

# Citizen Science and Evidence Based-Policies across Europe

How citizen science contributes to the development of evidence-based policies through civic engagement

## What is Citizen Science?

**Citizen Science** refers to the **general public engagement in scientific research activities** when citizens actively contribute to science, either with **their intellectual effort or surrounding knowledge or with their tools and resources.**

Source: White Paper on Citizen Science (2014).

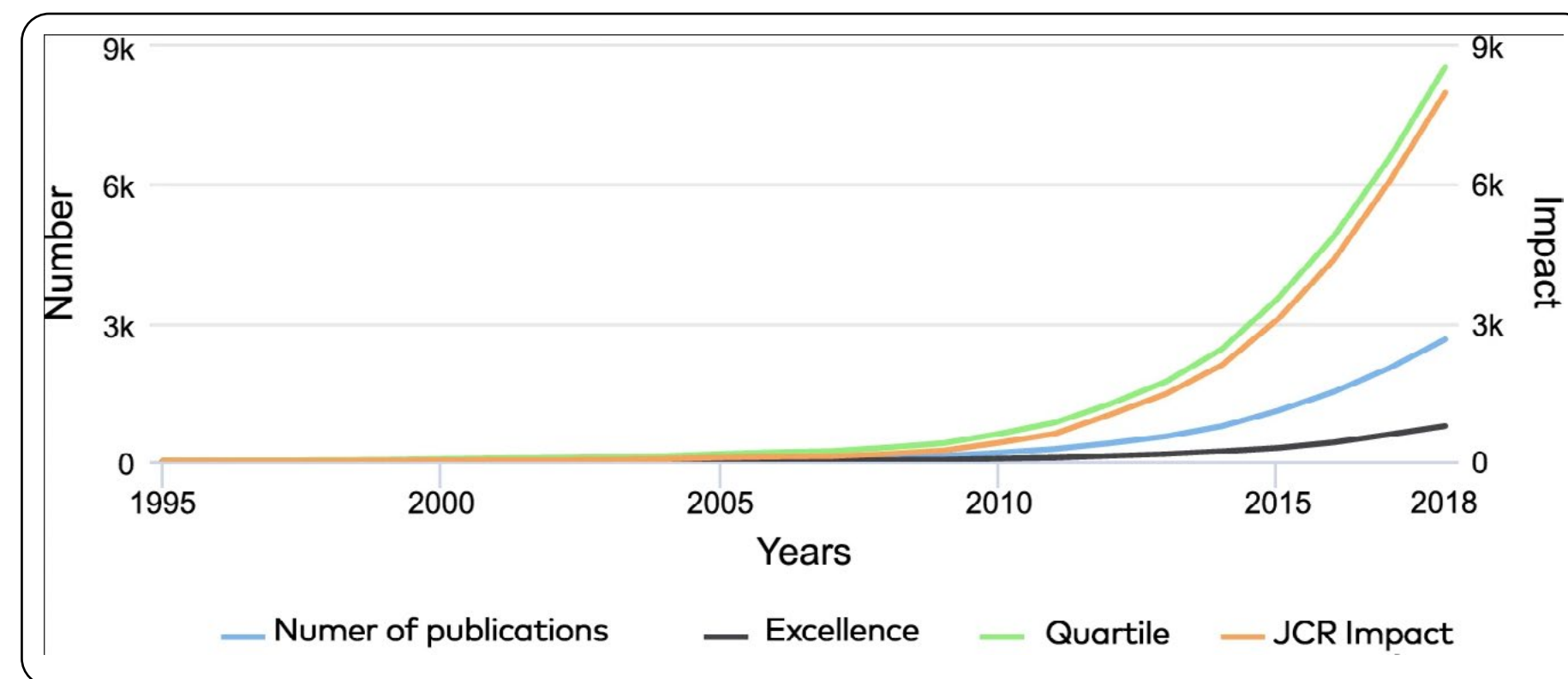
**WHITE PAPER**  
ON CITIZEN SCIENCE FOR EUROPE

