European Commission

#HorizonEU

HORIZON EUROPE POLICY SUPPORT FACILITY

2021 – 2027

OPEN SCIENCE CONFERENCE

STOCKHOLM,

16 – 17 MAY, 2023

ALAN IRWIN & MARGARET GOLD

Research and Innovation

Introduction - Alan Irwin

THE MUTUAL LEARNING EXERCISE ON CITIZEN SCIENCE

European Commission

Aims

THE MUTUAL LEARNING EXERCISE ON CITIZEN SCIENCE

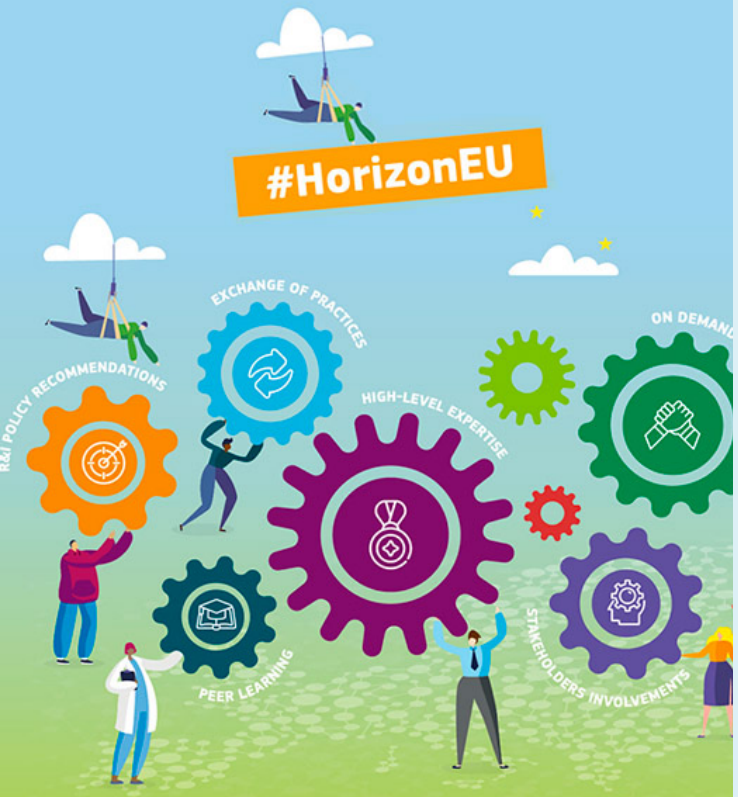
The main aim of the MLE has been to **identify and promote good practices**, **experience and lessons learned,** in addition to policies and programmes for Citizen Science among 11 participating countries.

The MLE therefore aims to **achieve greater societal impact** and **increase trust in science** through the leveraging of **collective societal capabilities and insights**, and

to **enlarge the scope and impact** of Research and Innovation through **increased societal relevance, responsiveness and transparency.**

HORIZON EUROPE

POLICY SUPPORT FACILITY



European Commission

Eleven Participants

Sweden

Norway

Germany

Belgium

France

Austria

Hungary

Slovenia

Italy

Romania

Portugal

HORIZON EUROPE

POLICY SUPPORT FACILITY

European Commission

Chair

Alan Irwin

Rapporteur

Margaret Gold (Rapporteur and Expert on Topic 4)

Independent Experts

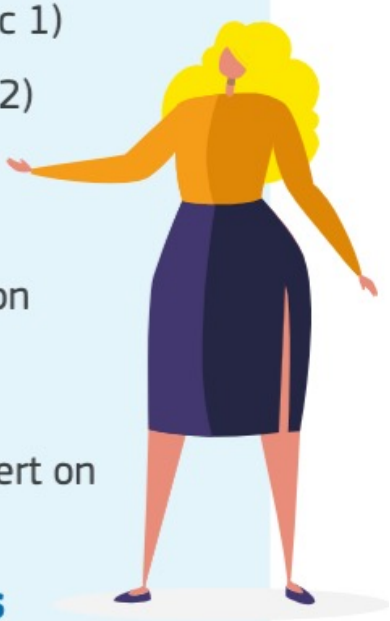
Muki Haklay (Expert on Topic 1)

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 R&I Policy Officers

Annamaria Zonno (Policy Support Facility)
Annamaria.ZONNO@ec.europa.eu

Gabriella Leo (Open Science)
Gabriella.LEO@ec.europa.eu

Six Interactive Workshops

THE MUTUAL LEARNING EXERCISE ON CITIZEN SCIENCE

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Five Core Topics

THE MUTUAL LEARNING EXERCISE ON CITIZEN SCIENCE

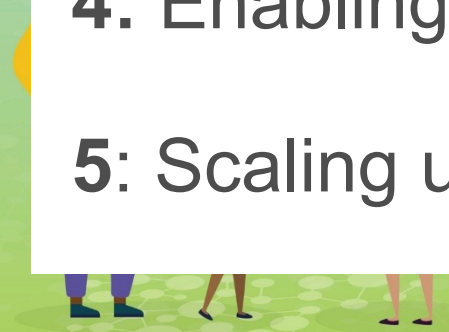
1: Introduction and overview on citizen science

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



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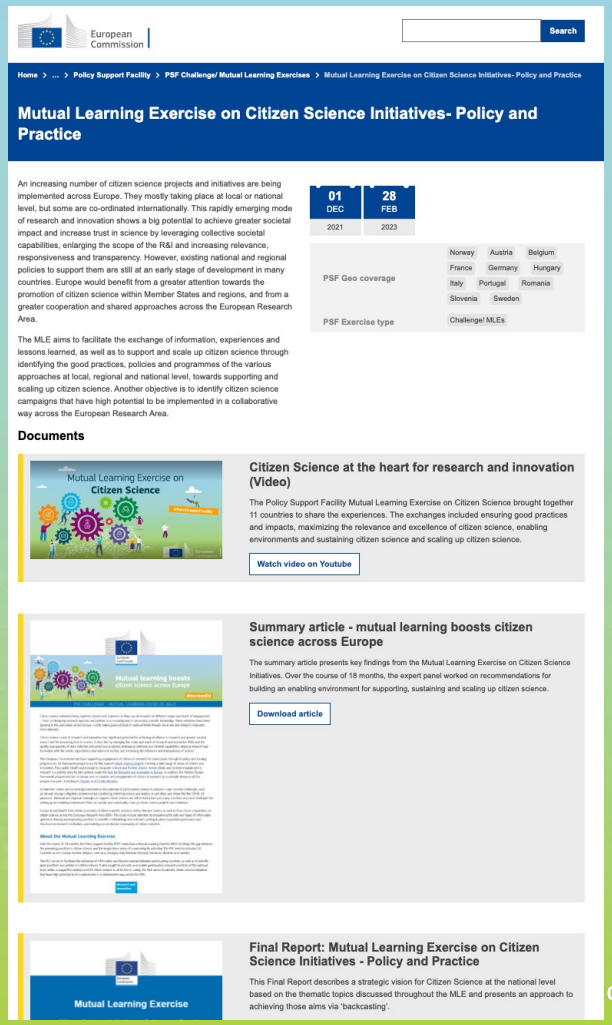
Repository of Outputs

