EUROPEAN CLIMATE PACT

CITIZENS IN ACTION FOR CLIMATE SCIENCE

Explore how citizen science can enhance your climate action

Thursday 24 April 2025

#MyWorldOurPlanet **#EUClimatePact**

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HOUSEKEEPING RULES

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By default, all attendees' microphones and cameras are off, but you can use the **Slido Q&A function** to ask questions to the speakers

There will be **polls** being launched – so be ready to respond!

This meeting is **recorded** and **materials** will be shared afterwards

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Q&A IN SLI.DO

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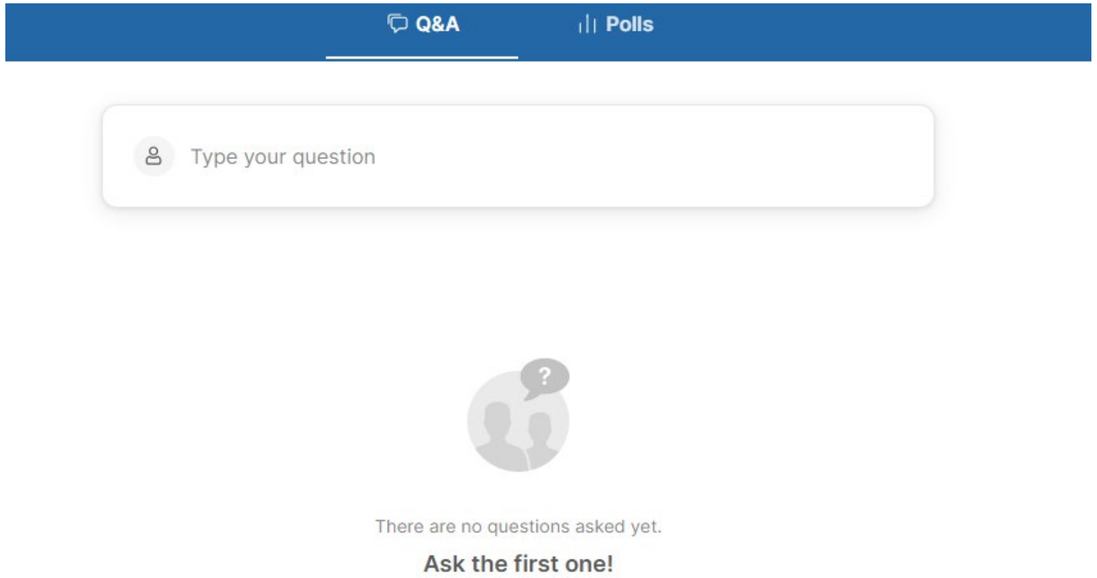
1. Join Sli.do

2. Select ‘Q&A’ – type your question and click ‘Send’



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WHAT'S THE EU CLIMATE PACT?

"My World. My Action. Our Planet."

- Initiative launched by the European Commission aiming to create a movement of people, communities and organisations united around **climate action**.
- As part of the European Green Deal, it is helping the EU meet its goal to become climate-neutral by 2050.

1000+
Climate Pact Ambassadors in all MS

6
group activity ideas for citizen engagement

300+
events in EU Member States

52
Climate Pact Partners

147
Climate action resources on website

CITIZEN SCIENCE: A KEY DRIVER OF EU CLIMATE POLICY

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Key benefits:

- Increase public engagement and participation
- Inclusive and participatory policymaking
- Improve understanding of local context
- Increase transparency and accountability
- Support for evidence-based policymaking
- Improve data quality

Examples of policy areas and projects:

Climate ADAPT
SHARING ADAPTATION KNOWLEDGE FOR A CLIMATE-RESILIENT EUROPE

WeObserve

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Which country are you joining us from today?

Have you ever been involved in citizen science projects or experiments (either as participant or organiser)?