There are **multiple forms of participation** associated with the different stages of the research cycle, where citizens - particularly, but not only, those affected by a social challenge - can play a very relevant role:

- PROBLEM DETECTION
- RESEARCH PLANIFICATION
- DATA COLLECTION AND ANALYSIS
- CO-CREATION OF METHODOLOGIES
- CARRYING OUT EXPERIMENTS
- INTERPRETATION OF RESULTS
- SOLUTION PROPOSAL
- TECHNOLOGY DEVELOPMENT
- APPLICATION DEVELOPMENT
- PUBLICATION OF RESULTS

## SCIENTIFIC IMPACT

Citizen science is an important vehicle for democratizing science and promoting the goal of **universal and equitable access to scientific data and information.**



We can observe a **spectacular growth rate**, particularly after 2010, of papers that mention citizen science methodologies in their studies.

The same thing happens when we consider qualitative metrics, such as the **quartile in JCR -Journal Citation Reports-**, and the **JCR impact.**

Source: Pelacho, M., Ruiz, G., Sanz, F. et al. (2021). Analysis of the evolution and collaboration networks of citizen science scientific publications. *Scientometrics* 126, pp. 225-257.

## Evolution of the scientific publications that include citizen science methodologies

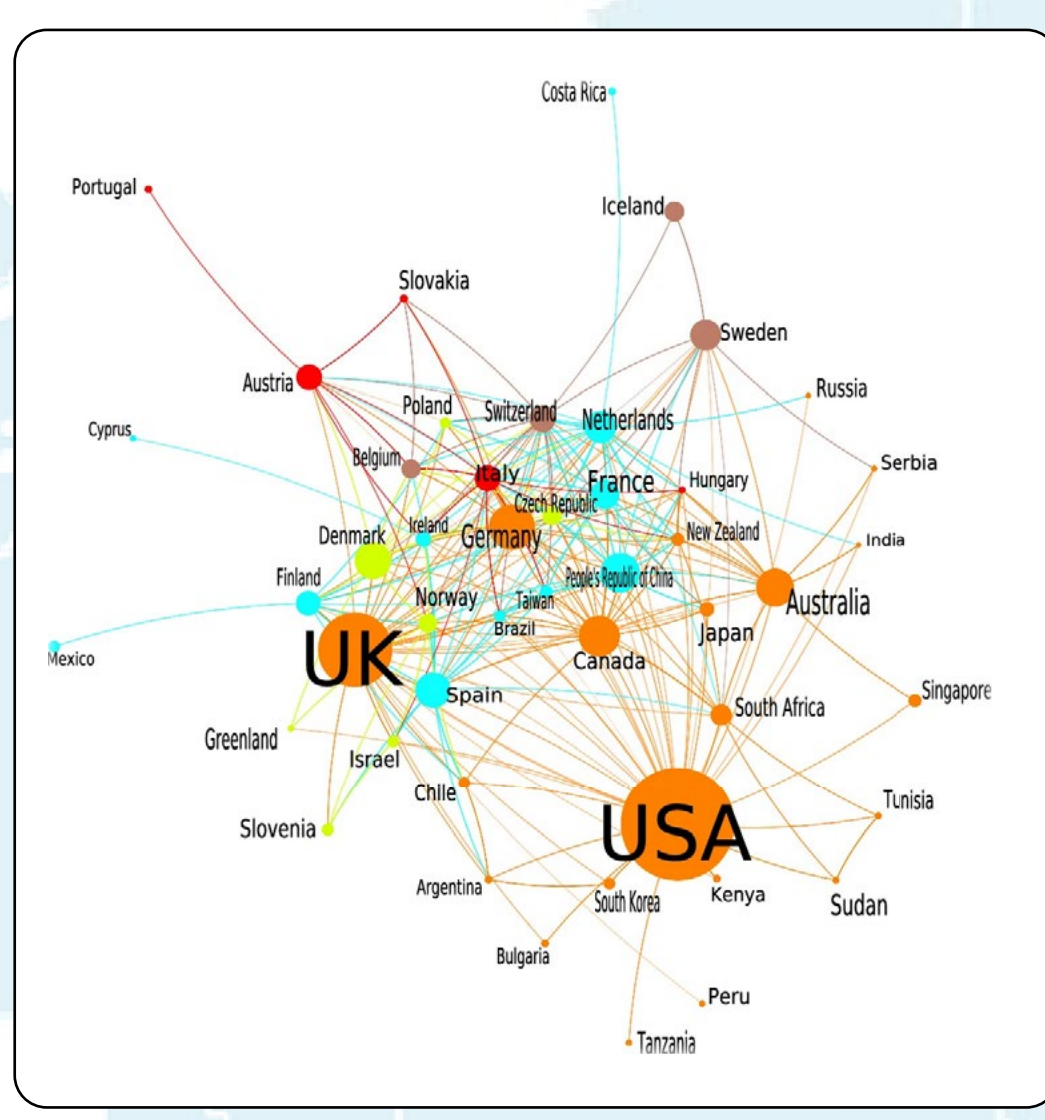
Scientists across the continent have proven that **citizen science can deliver good quality data.**