THE MUTUAL LEARNING EXERCISE ON CITIZEN SCIENCE

https://tinyurl.com/psf MLE cs



Outcomes – Margaret Gold

THE MUTUAL LEARNING EXERCISE ON CITIZEN SCIENCE

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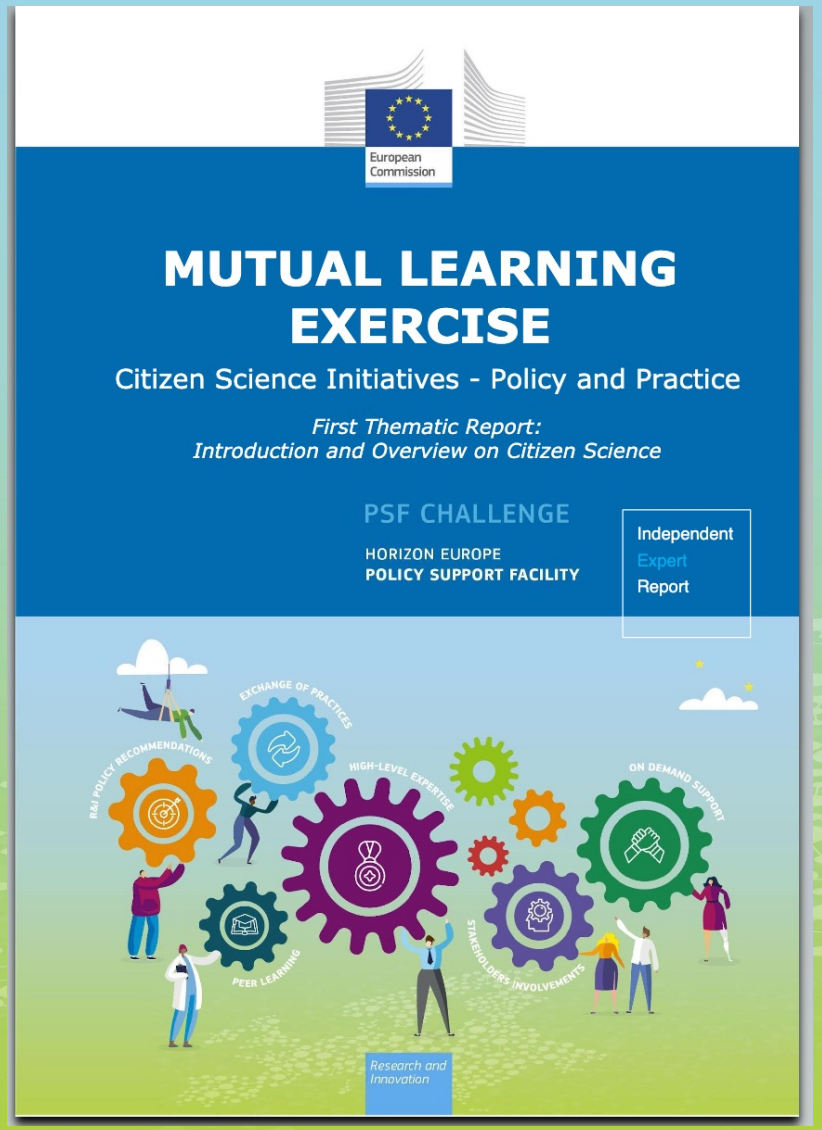
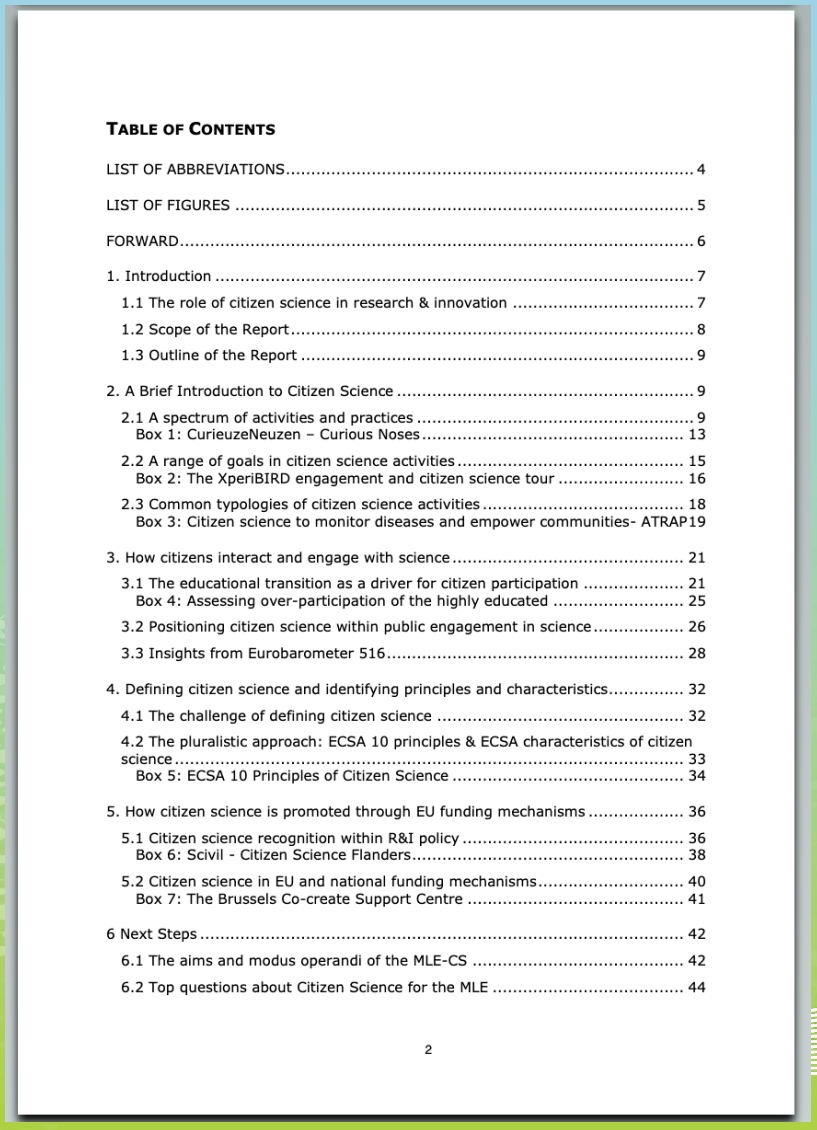
TOPIC 1 – INTRODUCTION & OVERVIEW





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The range of participatory practices is wide and diverse

- Contractual
- Contributory
- Collaborative
- Co-created
- Collegial

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And there are many levels of engagement and participation

- **‘Extreme’ Citizen Science**
- **Participatory Science**
- **Distributed Intelligence**
- **Crowdsourcing**

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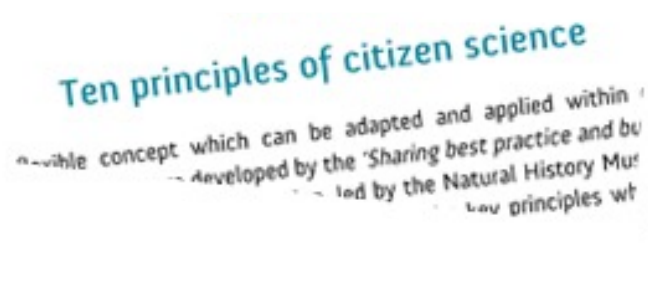
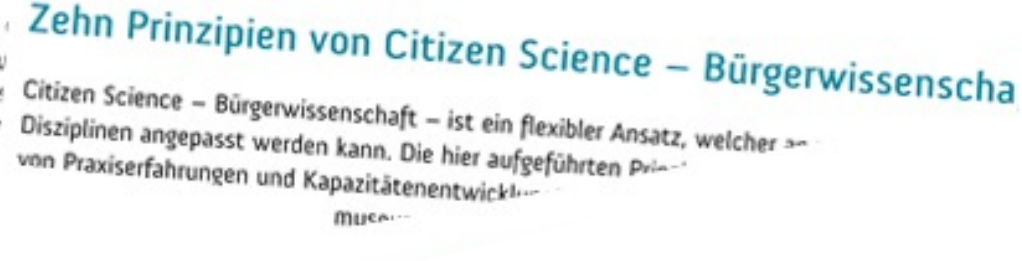
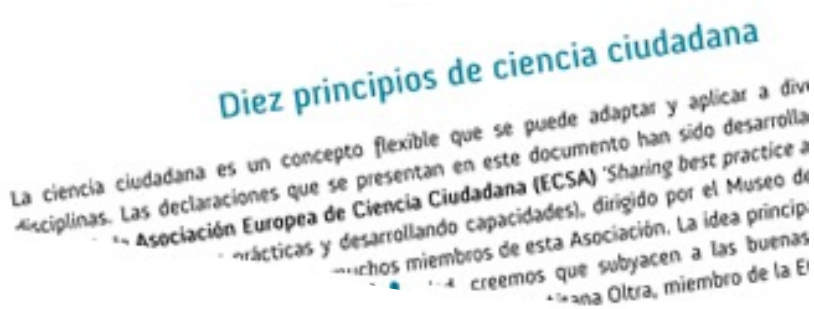
European Citizen Science Association

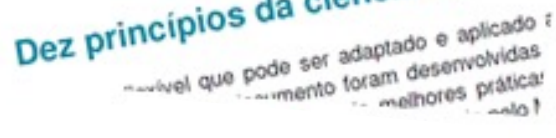
The 10 Principles of Citizen Science

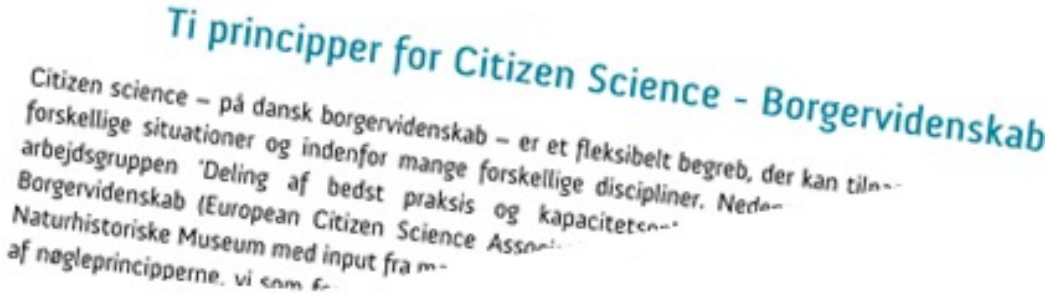

Ten principles of citizen science

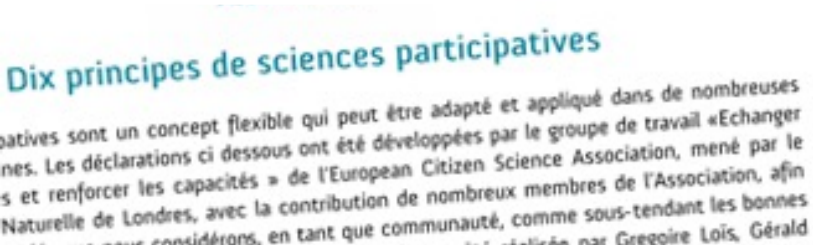

Zehn Prinzipien von Citizen Science – Bürgerwissenscha


Diez principios de ciencia ciudadana


Dieci principi di Citizen Science


Dez princípios da ciência cidadã


Ti principper for Citizen Science - Borgervidenskab


Dix principes de sciences participatives


Deu principis de ciència ciutadana


Deset principů občanské vědy

CITIZEN SCIENCE PROJECTS ACTIVELY INVOLVE CITIZENS IN SCIENTIFIC ENDEAVOUR THAT GENERATES NEW KNOWLEDGE OR UNDERSTANDING

1

Citizens may act as contributors, collaborators, or as project leader and have a meaningful role in the project.

ecsa European Citizen Science Association

CITIZEN SCIENCE PROJECTS HAVE A GENUINE SCIENCE OUTCOME

2

For example, answering a research question or informing conservation action, management decisions or environmental policy.

ecsa European Citizen Science Association

BOTH THE PROFESSIONAL SCIENTISTS AND THE CITIZEN SCIENTISTS BENEFIT FROM TAKING PART

3

Benefits may include the publication of research outputs, learning opportunities, personal enjoyment, social benefits, satisfaction through contributing to scientific evidence e.g. to address local, national and international issues, and through that, the potential to influence policy

What terminology do YOU use to describe participatory practices and citizen engagement?