INTRODUCTION TO SPEAKERS

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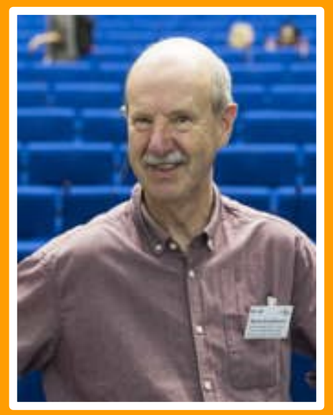
Beatriz Noriega Ortega

Project Officer at the
European Citizen Science Association (ECSA)



Martin Brocklehurst

Chair of the **Citizen Science Global Partnership** (CSGP) Board and Founding Member of **ECSA** and **CSGP**

Ioana Petrescu

Climate Pact Ambassador and President of the **Simply Green Association** (Pur si Simplu Verde)

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TOPICS FOR TODAY

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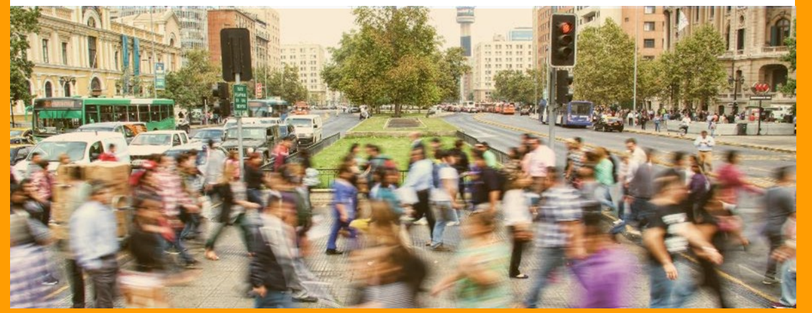
Introduction & Practical Insights

Citizen Science & Current Topics



Climate Ambassador Experiences

PUR ȘI SIMPLU VERDE

Participate in a Citizen Science Experiment

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DR. BEATRIZ NORIEGA ORTEGA

EUROPEAN CITIZEN SCIENCE ASSOCIATION

Introduction and practical insights into citizen science

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WHAT IS CITIZEN SCIENCE?

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"Citizen science is the practice of **public participation** and collaboration in scientific research to increase scientific knowledge. Through citizen science, people **share** and **contribute** to data monitoring and collection programs."

– National Geographic

"Research conducted with **participation** from the **general public**, or amateur/non professional researchers or participants for science, social science and many other disciplines"

– Wikipedia

"NASA's citizen science projects are **collaborations** between scientists and **interested members of the public**."

– NASA

"Citizen science is any activity that **involves the public** in **scientific research** and thus has the potential to bring together science, policy makers, and society as a whole in an impactful way."

– EU-citizen.science

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WHAT IS CITIZEN SCIENCE?

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- Defining “citizen science” is complicated
- In the book *The Science of Citizen Science* (Muki Haklay, Daniel Dörler, Florian Heigl, Marina Manzoni, Susanne Hecker & Katrin Vohland) there is an entire chapter called: *What Is Citizen Science? The Challenges of Definition!*
- They shared 34 different definitions, but rightly stated:

  “In short, fitness for purpose is an important aspect when choosing a definition to be used in a given context.”

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CITIZEN SCIENCE HAS BEEN AROUND FOR A LONG TIME

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812 AD: Imperial Court reports of cherry blossom flowering in Japan
(Aono e Kazui 2007)

1989: Term is first seen in a publication:
Kerson R (1989) Lab for the Environment.
MIT Technol Rev 92(1):11–12

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CITIZEN SCIENCE CAPABILITIES

