

Citizer Science

 Regione Emilia-Romagna



From Local Challenges to Regional Impact: engaging Teenagers in Citizen Science in Emilia-Romagna

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Citizen Science... what are we talking about?



- Is it **only** about public **participation** in science and research through **data collection**?
- The meaning of the term *Citizen Science* is broad and constantly evolving; it is difficult to provide a single definition... But what does it mean?

Key elements



a form of research in which *non-professional participants* collaborate with scientists and institutions (Oxford Dictionary)



contributing to the **scientific research** by gathering and analyzing data (Rick Bonney, 2009)



it recognizes the **social competence and knowledge** that exist within communities often overlooked by traditional science (Alan Irwin, 1995)



this broader perspective is also reflected in the **European Commission's definition**, which emphasizes citizen involvement across different stages of research and innovation, making science more participatory, democratic, and socially relevant

From Citizen... to Citizer!



- **Citizen Science has triggered a paradigm shift:**
Scientific research as a driver of inclusion, participation, and democratization of knowledge.
- **Open Data and active citizen involvement:**
Citizen Science as an important partnership opportunity between institutions and citizens, to co-develop solutions to social, environmental, and economic issues.
- **Lack of institutional programs and visions** in the field of Citizen Science. *(Marina Manzoni, Katrin Vohland, Sven Schade – “Exploring Citizen Science Strategies and Initiatives in Europe”, 2021)*

The result is **a meso-level approach** to build a Citizen Science regional community in **Emilia-Romagna**.

How did it start?

Launched in **June 2022**

Aim: foster the growth and spread of Citizen Science initiatives in Emilia-Romagna through the creation of a **regional conceptual framework**

- Part of Challenge 1 “Data for widespread intelligence for the territory”, within the **Data Valley Commons strategy**
- Included in the new **Regional Mandate Program 2025–2029**
- consistent with the **EU Recommendation 2024/736** – “Citizen engagement and Citizen Science in knowledge valorization”



WHAT?





Why an institutional framework?



Scientific community → dissemination of results, datasets, new research topics

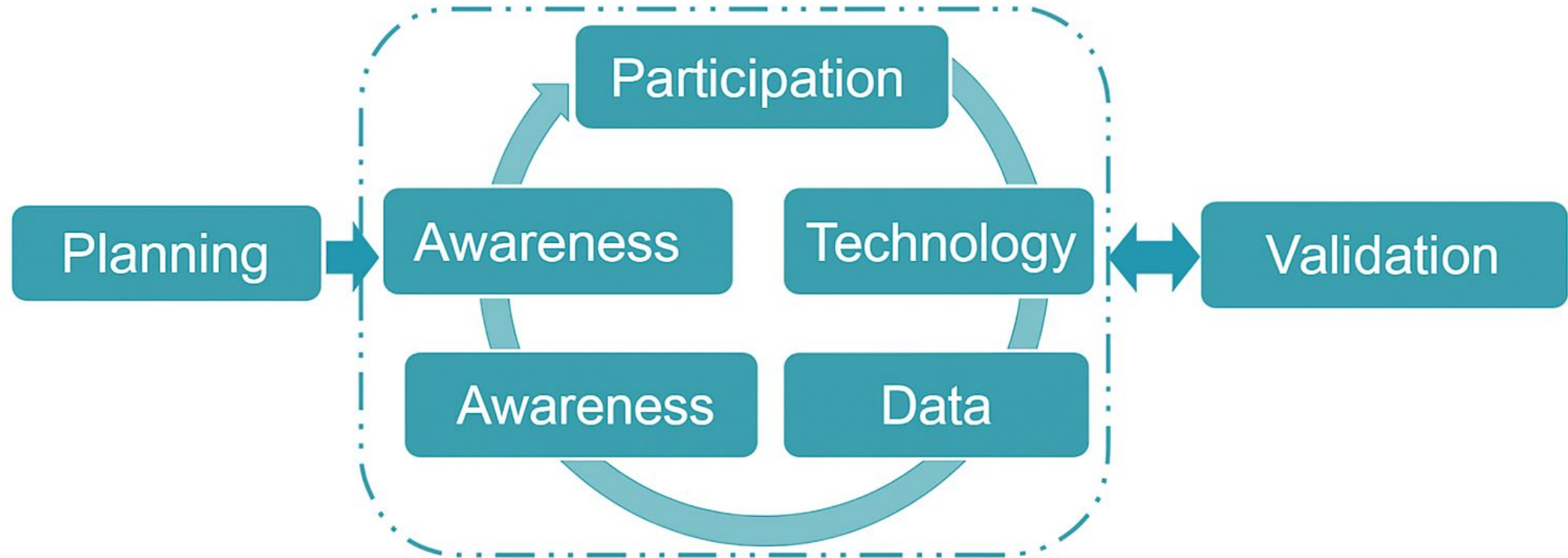


Society → greater awareness, transparency, communication, outreach



Policy making → increased public engagement, monitoring of policy effects, stronger connection with citizens

Citizer Science: the Regional Conceptual Framework





Citizer Science in Action!

