print (f(time.time() - 1, buff, tbuff))
    interpolated_PM25 = (f(time.time() - 1, buff, tbuff))

    if (interpolated_PM25>0):
        g = math.log(f(time.time() - 1, buff, tbuff))*6
    else:
        g = 0

    if LED_COUNT > 144:
        topbound1 = (LED_COUNT/6)+g
        bottombound1 = (LED_COUNT/6)-g
        topbound2 = (LED_COUNT/2)+g
        bottombound2 = (LED_COUNT/2)-g
        topbound3 = (5*LED_COUNT/6)+g
        bottombound3 = (5*LED_COUNT/6)-g
        for i in range(strip.numPixels()):
            if (i > bottombound1 and i < topbound1) or (i > bottombound2 and i < topbound2
                b = random.randint(0,255)
                if (b<200):
                    b=0
                strip.setPixelColor(i, Color(b,b,b))
            else:
                strip.setPixelColor(i, Color(0,0,0))
```

Prince Street air quality monitoring site

Port Talbot, Wales

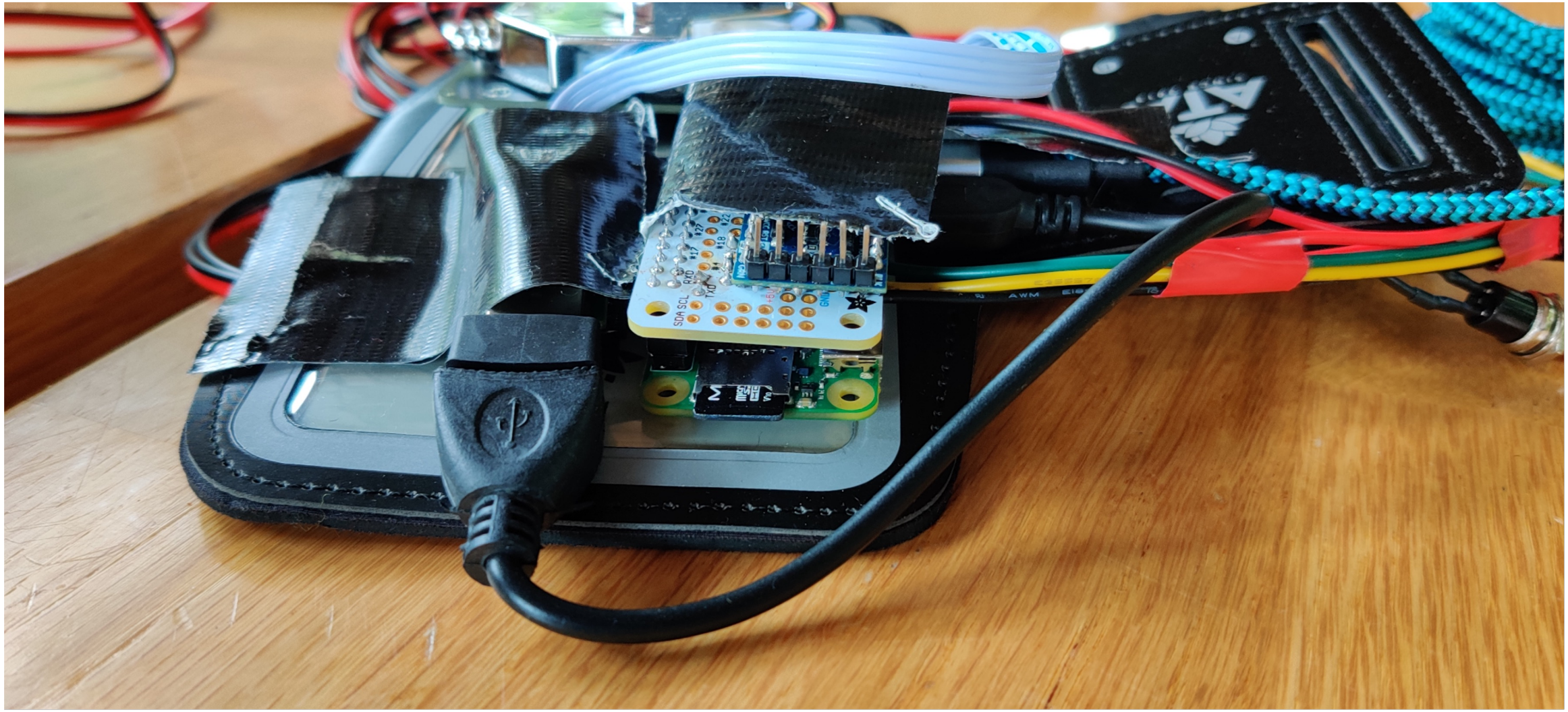
PM2.5 30 - 40 micrograms per cubic meter


LADAKH
Afghanistan
JAMMU AND KASHMIR
Palampur
TIBET
94 hr
455 km
99 hr
478 km
Pakistan
Delhi
Nepal
UTTAR PRADESH
SIKKIM
Bhutan
RAJASTHAN
ASSAM
BIHAR
