

# The potential of Citizen Science to inform policy: lessons from environmental monitoring

Ana Cristina Cardoso

Building on collaboration between the JRC Teams EASIN and Citizen Science

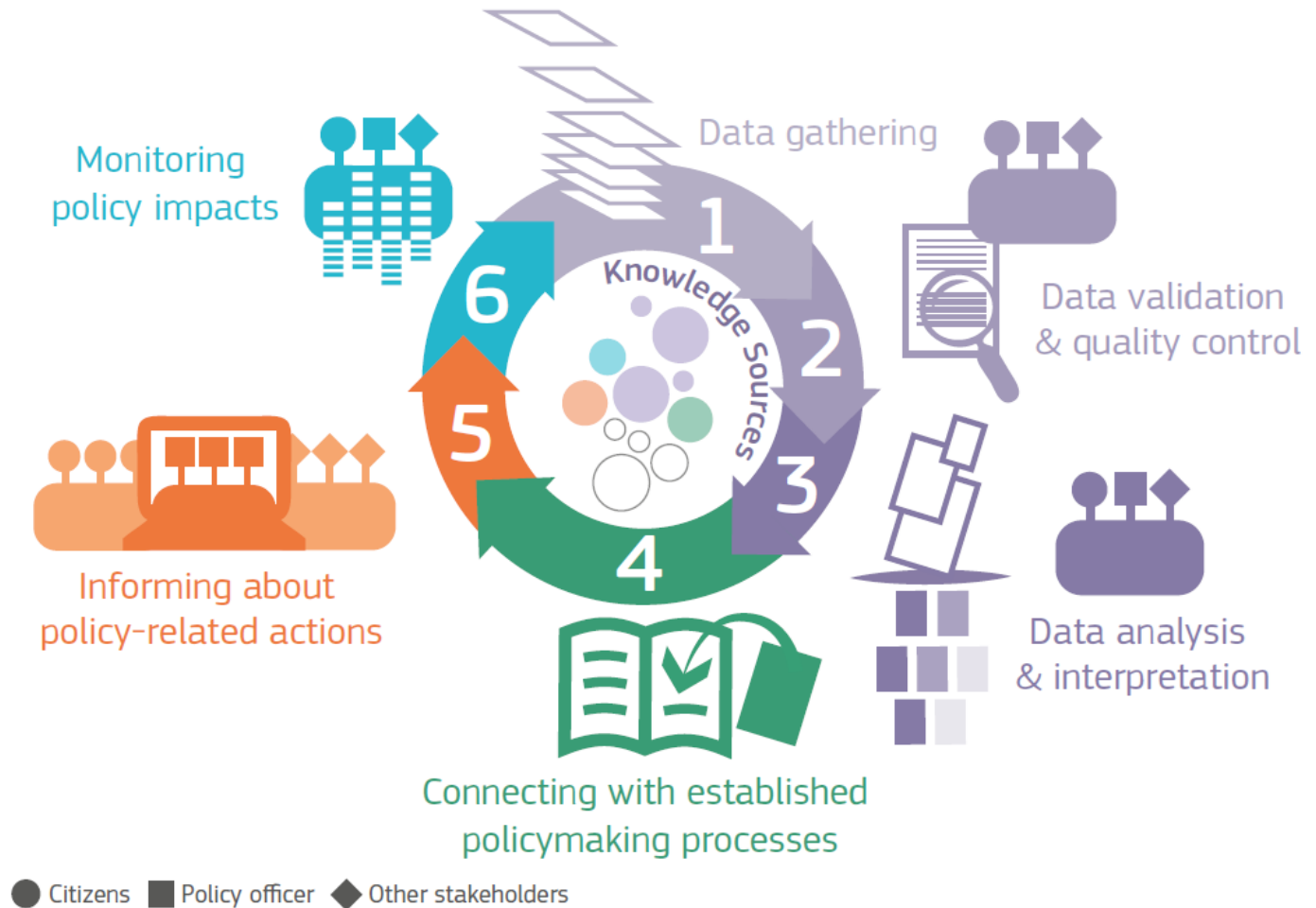
Brussels and online, 30 June 2023

# Our understanding of Citizen Science

...for thematic policies engaging Citizen Scientists at all stages of the policy cycle, to create a more robust evidence base

... for Open Science opening science for public participation, to address social needs, enrich research data, etc.