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https://europa.eu/eurobarometer/surveys/detail/2237

What Europeans think about science and technology

Special Eurobarometer 516

How citizens engage with science and technology

59%
watch documentaries, or read science and technology-related publications, magazines or books

55%
talk about science and technology-related issues **with family or friends**

33%
visit science and technology **museums**

19%
sign petitions or **join demonstrations** on science and technology matters

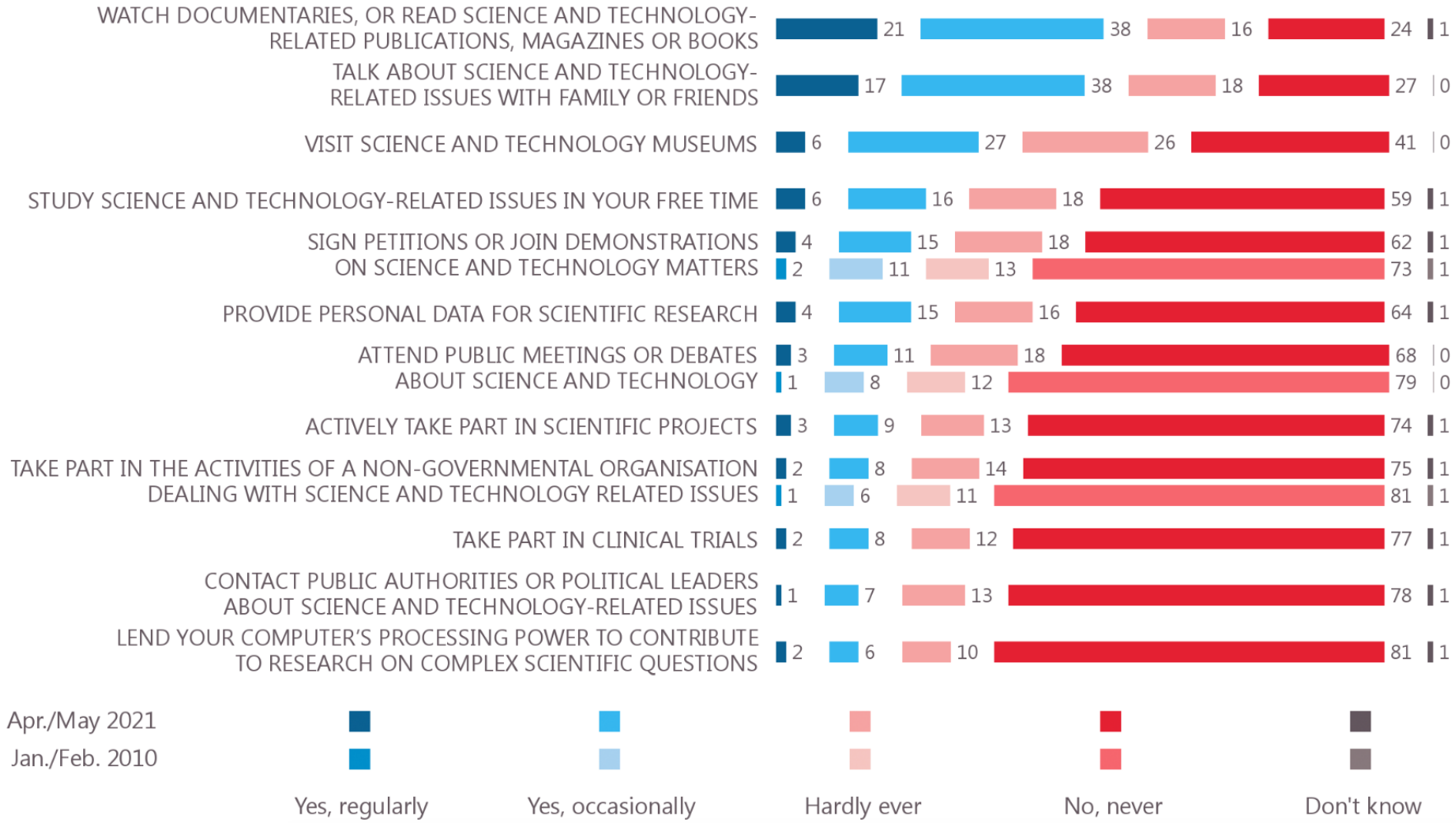
14%
attend **public meetings or debates** about science and technology

12%
actively **take part** in scientific projects

8%
contact **public authorities or political leaders** about science and technology-related issues

Impressive - and increasing - engagement

QA14 And now, a few questions on how you engage with science and technology issues. Do you
(% - EU27)



Source: Special Eurobarometer 516 – "European citizens' knowledge and attitudes towards science and technology". Fieldwork: April – May 2021, sample: EU27 data (26,827 respondents)

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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*

IN THE FIELD AT HOME & ABROAD

MLE CASE STUDIES

museum NATURALSCIENCES.BE

IN THE FIELD AT HOME & ABROAD

MLE CASE STUDIES

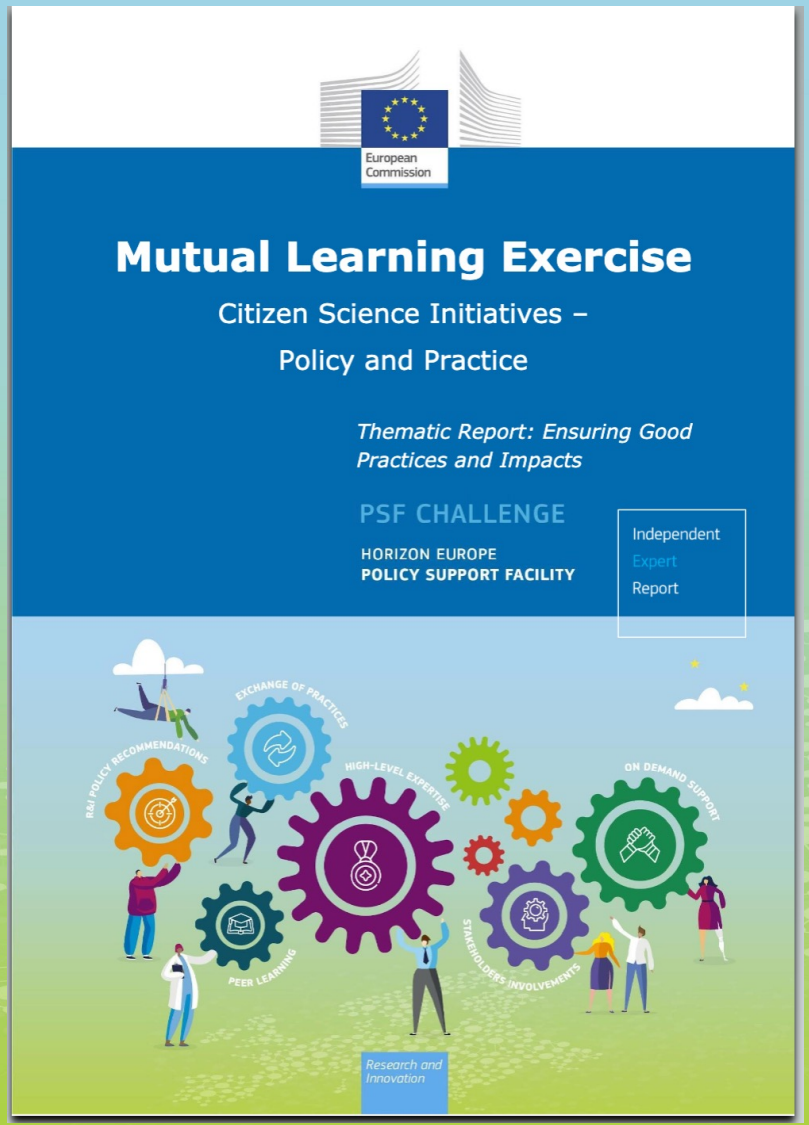
AFRICA museum

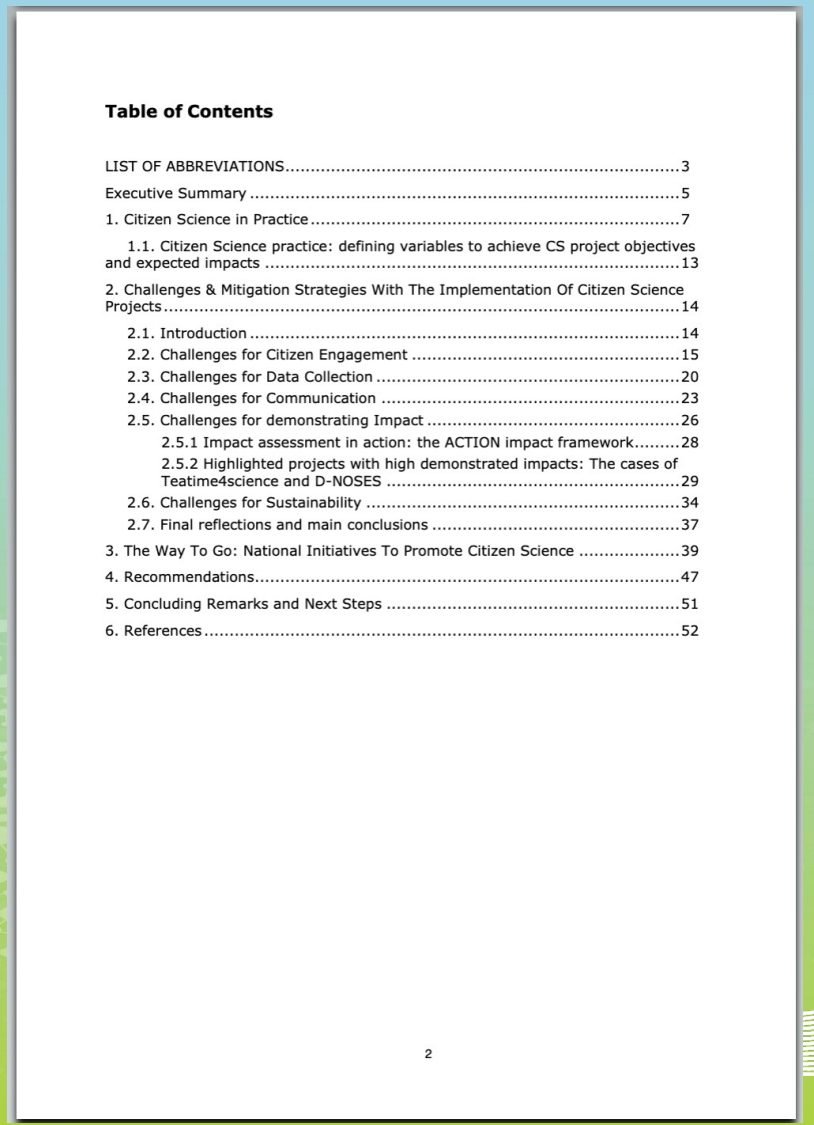
IN THE FIELD AT HOME & ABROAD

MLE CASE STUDIES

AFRICA museum

TOPIC 2 – GOOD PRACTICE & IMPACTS





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CHALLENGES & SUCCESS VARIABLES

MLE WORKSHOPS

Variable 1: **Citizen Engagement & Participation**

Variable 2: **Data Quality & Openness**

Variable 3: **Communication Efforts**

Variable 4: **Sustainability over the longer term**

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e.g. LEVELS OF PARTICIPATION

MLE WORKSHOPS

Level of participation											
Austria	Belgium	France	Germany	Hungary	Italy	Italy	Norway	Portugal	Romania	Slovenia	Sweden
					Unknown						
				Unknown	Unknown						
					Unknown						