MEGHALAYA
MANIPUR
Bangladesh
JHARKHAND
TRIPURA
GUJARAT
India
WEST BENGAL
MIZORAM
ODISHA
MAHARASHTRA
TELANGANA
GOA
KARNATAKA
ANDHRA PRADESH
Bay of Bengal
Arabian Sea
TAMIL NADU
KERALA
Sri Lanka
Laccadive Sea

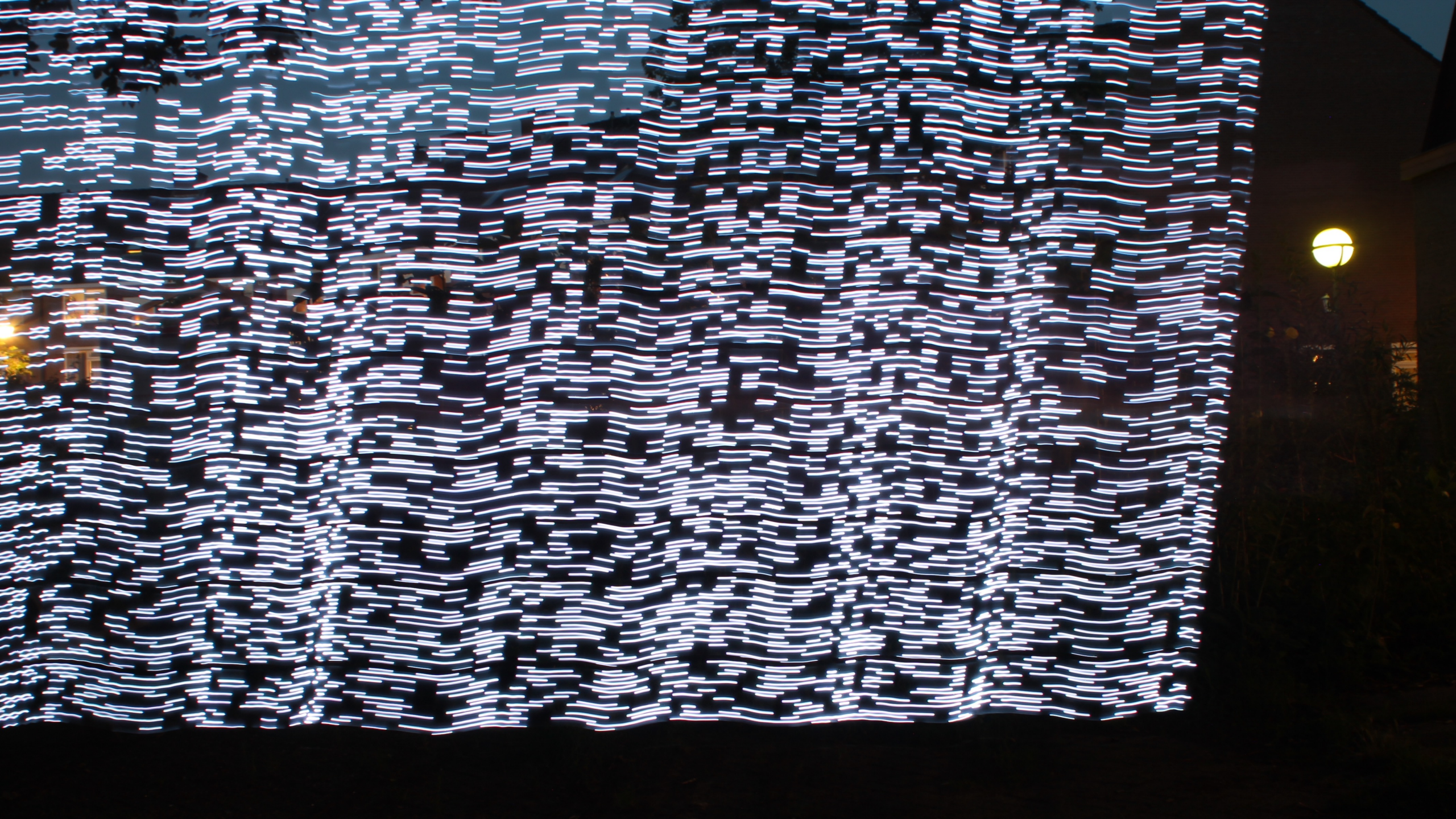

airtel


Luwum Street, Kampala
PM 2.5 40 - 60 micrograms per cubic metre
UN HABITAT
UNIVERSITY OF BIRMINGHAM