... for Better Regulation including citizens as stakeholders and being transparent about the use of their contributions in policy



# Citizen Science for environmental monitoring

2017

- Fitness check on environmental monitoring and reporting

2017

- Action plan to streamline environmental monitoring

## Ten ACTIONS

- 1 Amend legislation
- 2 Change reporting (without changing legislation)  
- Rolling Work Programme 2018-2020
- 3 Modernise e-Reporting
- 4 Develop test tools for harvesting
- 5 Guidance for national environment information systems
- 6 Promote use of spatial data (INSPIRE application)
- 7 Better use of Copernicus data
- 8 Promote citizen science**
- 9 Cooperate with other thematic areas (e.g. climate, statistics)
- 10 Wider international streamlining

# Citizen Science for environmental monitoring

- 2017 • Fitness check on environmental monitoring and reporting
- 2017 • Action plan to streamline environmental monitoring
- 2018 • Study on citizen science for env. policy
- 2019 • Stakeholder input

Ten ACTIONS	
1	Amend legislation
2	Change reporting ( <u>without changing legislation</u> ) - Rolling Work Programme 2018-2020
3	Modernise e-Reporting
4	Develop test tools for harvesting
5	Guidance for national <u>environment information systems</u>
6	Promote <u>use of spatial data</u> (INSPIRE application)
7	Better use of Copernicus data
8	<b>Promote citizen science</b>
9	<u>Cooperate with other thematic areas</u> (e.g. climate, statistics)
10	Wider international streamlining

EU publications

**Citizen science for environmental policy**

Development of an EU-wide inventory and analysis of selected practices – Study

Citizen science is the non-professional involvement of volunteers in the scientific process, whether in the data collection phase or in other phases of the research. Citizen science is a powerful tool for environmental management that has the potential to inform an increasingly complex environmental policy landscape and to meet the growing demands from society for more participatory decision-making. While there is growing interest from international bodies and national governments in citizen science, however the evidence that it can successfully contribute to environmental policy development,...

Publication details

Published: 2018-12-07  
Corporate author(s): Bio Innov, Natural History Museum  
Themes: Environmental research  
Subject: biodiversity, data collection, scientific cooperation, scientific research

PDF

**CitSci-X**  
Exploring Citizen Science projects

**Projects**

Explore the citizen science projects collected by our partners and us. Find past and current projects addressing different domains, participatory approaches, etc. Discover their relationships to the Sustainable Development Goals, and much more.

**Gallery**

Enjoy graphic representations of citizen science projects based on their core characteristics, including geographic and thematic coverage, policy uptake and policy relevance. Browse the already prepared views, and create dynamic visualizations.

**Sources**

Get to know the surveys, catalogs and data sets of Citizen Science projects that are integrated here. Find out how you could add your own project, or results from a longitudinal study.



JRC CONFERENCE AND WORKSHOP REPORTS

## Citizens Science and Environmental Monitoring

Benefits and Challenges

Manzoni H., Voldstad K., Schade S., Taranishi C., and Ousef I.

2019



# Citizen Science for environmental monitoring

- 2017 • Fitness check on environmental monitoring and reporting
- 2017 • Action plan to streamline environmental monitoring
- 2018 • Study on citizen science for env. policy
- 2019 • Stakeholder input
- 2020 • Best practices in citizen science for environmental monitoring

Ten ACTIONS	
1	Amend legislation
2	Change reporting ( <u>without changing legislation</u> ) - Rolling Work Programme 2018-2020
3	Modernise e-Reporting
4	Develop test tools for harvesting
5	Guidance for national <u>environment information systems</u>
6	Promote <u>use of spatial data</u> (INSPIRE application)
7	Better use of Copernicus data
8	<b>Promote citizen science</b>
9	<u>Cooperate with other thematic areas</u> (e.g. climate, statistics)
10	Wider international streamlining

EU publications

**Citizen science for environmental policy**  
Development of an EU-wide inventory and analysis of selected practices – Study

Citizen science is the non-professional involvement of volunteers in the scientific process, whether in the data collection phase or in other phases of the research. Citizen science is a powerful tool for environmental management that has the potential to inform an increasingly complex environmental policy landscape and to meet the growing demands from society for more participatory decision-making. While there is growing interest from international bodies and national governments in citizen science, however the evidence that it can successfully contribute to environmental policy development,...

Publication details

Published: 2018-12-07  
Corporate author(s): Bio Innov, Natural History Museum  
Themes: Environmental research  
Subject: biodiversity, data collection, scientific cooperation, scientific research

PDF

CitSci-X  
Exploring Citizen Science projects

**Projects**  
Explore the citizen science projects collected by our partners and us. Find past and current projects addressing different domains, participatory approaches, etc. Discover their relationships to the Sustainable Development Goals, and much more.

**Gallery**  
Enjoy graphic representations of citizen science projects based on their core characteristics, including geographic and thematic coverage, policy uptake and policy relevance. Browse the already prepared views, and create dynamic visualizations.