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e.g. ENGAGEMENT STRATEGIES

MLE WORKSHOPS

Engagement strategies											
Austria	Belgium	France	Germany	Hungary	Italy	Italy	Norway	Portugal	Romania	Slovenia	Sweden
Unknown					Unknown	Unknown				Unknown	
Yes	Yes	No	No	Unknown	Unknown	Unknown		Yes	No	No	Yes
	Yes	No	No	Unknown	Unknown	Unknown		Yes	No	No	

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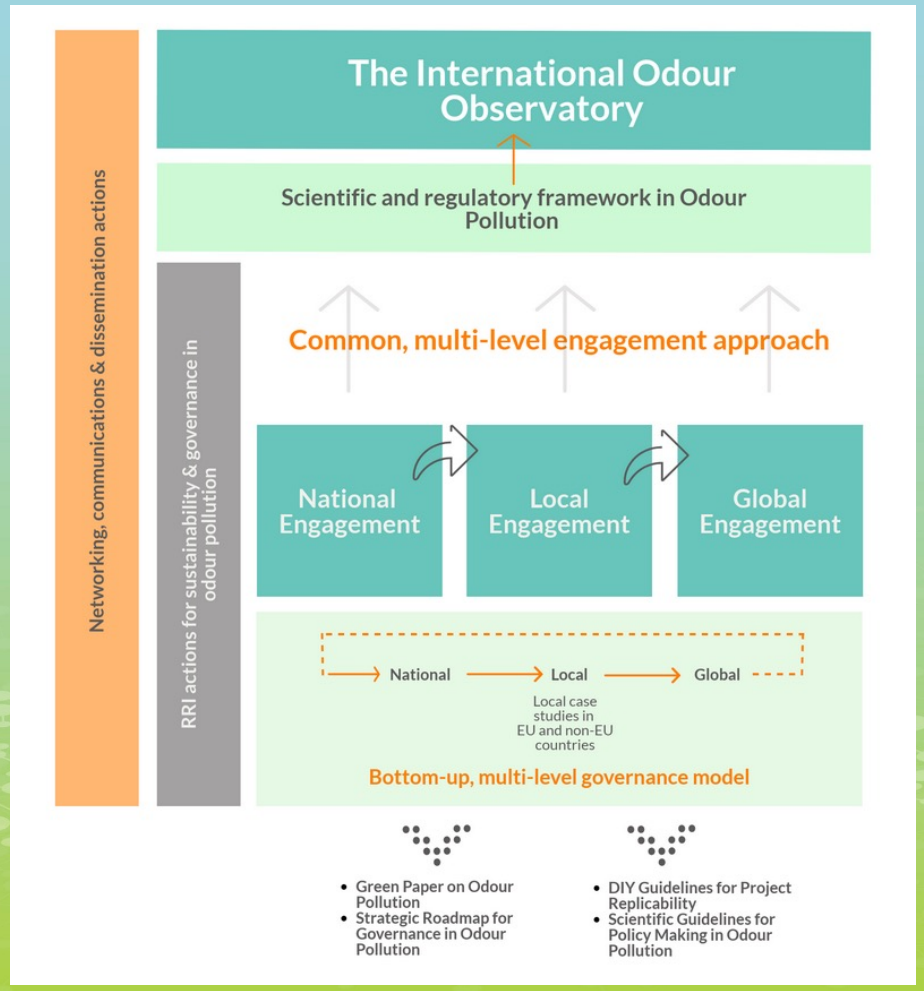
‘ACTION PROJECT’ IMPACT FRAMEWORK

MLE CASE STUDIES

THE ‘D-NOSES’ CASE STUDY

MLE CASE STUDIES



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The Participants' Top-10

1. Work on recognition and institutional barriers
2. Facilitate training and capacity building
3. Launch specific funding calls
4. Include specific evaluation criteria in general calls
5. Build common repositories, observatories or platforms
6. Launch calls for replication and upscaling of ongoing projects
7. Increase & strengthen new & existing networks
8. Use cascade funding schemes
9. Promote common data infrastructures
10. Support CS practices through incubator model

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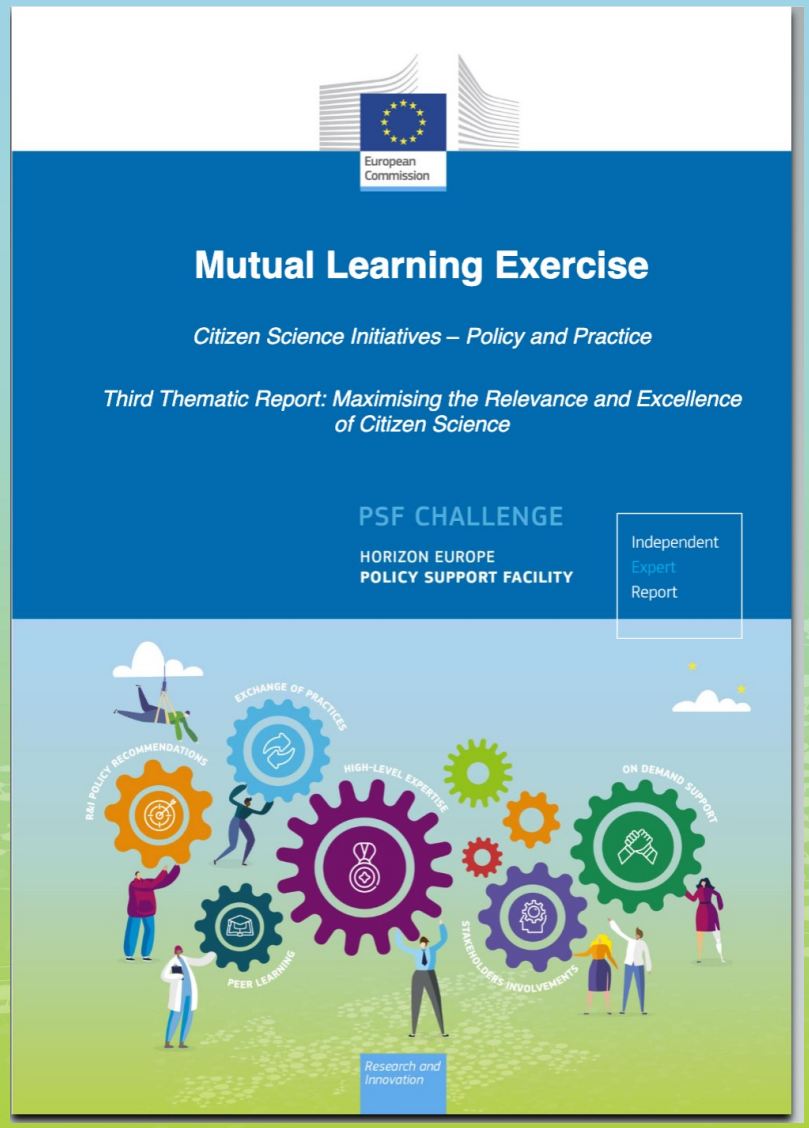
TOPIC 3 – RELEVANCE & EXCELLENCE



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FACTORS OF EXCELLENCE

MLE WORKSHOPS

Factor 1: **Align with and support the Sustainable Development Goals (SDGs)**

Factor 2: **Consider and address novel ethical issues**

Factor 3: **Manage data in line with the FAIR principles in order to impact policy**

CS CONTRIBUTION TO THE SDGS

MLE CASE STUDIES

- Defining targets and metrics and improving reporting coverage
- Monitoring progress and closing data gaps in a more cost-effective way
- Fostering actions towards implementing and achieving the SDGs

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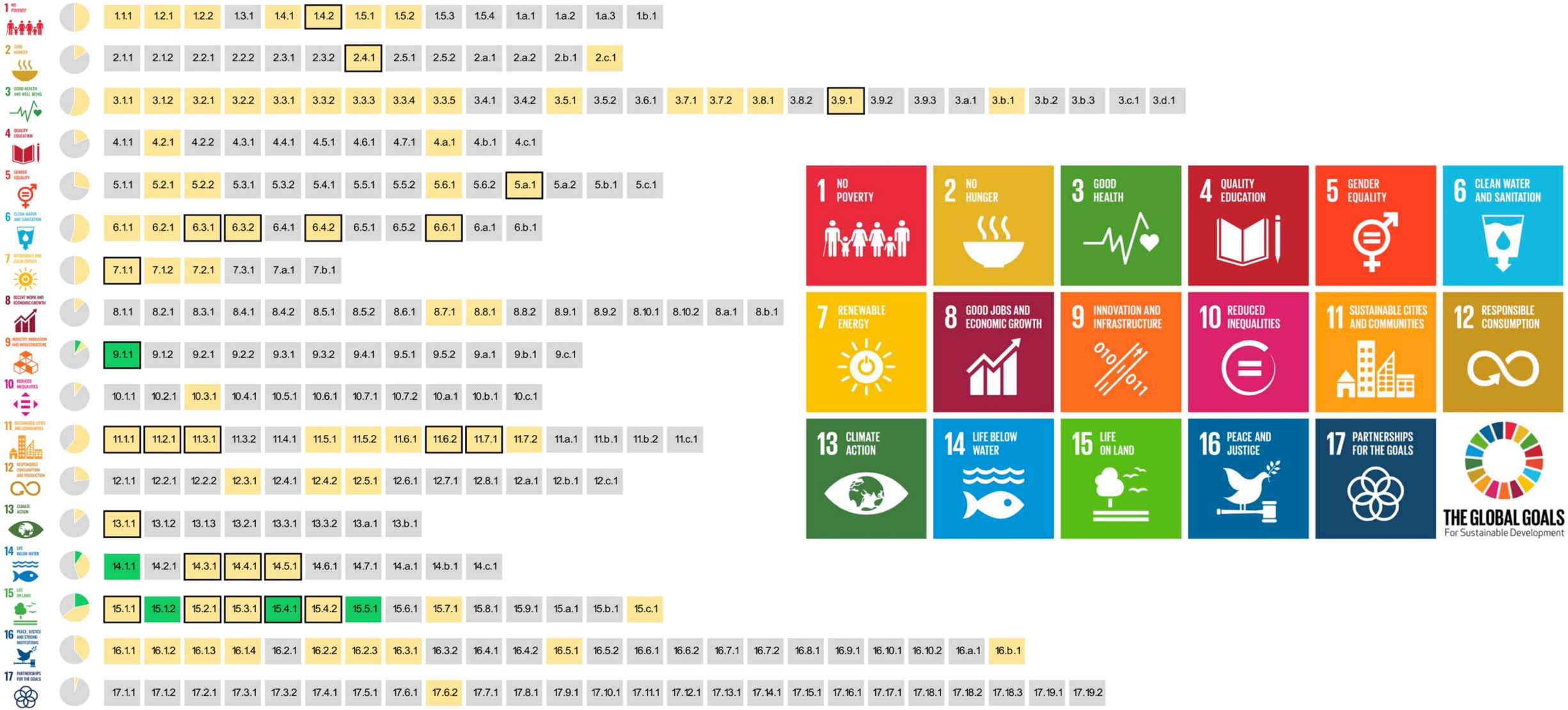
The SDG indicators where citizen science *projects* are 'already contributing', 'could contribute' or where there is 'no alignment'