Knowledge Café Leiden - June 30, 2023


SDA SCL
RXD
TXD
GND


interesse
betang



NACHT VAN ONTDEKKINGEN

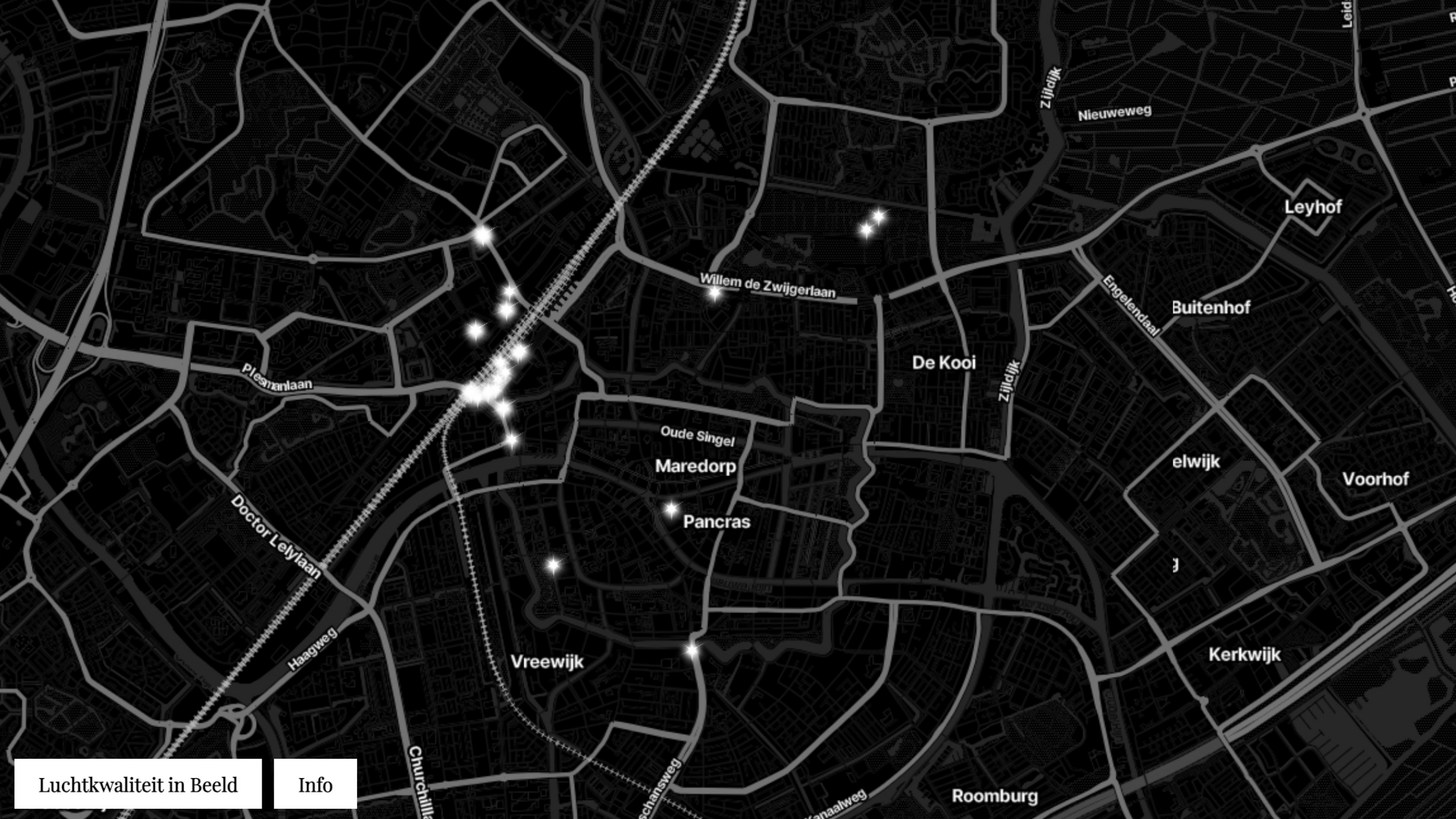
NIEUWS PROGRAMMA MEDIA FAQ VRIJWILLIGERS TICKETS

16 September 2023 - Leiden

CITIZEN SCIENCE LAB & ROBIN PRICE

LUCHTKWALITEIT IN BEELD

LANGUAGE: NO PROBLEM ART



Luchtkwaliteit in Beeld

Info

Door: Pauline Seijffert

31 augustus 2023