**Sources**  
Get to know the surveys, catalogs and data sets of Citizen Science projects that are integrated here. Find out how you could add your own project, or results from a longitudinal study.



JRC CONFERENCE AND WORKSHOP REPORTS

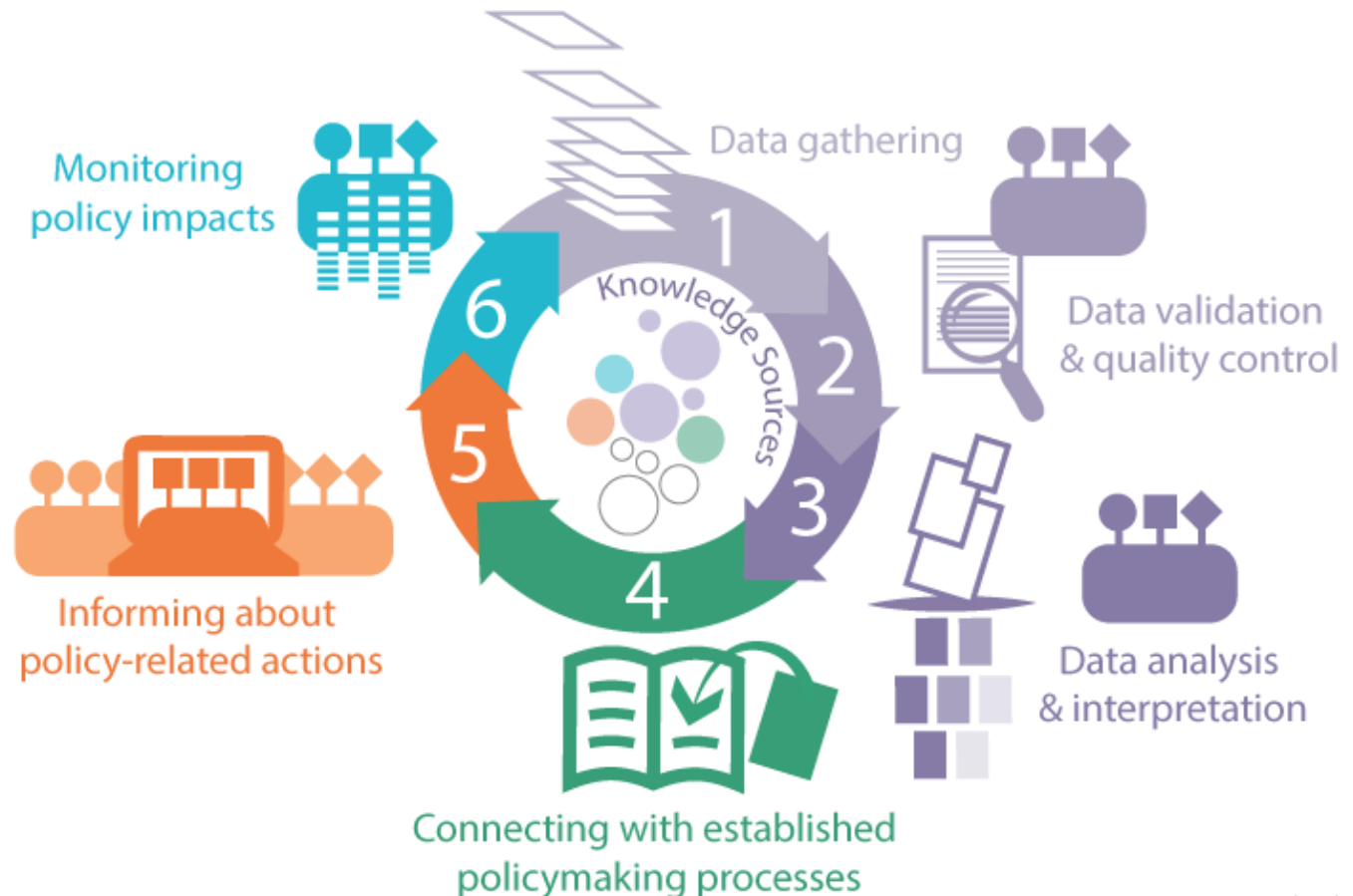
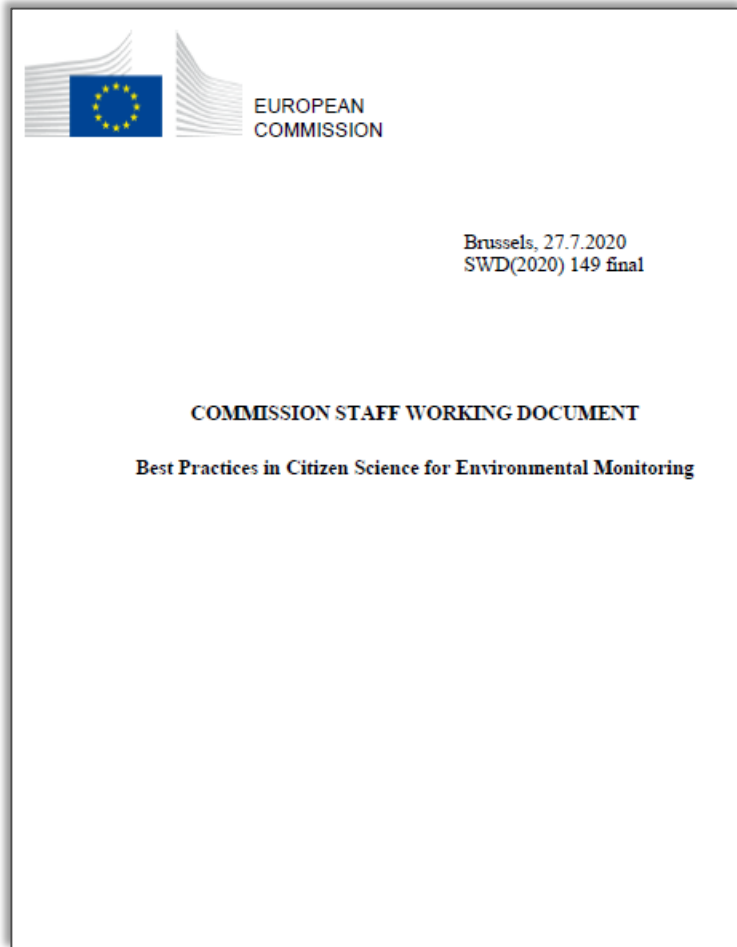
## Citizens Science and Environmental Monitoring