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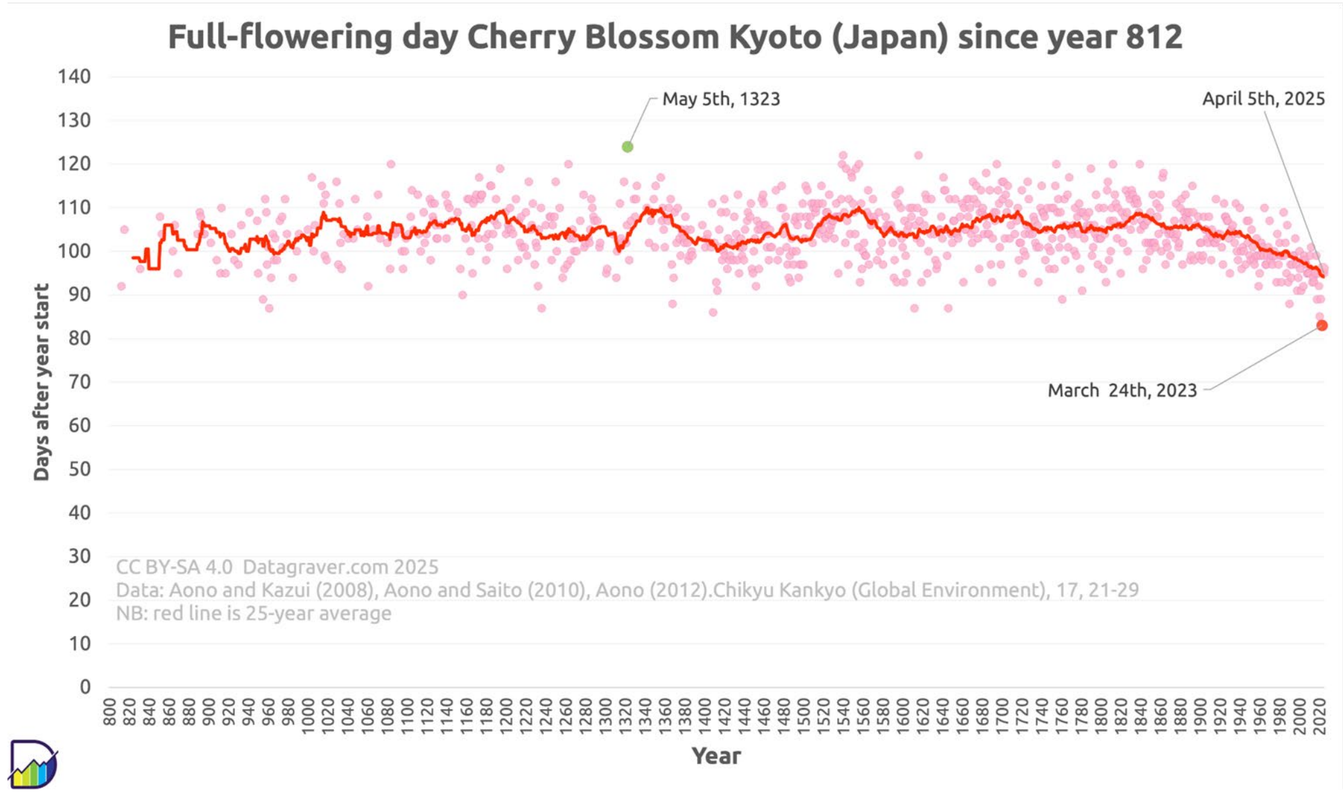
Citizen science allows us to have data at scales that would be impossible to get with “traditional” methods



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BUT IT IS NOT ONLY BIODIVERSITY

Ecology, astronomy, medicine, computer science, cartography, statistics, psychology, genetics, engineering, neuroscience, biochemistry, air or sea pollution monitoring, high energy physics, mathematics

CITIZEN SCIENCE FOR CLIMATE ACTION

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Data collection and research

Education and awareness

Empowerment and engagement

Policy influence

Addressing data gaps and expanding reach

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HOW TO ESTABLISH CITIZEN SCIENCE PROJECTS

ECSA'S PRINCIPLES OF CITIZEN SCIENCE

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ECSA'S PRINCIPLES OF CITIZEN SCIENCE

1. Citizen science projects actively involve citizens in scientific endeavour that generates new knowledge or understanding. Citizens may act as contributors, collaborators, or as project leader and have a meaningful role in the project.