Verwijder Foto

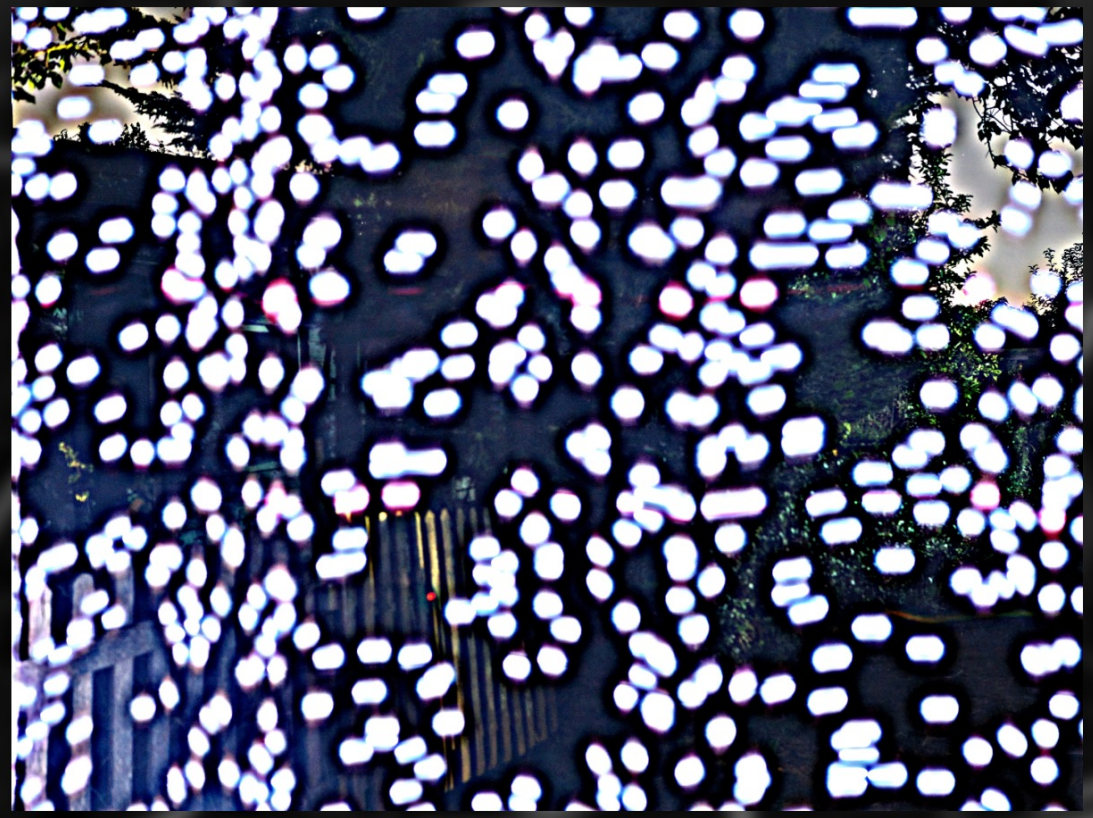


Foto in de buurt van een tuin waar werd gekookt op houtskool

Door: Nico

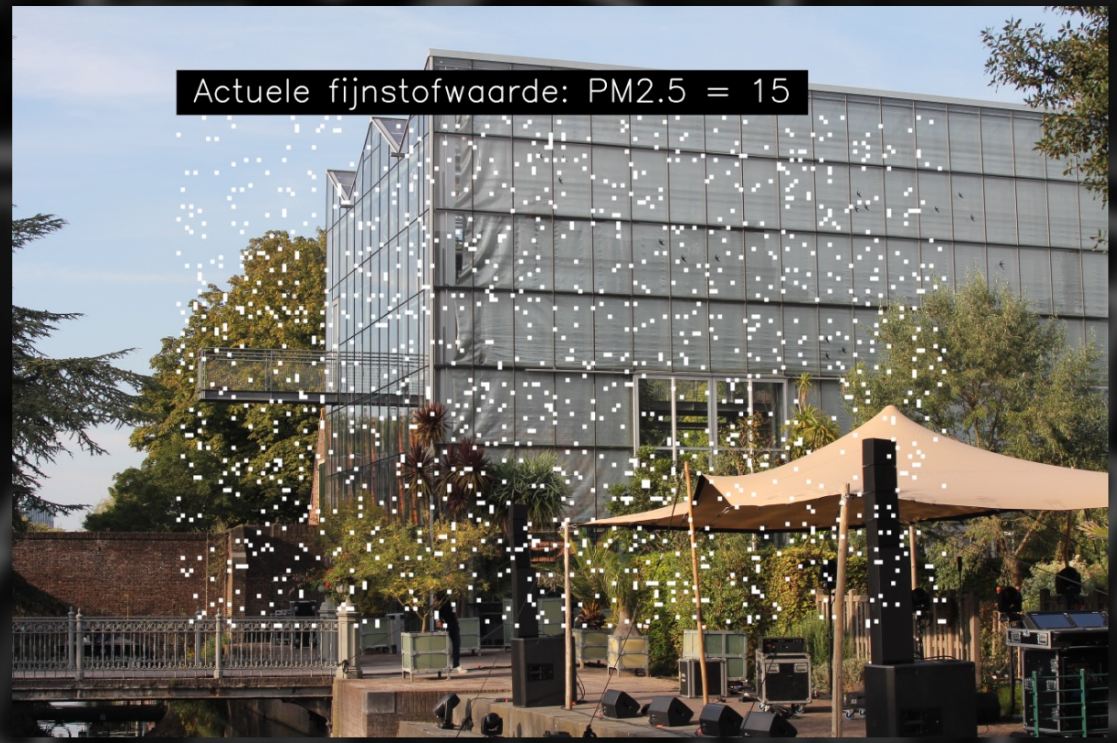
PM25: 88

4 september 2023

Verwijder Foto

Close

Press (fn) F to exit full screen



Steegje/onderdoorgang P.J. Veth gebouw blik op Grand Café van de Hortus. Gemaakt met de Digital Pollution Painter