Fraisl, D., Campbell, J., See, L. *et al.* Mapping citizen science contributions to the UN sustainable development goals. *Sustain Sci* **15,** 1735–1751 (2020). https://doi.org/10.1007/s11625-020-00833-7

CS CONTRIBUTION TO THE SDGS

MLE CASE STUDIES

CS CONTRIBUTION TO THE SDGS

MLE CASE STUDIES

- Ghana is the first country to report on SDG indicator 14.1.1b
- ….and the first country to use citizen science data for that purpose.
- Ghana’s Integrated Coastal and Marine Policy makes use of this data
- local data collection efforts are connected with global monitoring processes

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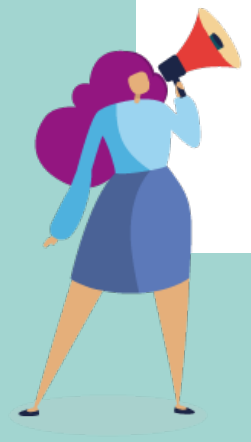
Key Participant Recommendation

Use the momentum of the Agreement on Reforming Research Assessment (and CoARRA) to bring Citizen Science explicitly into the definition of ”excellence” in R&I and Science.



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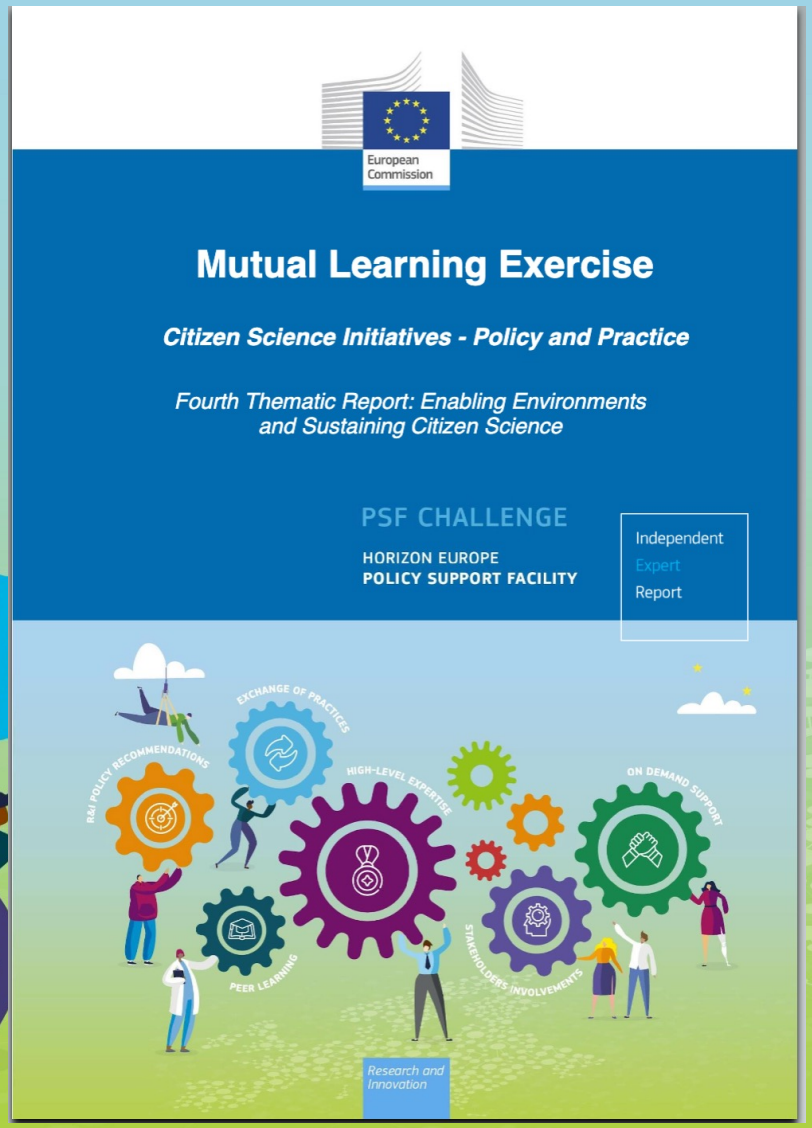
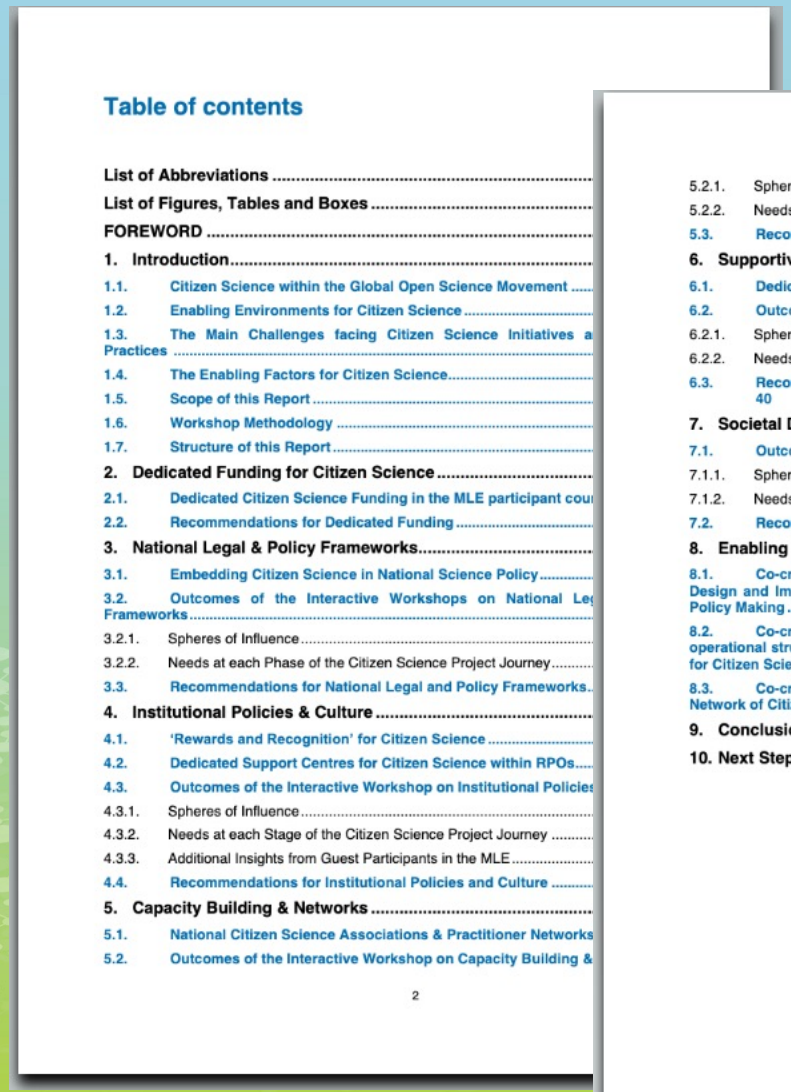
TOPIC 4 – ENABLING ENVIRONMENTS





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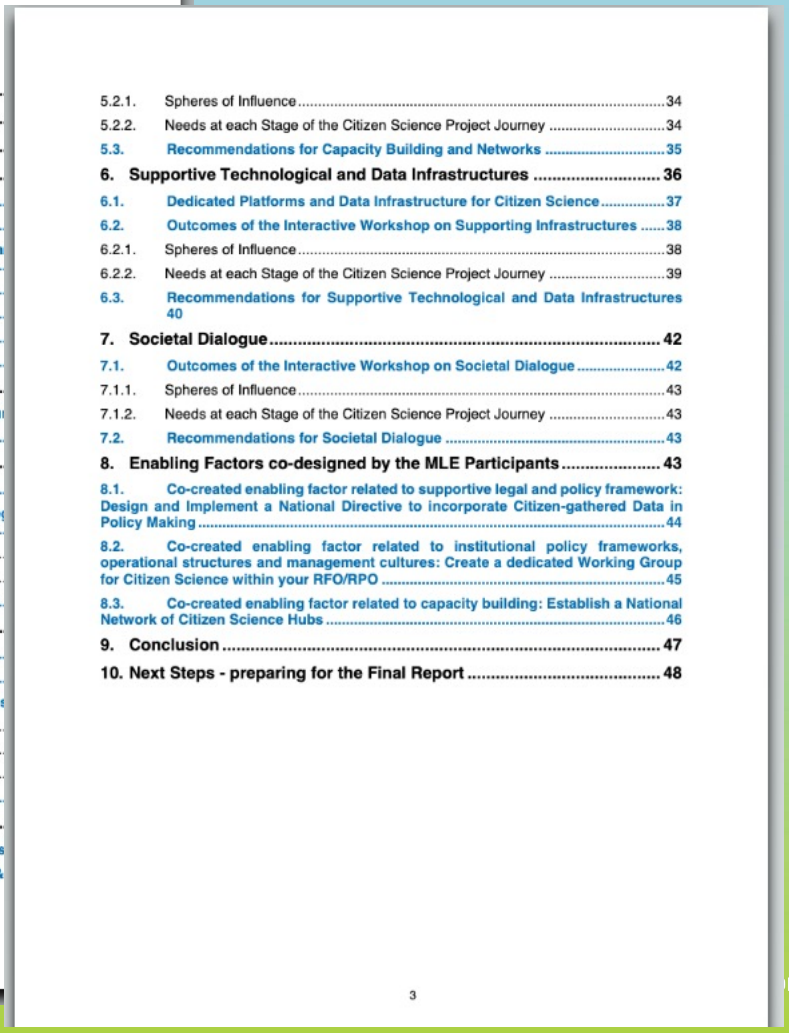