2. **Citizen science projects have a genuine science outcome.** For example, answering a research question or informing conservation action, management decisions or environmental policy.

ECSA'S PRINCIPLES OF CITIZEN SCIENCE

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3. **Both the professional scientists and the citizen scientists benefit from taking part.** 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.

4. **Citizen scientists may, if they wish, participate in multiple stages of the scientific process.** This may include developing the research question, designing the method, gathering and analysing data, and communicating the results.

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ECSA'S PRINCIPLES OF CITIZEN SCIENCE

5. **Citizen scientists receive feedback from the project.** For example, how their data are being used and what the research, policy or societal outcomes are.

6. **Citizen science is considered a research approach like any other, with limitations and biases that should be considered and controlled for.** However unlike traditional research approaches, citizen science provides opportunity for greater public engagement and democratisation of science.

ECSA'S PRINCIPLES OF CITIZEN SCIENCE

7. **Citizen science project data and meta-data are made publicly available and where possible, results are published in an open access format.** Data sharing may occur during or after the project, unless there are security or privacy concerns that prevent this.

8. **Citizen scientists are acknowledged in project results and publications.**

ECSA'S PRINCIPLES OF CITIZEN SCIENCE

9. Citizen science programmes are evaluated for their scientific output, data quality, participant experience and wider societal or policy impact.

10. The leaders of citizen science projects take into consideration legal and ethical issues surrounding copyright, intellectual property, data sharing agreements, confidentiality, attribution, and the environmental impact of any activities.

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CITIZEN SCIENCE TYPES AND ENGAGEMENT STYLES

TYPES OF CITIZEN SCIENCE

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Top-down citizen science involves scientists "pushing" research into the community.

Bottom-up citizen science involves citizens "pulling" research to address their own needs.

Both approaches can be valuable and can even complement each other in creating more inclusive and impactful research.