"Citizen science activities offer an **under-used, cost-efficient additional source of knowledge** and feedback in the monitoring of the environment and the implementation of environment policies." European Commission, 2020.

Source: European Commission (2020). Best practices in citizen science for environmental monitoring. European Commission, Brussels, Pg. 17.

## Research collaborations between countries

More and more scientific projects are using the citizen science methodology to obtain results, and professionals from various countries are joining forces to carry out their research together with citizens.

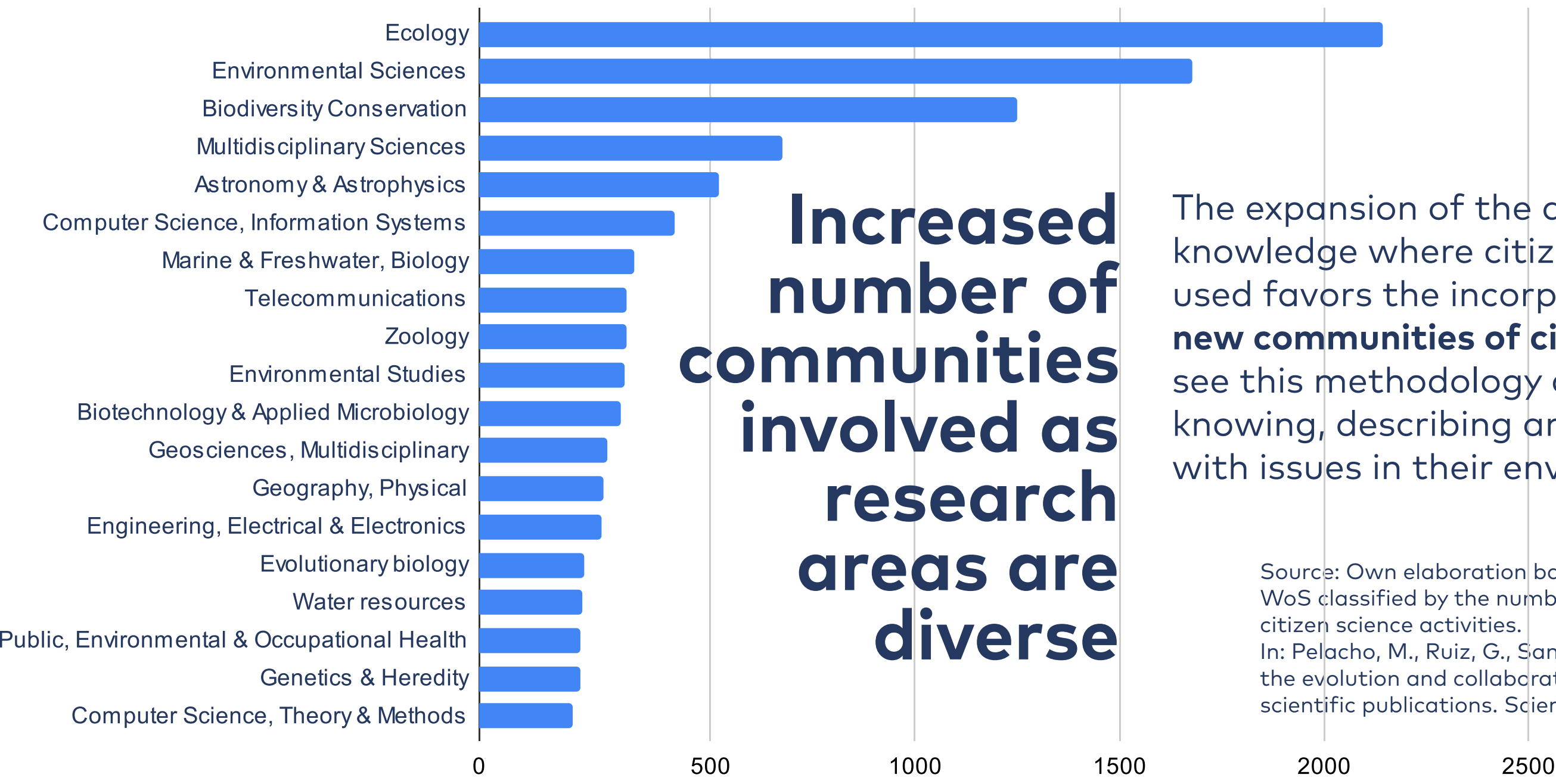


Source: Pelacho, M., Ruiz, G., Sanz, F. et al. (2021). Analysis of the evolution and collaboration networks of citizen science scientific publications. *Scientometrics* 126, pp. 225-257.

## SOCIAL IMPACT

Scientists and communities tend to **consider citizen science as action, strengthening its ability to create social change** and understanding participation as a process of individual or collective transformation.

Open Systems. Citizen Science for Social Change.



**Increased number of communities involved as research areas are diverse**

The expansion of the areas of knowledge where citizen science is used favors the incorporation of **new communities of citizens** who see this methodology as a way of knowing, describing and dealing with issues in their environment.

Source: Own elaboration based on Table 3 Top-20 areas in WoS classified by the number of publications including citizen science activities. In: Pelacho, M., Ruiz, G., Sanz, F. et al. (2021). Analysis of the evolution and collaboration networks of citizen science scientific publications. *Scientometrics* 126, pp. 225-257.