3

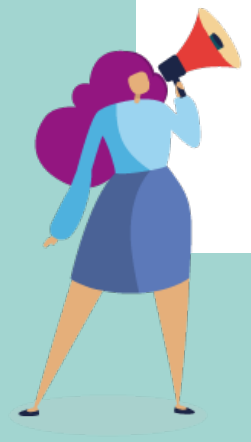
What is an Enabling Environment?

the factors that enable Citizen Science initiatives

to be launched, sustained,

grow and thrive – and ultimately achieve

their aimed-for impacts and outcomes



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Legal & Policy Frameworks

Internal Policies & Culture

Capacity Building & Networks

Supporting (Data) Infrastructure

Societal Dialogue

DEDICATED FUNDING

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CITIZEN SCIENCE FOR POLICY ACROSS EUROPE

eu-citizen.science

CARMEN CASTRESANA

SPAIN

PROMOTING CITIZEN SCIENCE THROUGH THE LAUNCH OF NATIONAL PLANS FOR FUNDING CITIZEN SCIENCE PROJECTS

SUBMISSIONS GROW YEAR BY YEAR

GOVERNMENT SUPPORT IS KEY FACTOR

GRANTS = COMMUNICATION

DISSEMINATION

ADAPTING THE MESSAGE TO THE AUDIENCE

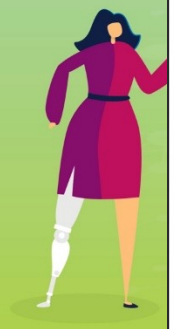
UNDERSTANDING SCIENCE HAS BECOME IMPORTANT

IN SPAIN, IT'S BECOMING COMMON TO INCLUDE CITIZENS, IT'S A NECESSITY

CULTURE CHANGE

1. FOSTER CITIZEN SCIENCE
2. SPECIFIC MODALITY CALL
3. CS IN SPANISH STRATEGY 2021-2027

THIS IMAGE IS A VISUAL SUMMARY OF A PRESENTATION GIVEN AT THE EVENT "CITIZEN SCIENCE FOR POLICY ACROSS EUROPE" HELD ON 22 JUNE 2021 ORGANISED BY EU-CITIZEN.SCIENCE.



CS CONTRIBUTION TO THE SDGS

MLE CASE STUDIES

opean
mission

What are YOUR own local examples of support and enabling factors for Citizen Science?

MENTIMETER

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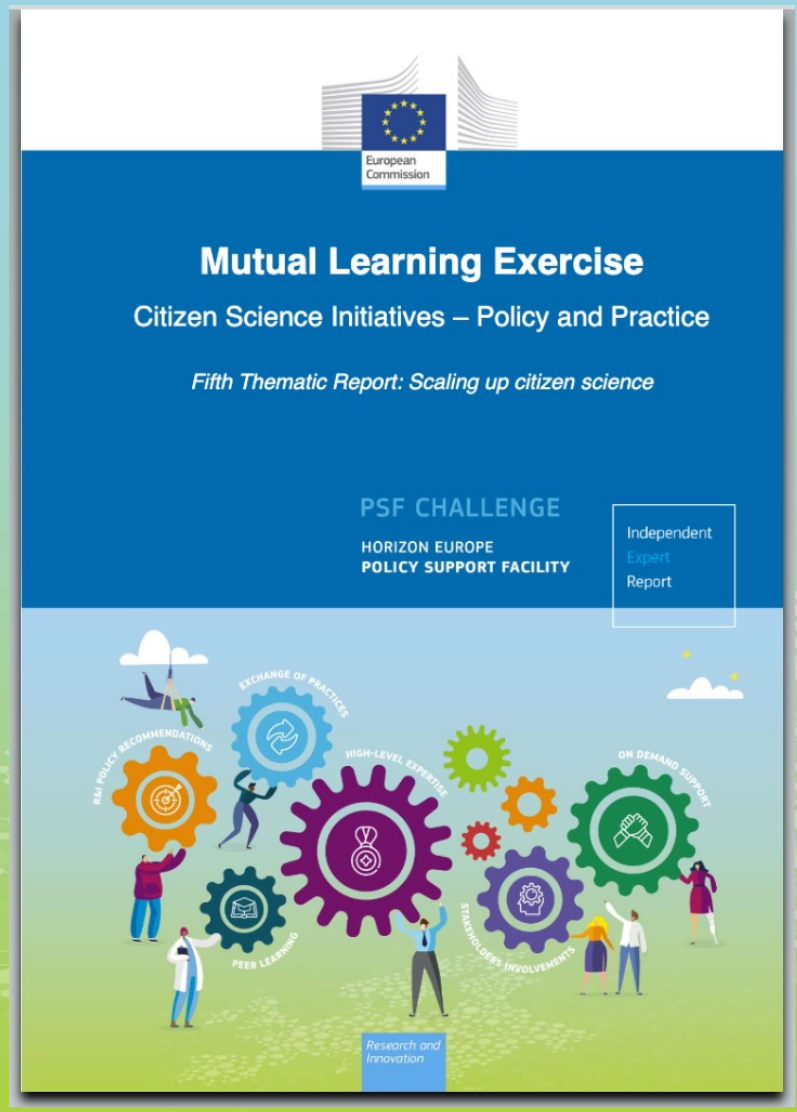
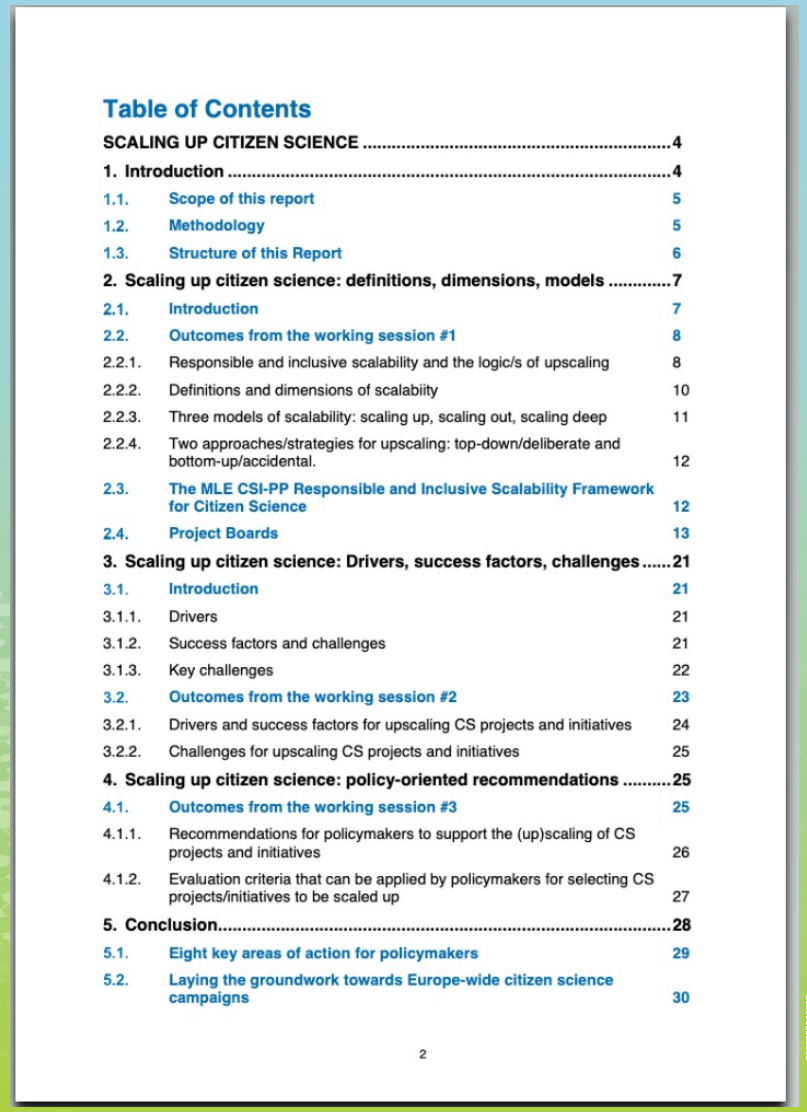
TOPIC 5 – SCALING UP





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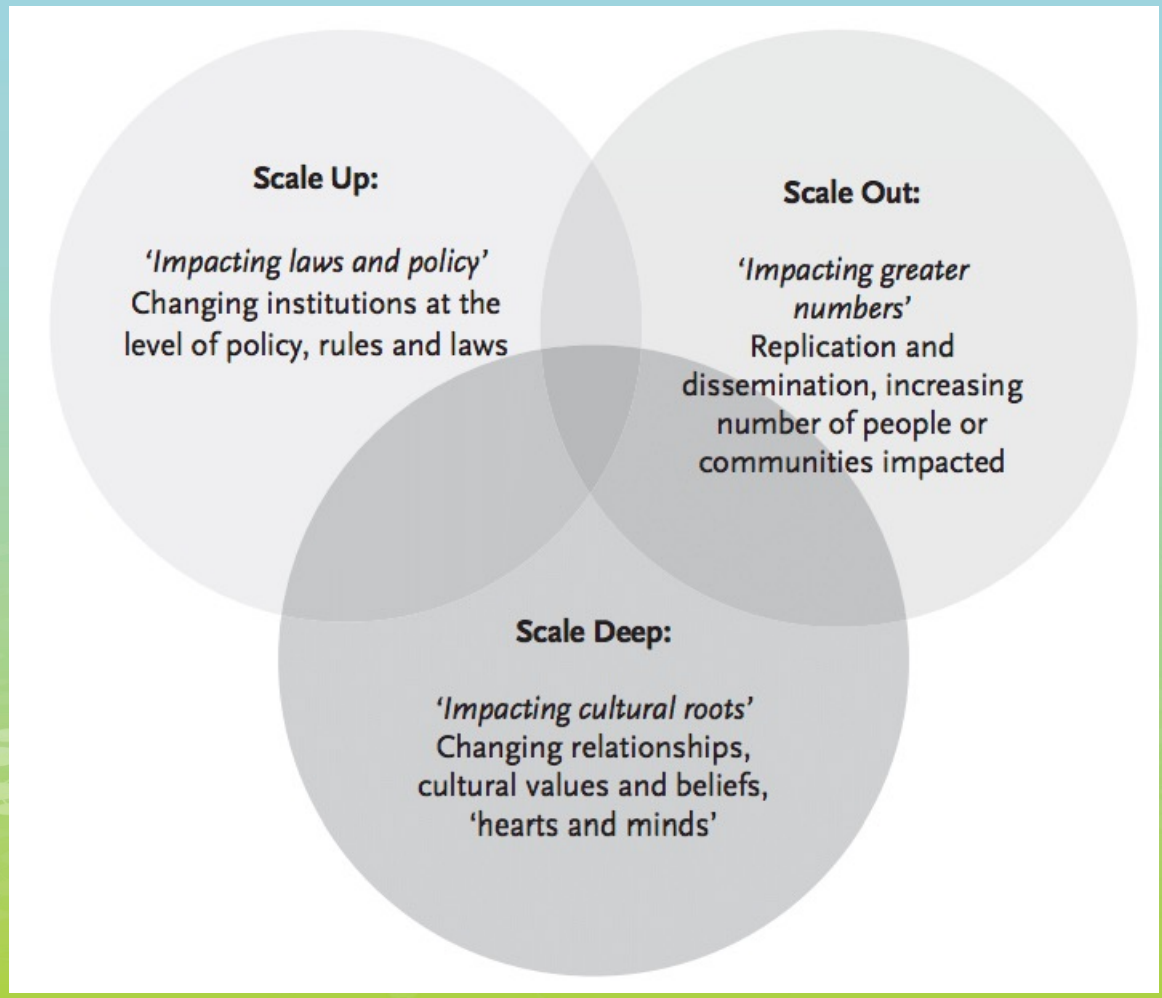
SCALING UP, OUT, DEEP….AND DOWN