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LEVELS OF ENGAGEMENT

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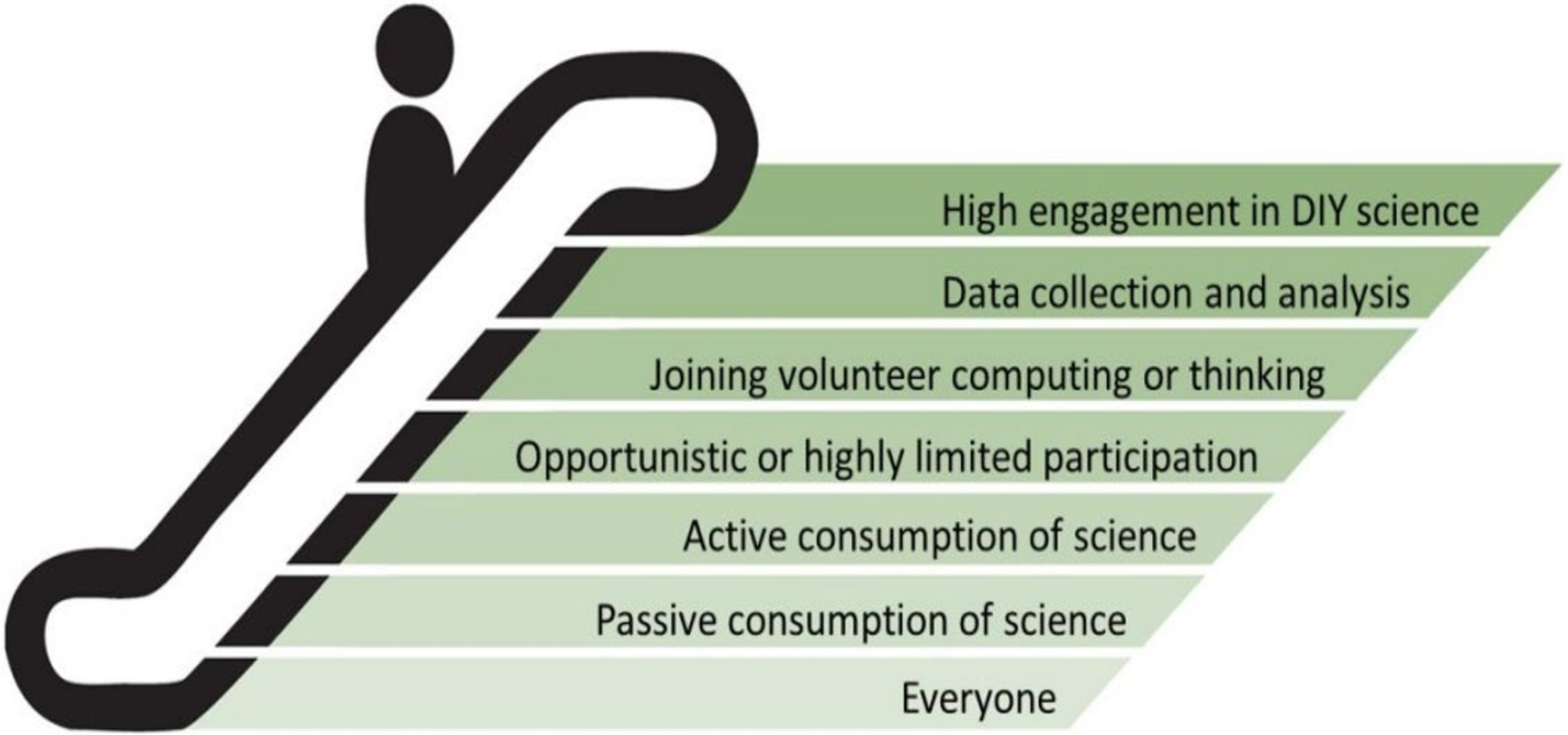

Haklay et al. (2016)

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SOCIO-BEE

SOCIO-BEE
Community for Change

Reducing air pollution requires:

- Technological innovation
- A behavioural shift

Such changes require collaboration between:

- Citizens, businesses, volunteers and decision makers

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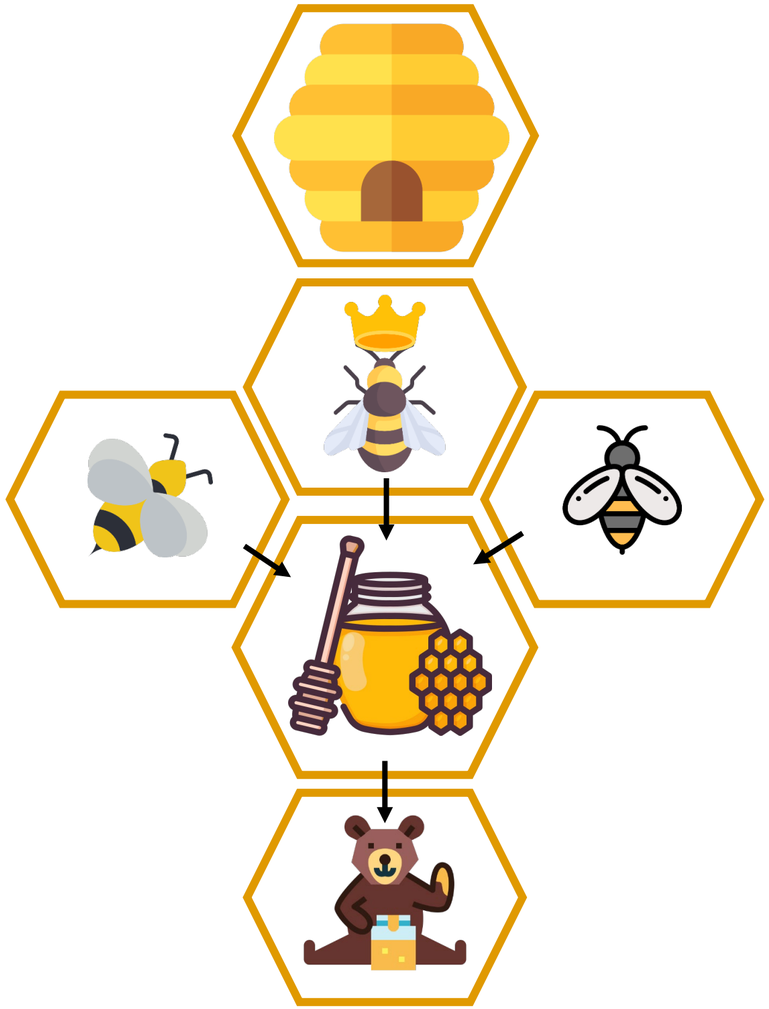
THE BEEHIVE METAPHOR