**388**  
388 Citizen Science biodiversity projects around the world provide:

**1,3 to 2,3 million** citizen science participants

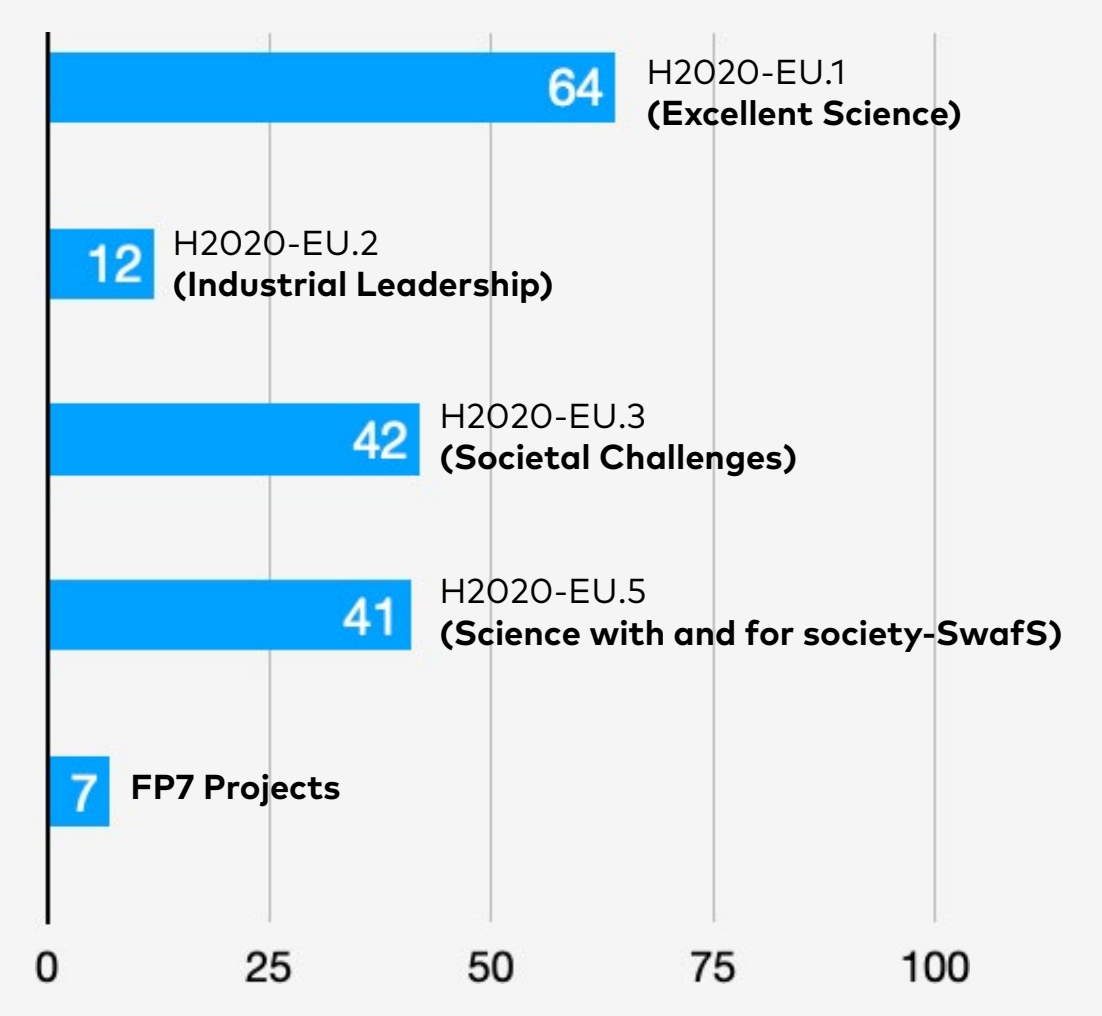
**Up to \$2,5 billion** of economic value per year (more than €2,000 million per year)

Source: E.J. Theobald, A.K. Ettinger, H.K. Burgess et al. (2015). Global change and local solutions: Tapping the unrealized potential of citizen science for biodiversity research. *Biological Conservation*, 181, pp. 236-244.

## ECONOMIC IMPACT

Citizen science **increases social and technological innovation**, budget savings and budget availability to tackle additional issues of public concern.

**165 citizen science projects** funded under different topics in the **FP7 and Horizon 2020 research and innovation programmes**



Source: CORDIS search 'citizen science' AND projects.

European funding for citizen science projects is not only limited to SWAFS, but **its proposals are accommodated in other lines of funding**, proving its quality as a research tool in every field.

In Spain, up to November 2020 **77 citizen science projects** have meant **a return of €51,740,092** to national, regional and local institutions.



Source: CORDIS search 'citizen science' AND projects AND Spain. Accessed 1 November 2020.

The French Administration saves between **€678,523 and €4,415,251 per year** thanks to the participation of volunteers in biodiversity monitoring programmes.



Source: Levrel, H., Fontaine, B., Henry, P., et al. (2010). Balancing state and volunteer investment in biodiversity monitoring for the implementation of CBD indicators: A French example. *Ecological Economics*, 69(7), pp.1580-1586.

## POLITICAL IMPACT

"Citizen science projects can change the political agenda by spurring political involvement of citizens, which can eventually lead to policy change".

Jurre Honkoop. [Political impact through citizen science?](#)



Useful policy briefs can be found in the resource section of the EU-Citizen.Science platform categorised under the resource type "Policy brief", [here](#).



"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.

Source: European Commission (2020). Citizen science elevating Research & Innovation through Societal Engagement. Available at: [https://cdn2.euraxess.org/sites/default/files/citizens\\_science\\_en.pdf](https://cdn2.euraxess.org/sites/default/files/citizens_science_en.pdf)