MLE WORKSHOPS



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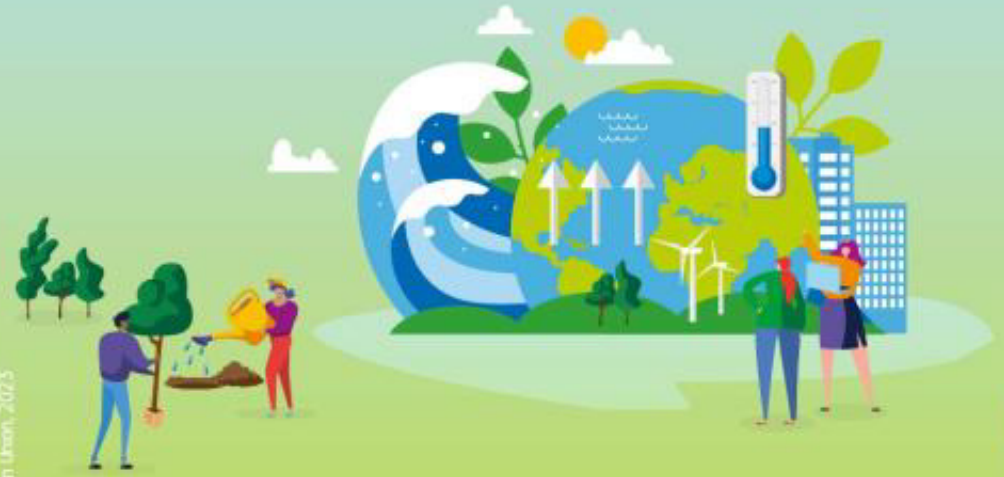
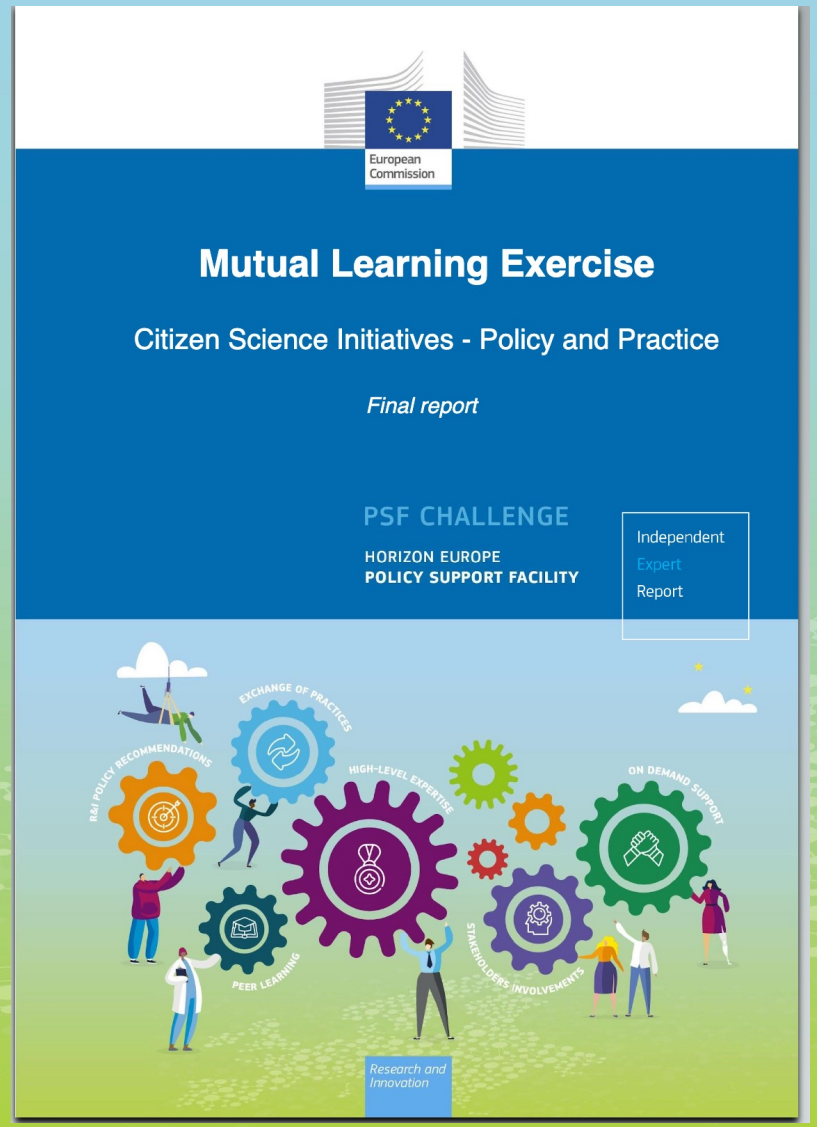
ADVANCED CLIMATE, SCIENCE AND SOLUTIONS