Workshops for middle and high school students:

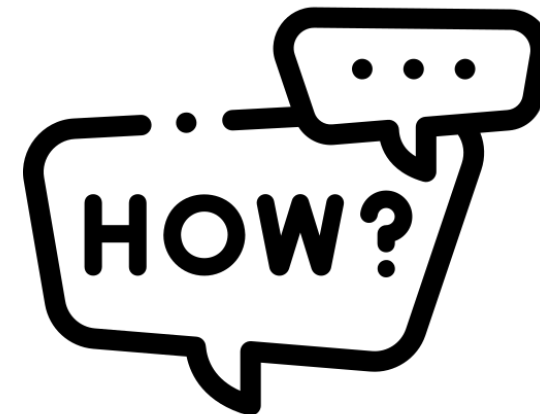
- Since 2022: **10 workshops, 550+ students, 8 cities** (as part of After Festival or other events about digital and technology)
- + *2 workshops planned in Autumn 2025... (project still active)*
- Students develop fun, original **mobile app ideas** using innovative methods to address social challenges.
- Duration: 2:30 – 3 hours
- **Digital facilitators** (scribing) who followed all meetings and visually represented the results



WHAT?

Engage students in a **practical activity** of **reflection** on social interest issues through citizen science and technology





The workshops include:

- **A theoretical explanation part**
- **A practical work part**

Student involvement is aimed not only at **raising awareness** about the importance of these initiatives and data, but also at **collecting their suggestions and ideas on possible CS projects** and use of collected data in **concrete and operational solutions for the benefit of the community**

Key Concepts:

- Citizen Science
- Gamification
 - Game
 - Serious game
- Design Thinking
- Co-Design

Workshop Steps:

1. Introduction to basic concepts with interactive quizzes
2. Practical CS data collection activity
3. Co-design of gamified CS mobile applications
4. Presentation of results
5. Brief final validation

Workshops' Topics

Each workshop focuses on a topic of interest

Which ones? Various! But all related to sustainability as represented in the **UN 2030**

Agenda and the 17 SDGs

For example:

- Biodiversity and environmental sustainability
- Digital wellbeing
- Environmental emergencies
- Sustainable mobility
- Sustainable tourism
- Urban accessibility and inclusion



MOBILITA' SOSTENIBILE
RIGUARDA ANCHE LA QUALITA' DELLA VITA!
TANTI VANTAGGI

AIUTIAMO A PRESERVARE LA
BIODIVERSITA' EQUILIBRIO
OSSERVANDO MONITORANDO
insieme di SPECIE
FLORA
FAUNA

1. Introduction to Basic Concepts



2. Practical CS Data Collection Activity

Warm-up activity

- To start reflecting – concretely – on the concept that everyone has knowledge to share for the benefit of the community

Learning by doing

- With the help of printed sheets (maps, tables, etc.)



3. Co-design of Gamified CS Mobile Applications



3. Co-design of Gamified CS Mobile Applications



3. Co-design of Gamified CS Mobile Applications



4. Presentation of Results



"Citizen science will be that community that will bring the world to another level"

"Pleasant workshop with a high degree of involvement, well structured and logical"

"I would have liked the project to last longer to do more activities"

"Very fun activity, but at the same time teaches many things"

"I really liked it and found it interesting"

Conclusion

Citizen science practices, when applied to urban contexts, offer significant potential for making planning processes **more inclusive, evidence-based, and socially relevant**.

The experiences developed through *Citizer Science in Action* show that **involving citizens**—especially younger generations—in data collection, awareness-building, and co-design activities can not only **potentially generates valuable datasets**, but also **fosters civic engagement and trust in institutions**.

In this perspective, citizen science is not just a tool for collecting information, but a driver of cultural and institutional change: it redefines the relationship between citizens, knowledge, and policy, paving the way for urban planning that is more democratic, adaptive, and oriented towards long-term sustainability.

Thank you for your attention!

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