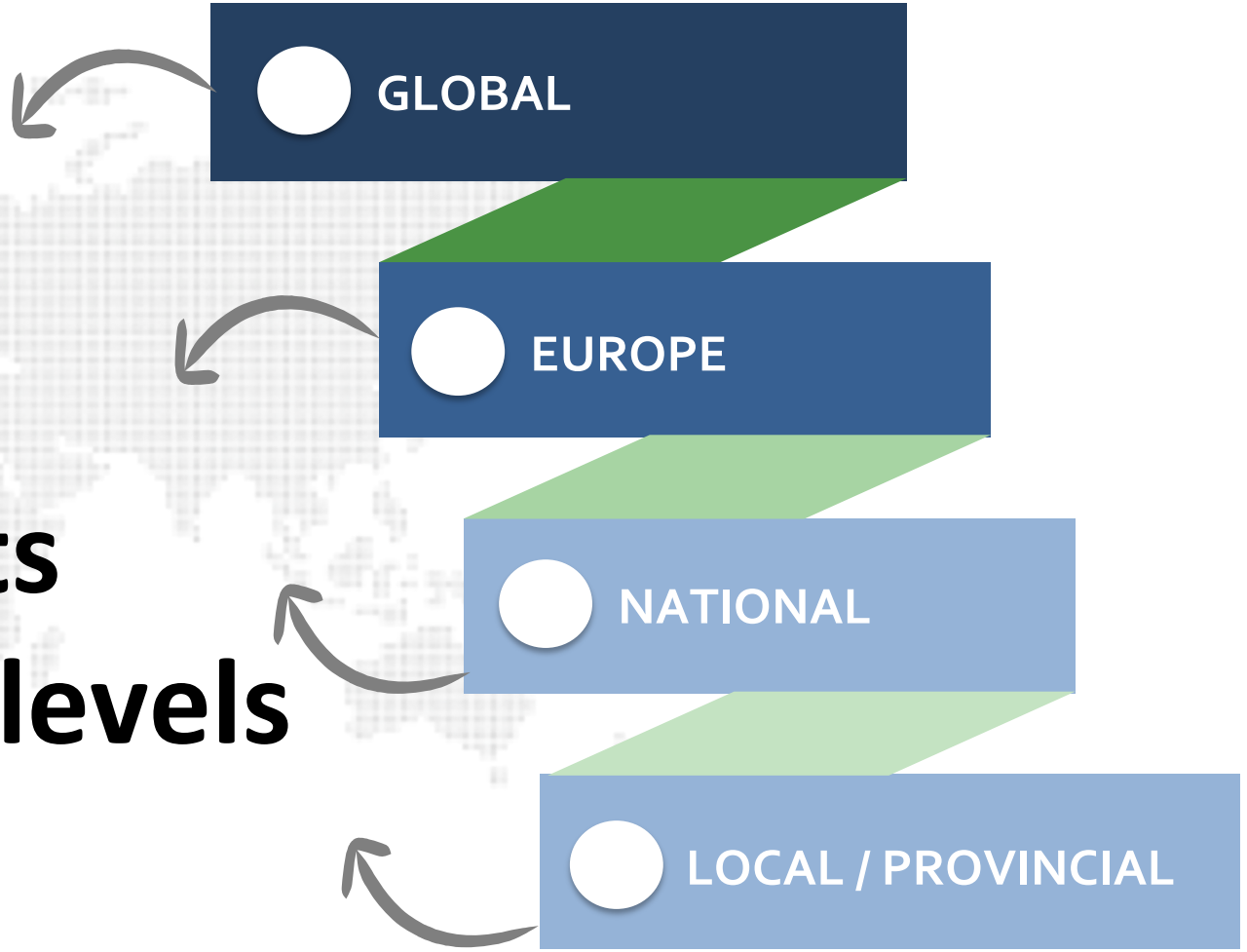
Door: Els Jansen & Ruud van Munster

PM25: 15

15 september 2023

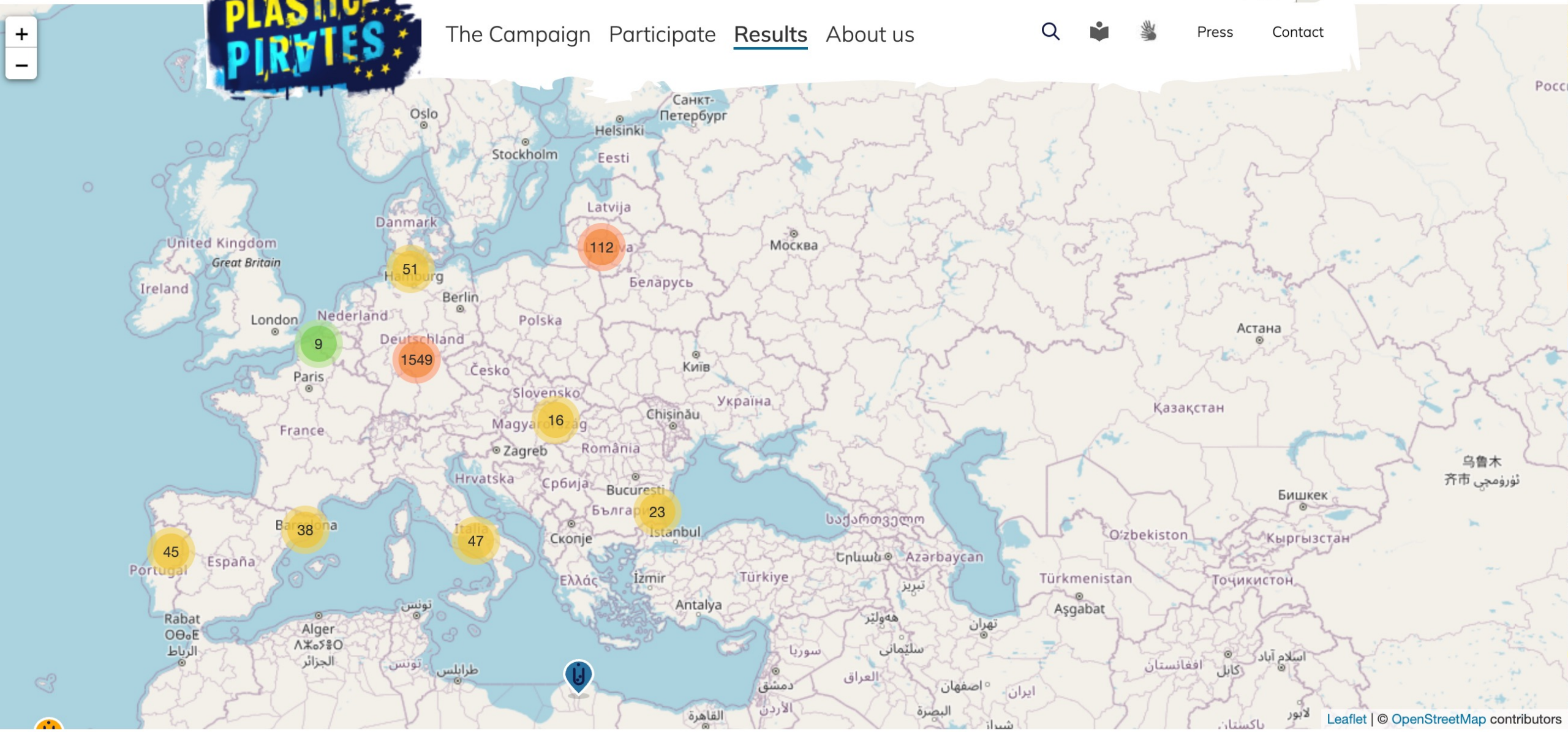
Verwijder Foto

Connecting the dots between all of the levels

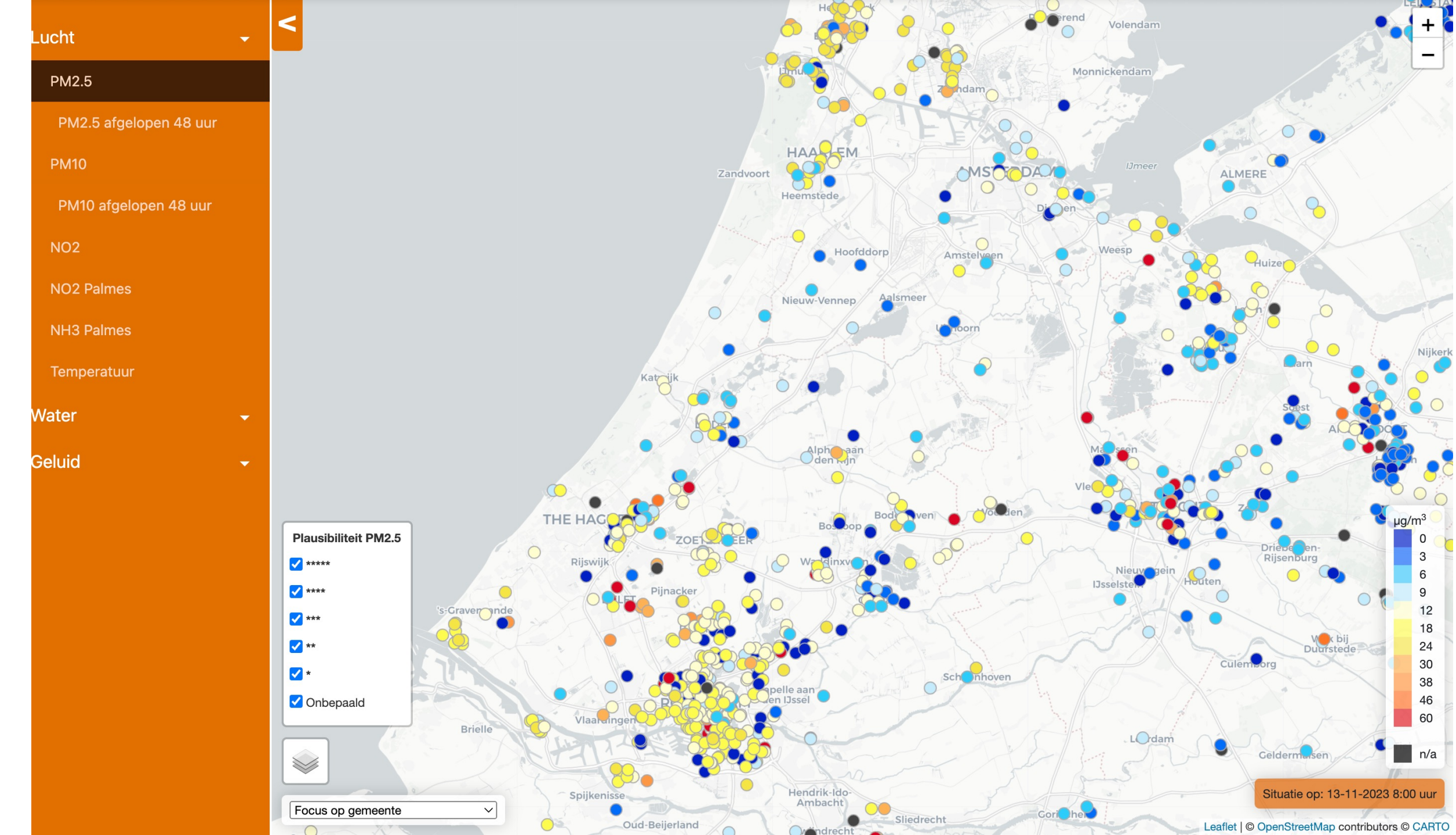


GLOBAL

LOCAL

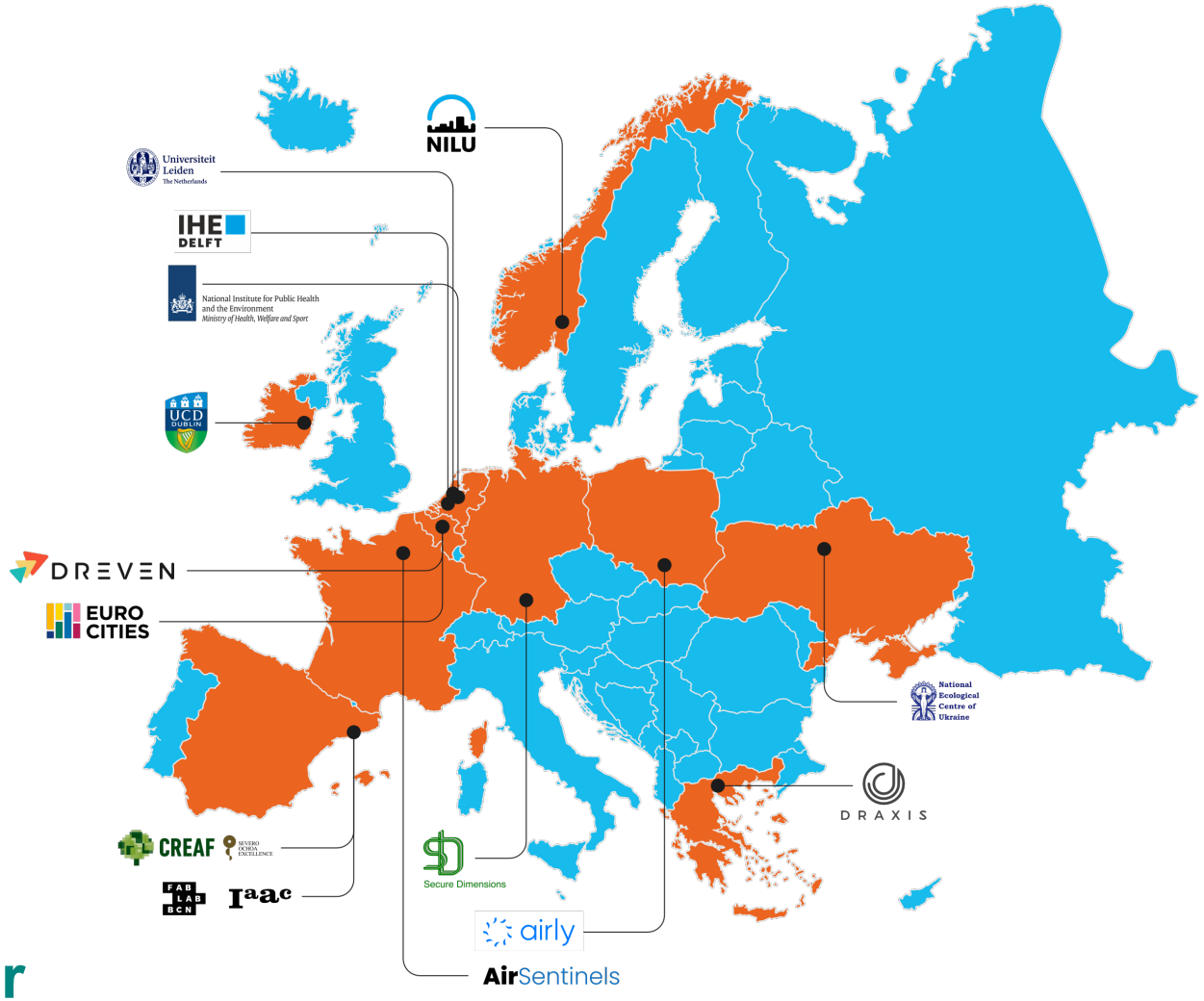


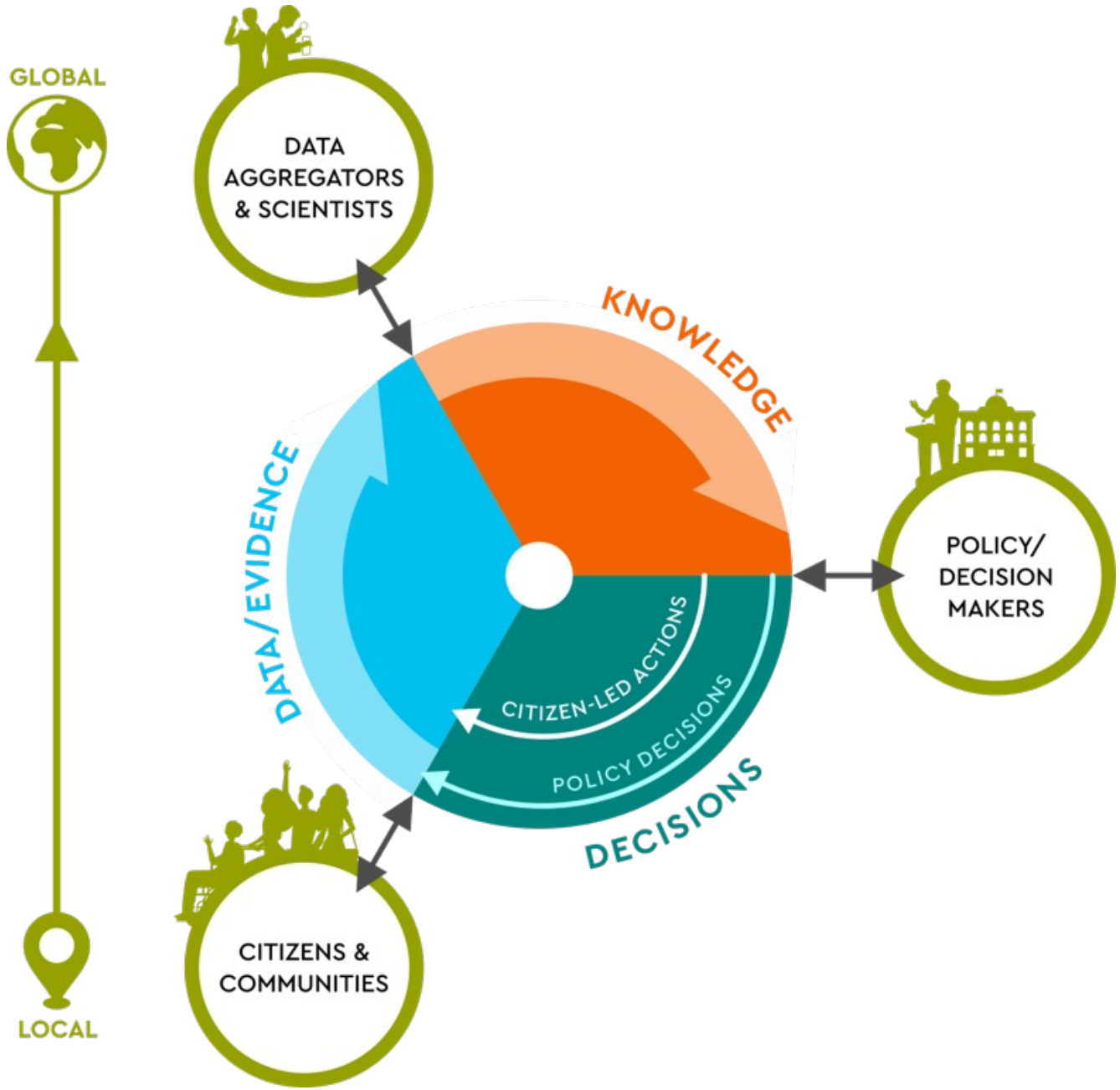

GO EUROPE!