#HEClimate #EUGreenDeal #EUMissions

European Climate, Infrastructure and Environment Executive Agency - CINEA

FINAL REPORT – BACKCASTING



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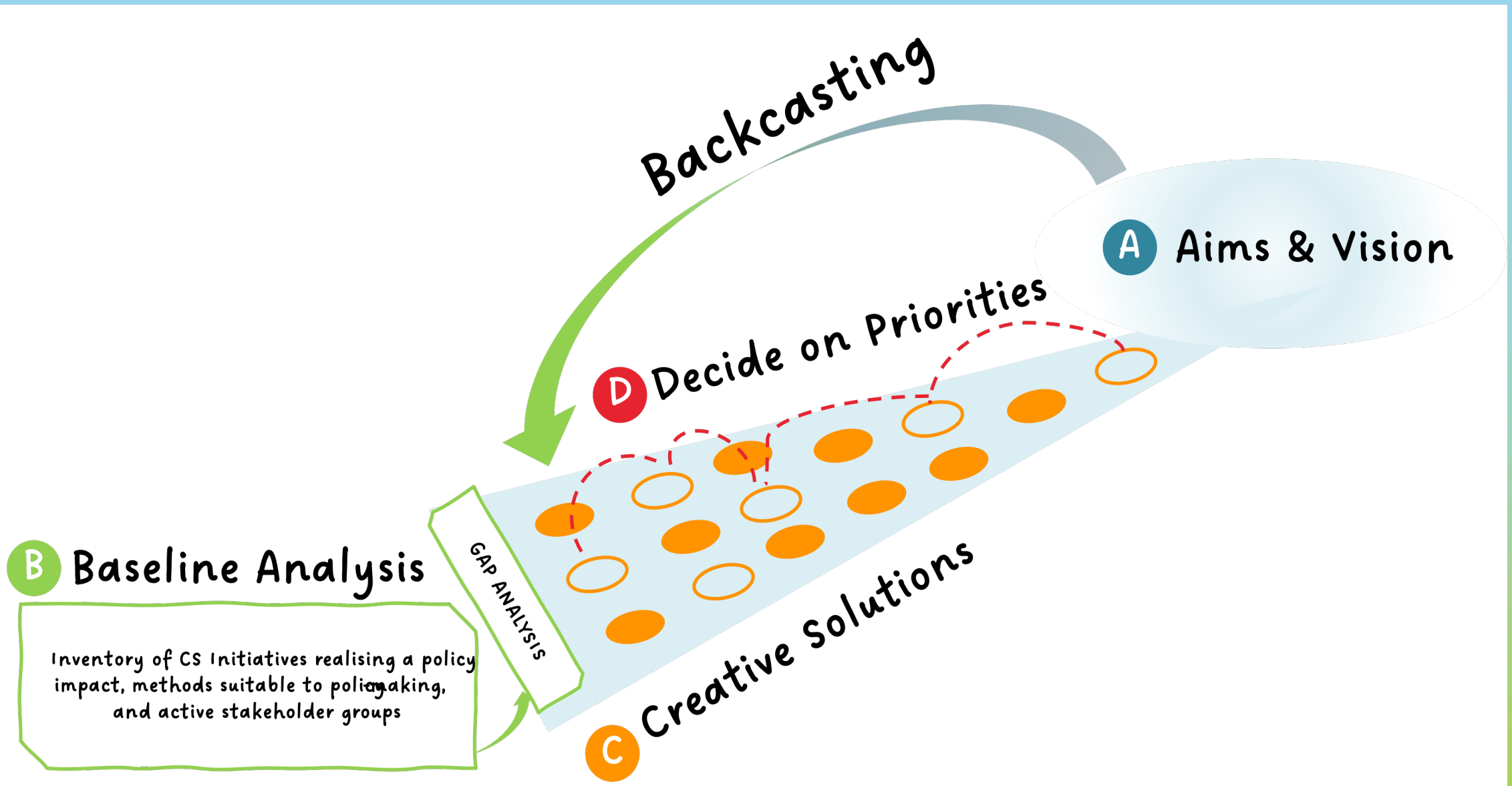
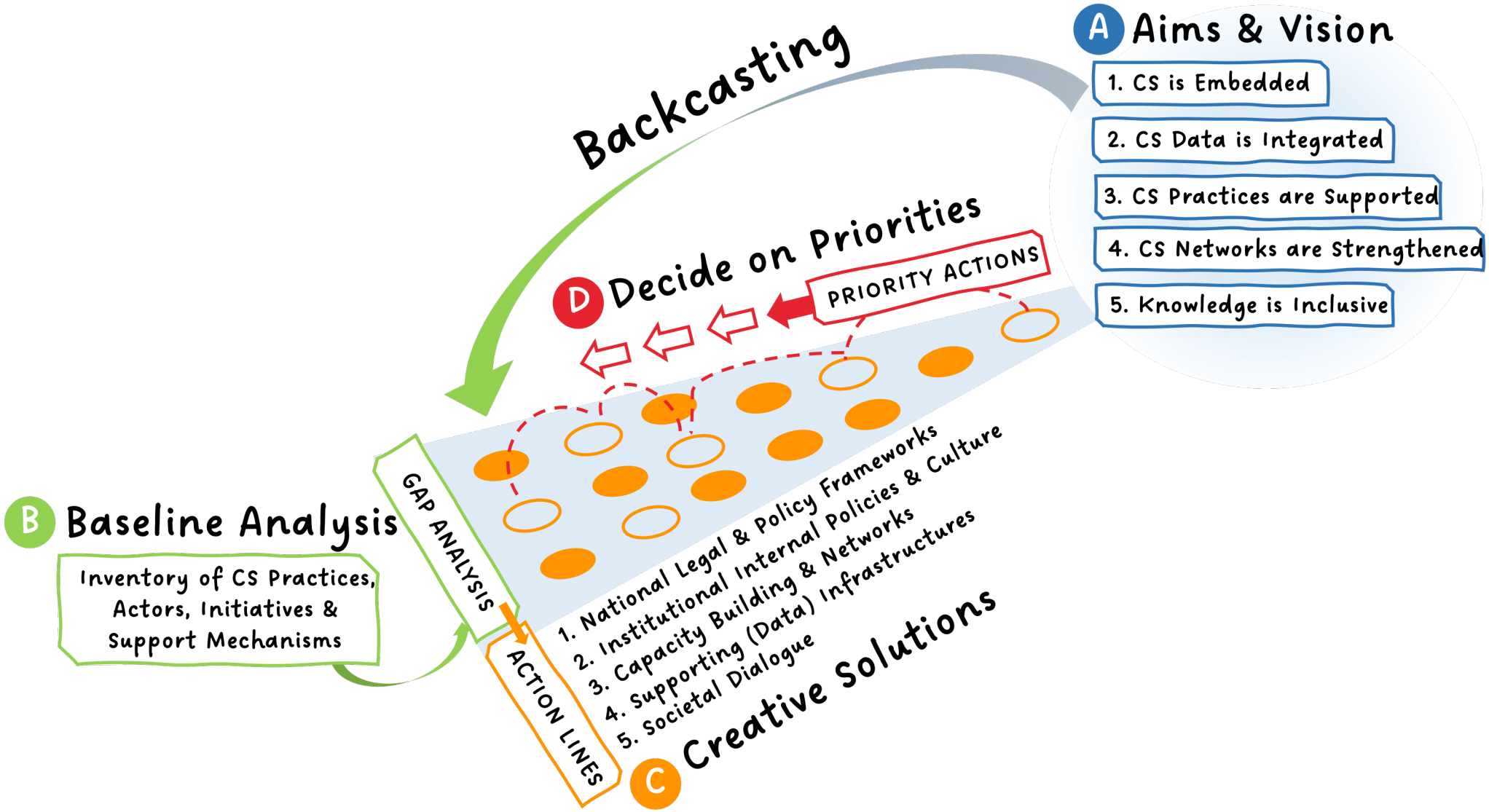
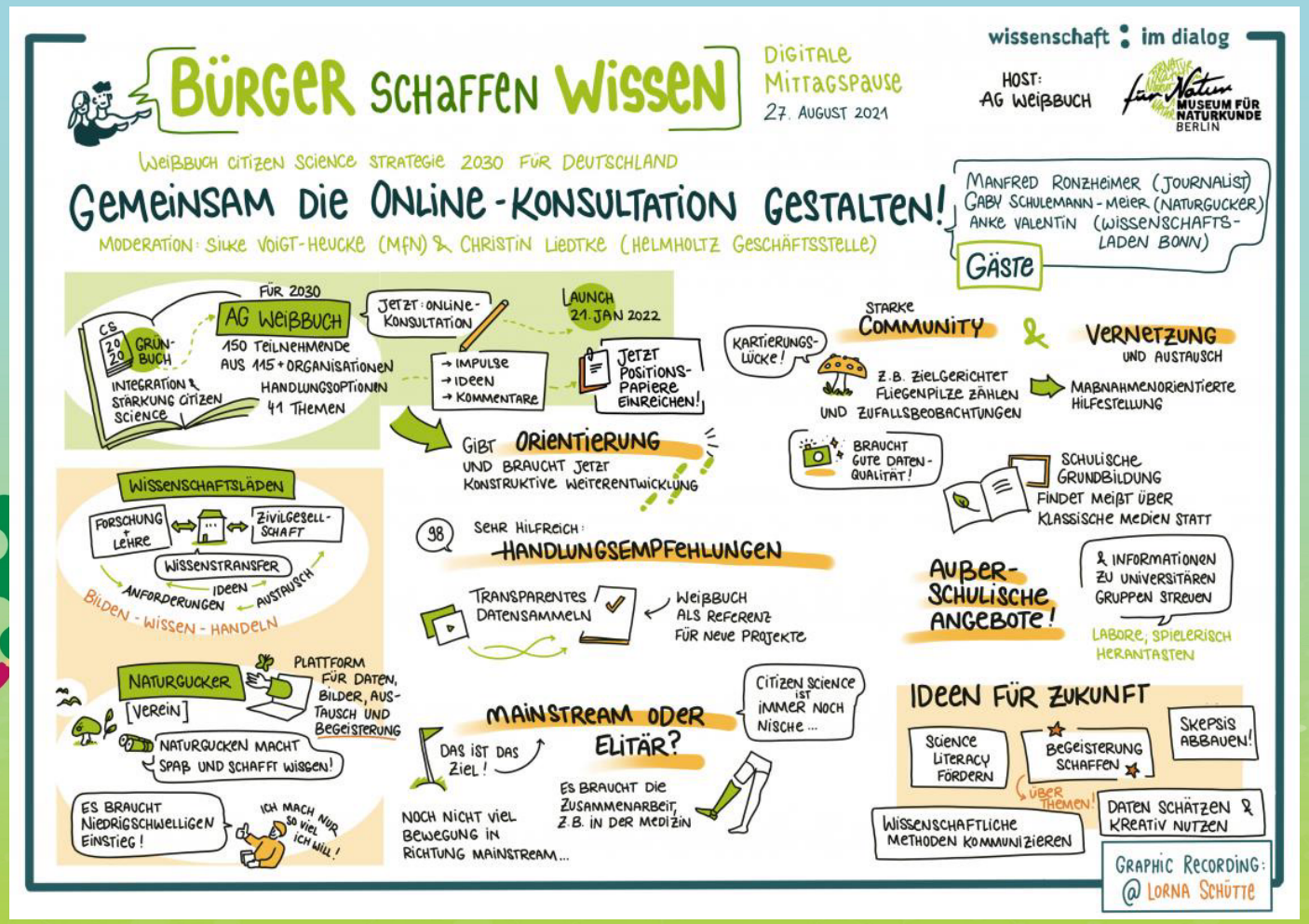

Backcasting
A Aims & Vision
D Decide on Priorities
GAP ANALYSIS
B Baseline Analysis
Inventory of CS Initiatives realising a policy impact, methods suitable to policymaking, and active stakeholder groups
C Creative Solutions


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

Spheres of Influence → / Strategic Aims ↓	Ministries	RFOs	RPOs	RSOs	HEIs
1 (a) Embed Citizen Science as part of mainstream research and innovation processes	✓	✓	✓✓	✓	✓
1 (b) Embed Citizen Science as part of mainstream funding	✓	✓✓			
1 (c) Embed Citizen Science as part of mainstream education	✓	✓	✓		✓✓
2 (a) Integrate Citizen Science Data into mainstream processes for research, policy making and decision making.	✓✓	✓		✓	
2 (b) Build Citizen Science data and technology infrastructure	✓	✓	✓	✓	
3 Support Citizen Science Practices	✓	✓	✓✓	✓✓	✓
4 Strengthen Citizen Science Networks	✓	✓✓	✓	✓	✓
5 Make Knowledge Production Inclusive	✓	✓	✓	✓	✓

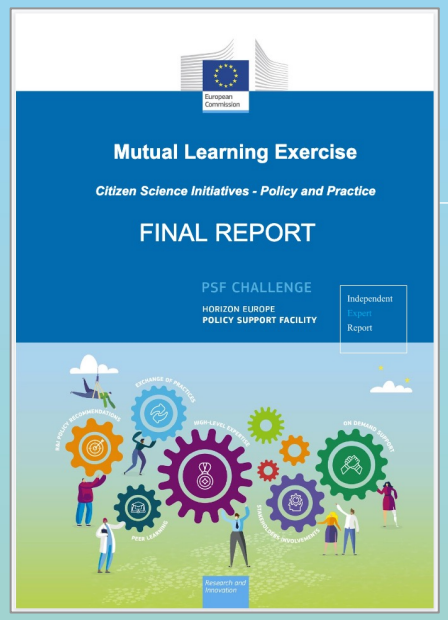
THE GERMAN ‘WEISSBUCH’

MLE CASE STUDIES



THE GERMAN ‘WEISSBUCH’

MLE CASE STUDIES



The Top 4

https://tinyurl.com/MLEcsfinal

1. Support & grow national networks of practitioners
2. Develop & provide dedicated funding instruments
3. Enable the required culture change
4. Invest in supportive infrastructure

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Q & A

THE MUTUAL LEARNING EXERCISE ON CITIZEN SCIENCE

https://tinyurl.com/ psf MLE cs

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