Benefits and Challenges  
Mazzoni M., Voldstad K., Schade S., Tinarelli G., and Dussart J.

2019



# Citizen Science for evidence-based policy making



● Citizens ■ Policy officer ◆ Other stakeholders

# Scope

- **Overview of the EU environmental citizen science landscape and practices**
- Share **good practices and lessons learnt** in how CS & EU policies can support each other
- Highlight **potential benefits and challenges**
- **Targeted recommendations** and possible **actions** for exploiting the full potential of CS in environmental monitoring, for key actors:
  - *EU authorities*
  - *Public authorities in EU Member States*
  - *Researchers*
  - *Citizen science communities*
  - *Citizen science associations and networks*

# Several good practices...



Marine LitterWatch (M.L.W.) is a model developed by the European Environment Agency (EEA) which combines citizen engagement and modern technology to tackle the problem of marine litter. It aims to help fill data gaps on marine litter found on beaches relevant for EU marine environmental policy (the Marine Strategy Framework Directive), while involving citizens in its collection and monitoring. In addition, it allows for the gathering of data from clean-up initiatives.

## Marine Litter Watch



## Collecting information about habitats, plants and animals underwater



## Invasive Alien Species Europe app

...and other initiatives in the domains of **waste, air and water quality, noise, floods...**



# Cross-cutting benefits and challenges



## Benefits

Improved knowledge base

Cost-effectiveness

Granularity (spatio-temporal)

Citizen empowerment

Network and partnership creation

Detection of emerging issues

More inclusive and open research



## Challenges

Long term resources needed

Resistance from public authorities  
(perceived low quality)

Identifying policy linkages and knowledge  
gaps

Feedback and acknowledgement

Data heterogeneity, scalability, integration,  
accessibility, licensing

Governance

Sustaining engagement

# Recommendations in 4 areas

1. Match-making between environment policy needs and citizen science activities

2. Promote awareness, trust and recognition

3. Promote data quality and interoperability standards and share tools

4. Support coordination, collaboration and resources for policy impact

# Thank you and keep in touch






© European Union 2023

Unless otherwise noted the reuse of this presentation is authorised under the [CC BY 4.0](https://creativecommons.org/licenses/by/4.0/) license. For any use or reproduction of elements that are not owned by the EU, permission may need to be sought directly from the respective right holders.

## EU Science Hub

[joint-research-centre.ec.europa.eu](https://joint-research-centre.ec.europa.eu)

-  @EU\_ScienceHub
-  EU Science Hub – Joint Research Centre
-  EU Science, Research and Innovation
-  EU Science Hub
-  @eu\_science