PLASTIC PIRATES
The Campaign
Participate
Results
About us
Press
Contact
Europe
1891
3
69
Leaflet | © OpenStreetMap contributors


Lucht
PM2.5
PM2.5 afgelopen 48 uur
PM10
PM10 afgelopen 48 uur
NO2
NO2 Palmes
NH3 Palmes
Temperatuur
Water
Geluid
Plausibiliteit PM2.5
*****
****
***
**
*
Onbepaald
Focus op gemeente
µg/m3
0
3
6
9
12
18
24
30
38
46
60
n/a
Situatie op: 13-11-2023 8:00 uur
Leaflet | © OpenStreetMap contributors © CARTO

CitiObs

Enhancing Citizen Observatories for healthy, sustainable, resilient and inclusive cities





CitiObs

Working Together for Better Air Quality

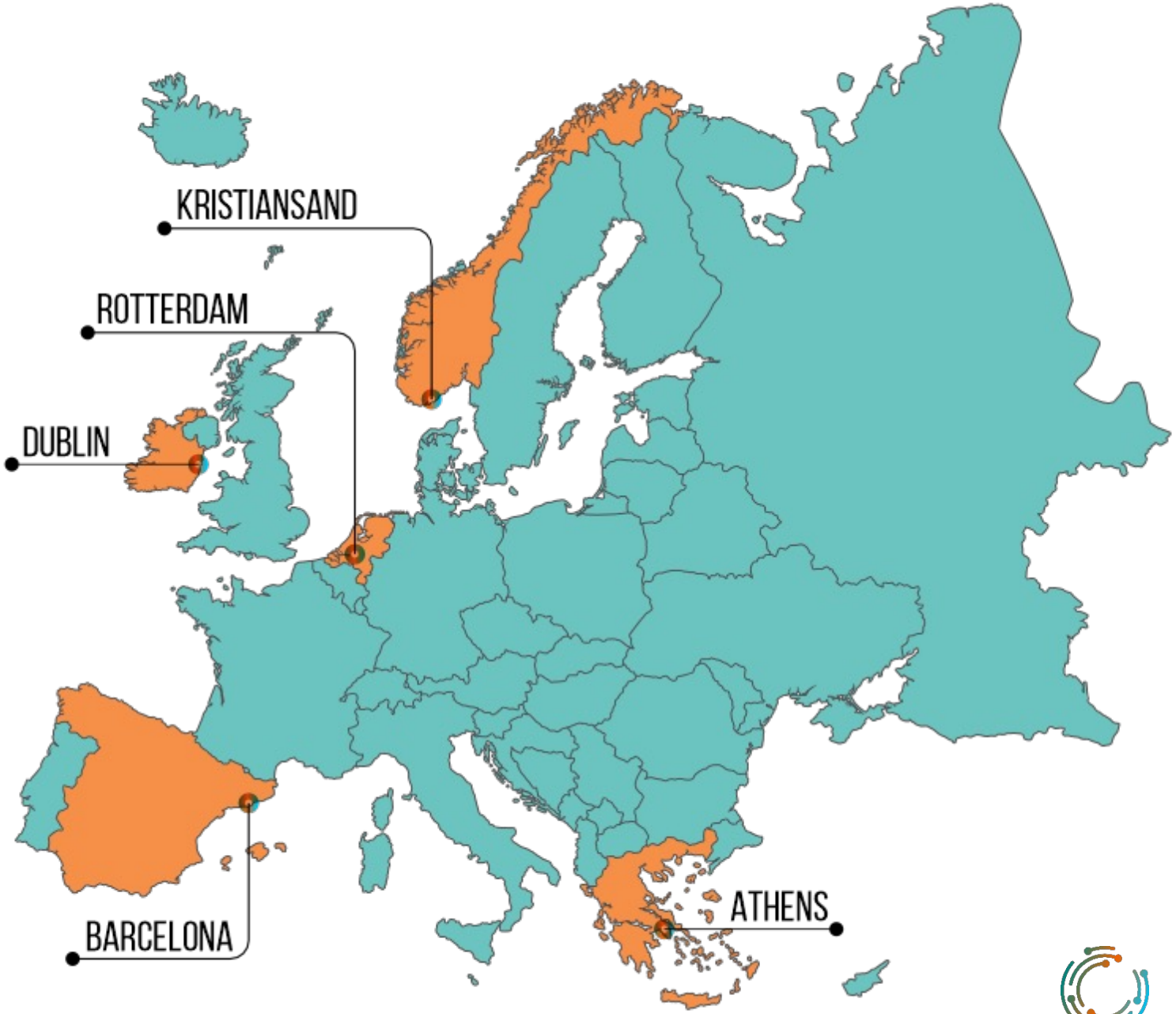
- Pathway 1 - DATA
- Pathway 2 - PEOPLE
- Pathway 3 - SYSTEMS

CitiObs

5 Frontrunner Cities

20 Implementer Cities

50 Fellow Cities



citizen science lab

m.j.gold@cwts.leidenuniv.nl