- SOCIO-BEE hives include citizens appointed as:
  - **Queen bees**, to lead the hive;
  - **Worker bees**, to collect data and provide knowledge; and
  - **Drone bees**, to make hive observations and disseminate results.
- The data and information collected by the citizens is the **Honey**.
- The stakeholders interested in those results are the **Honeybears**.



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COMPAIR

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About COMPAIR

- H2020 EU project
- 1 November 2021 – 31 October 2024
- 15 consortium partners, 5 pilot regions

***Goal*: using citizen sensors to improve urban air quality**

***Means*:**

- 4 supporting tools
- 5 mobility and air quality low-cost sensors
- Co-creation and participation solutions
- **Stakeholders:** schools, civil servants, local communities, cyclists and other citizens

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DIFFERENT TOOLS TO ENSURE IMPACT

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- Traffic sensors
- Air quality sensors
- C-footprint emission calculator and advisor
- AR-app visualising air quality
- Visualisation app for *mobile* air quality measurements
- **Policy Monitoring Dashboard**

1. **Improving publication and availability** by aligning data models with existing international and EU data and metadata standards

2. **Raising data quality** by utilising expert calibration algorithms for automated quality assessment and validation to enhance accuracy of Internet of Things sensors

3. **Broadening flexibility of Application Programming Interfaces** for more tailored policy use, e.g. changing hourly results to a near real-time time window for more operational decision making

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CHALLENGES IN CITIZEN SCIENCE

DATA QUALITY AND VALIDATION

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- **Clear protocols** and **training**
- **Quality control measures**, such as cross-referencing with existing datasets or expert verification of citizen science data.
- **Metadata:** Develop and utilise metadata to capture important information about the data, such as time, location, and specific observation protocols, which can be used for quality control and analysis.

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DIVERSITY AND INCLUSION

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- Making sure **everyone's voices are heard** and that everyone that wants to **participate** can do it.
- **Active outreach:** Develop strategies to engage with diverse groups, including those with limited access to technology, and consider offering projects in multiple languages.
- **Inclusive project design:** Ensure project materials are accessible and offer various participation options (online or offline) to accommodate different backgrounds and abilities.

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SUSTAINABILITY

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- Maintaining **project momentum**, recruiting and retaining **participants** over time, and securing ongoing **funding** can be difficult.
- **Long-term funding:** Seek diverse funding sources and develop strategies for project sustainability beyond initial funding periods.
- **Leveraging technology:** Use technology to facilitate communication, data sharing, and project management.

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ETHICAL CONSIDERATIONS

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- Citizen science projects can raise ethical concerns about **data privacy, ownership and participant consent**, particularly when dealing with sensitive data.
- **Transparency and informed consent:** Clearly communicate project goals, data collection procedures, and how data will be used to participants.
- **Data security and privacy:** Implement measures to protect participant data and ensure compliance with privacy regulations.
- **Ethical guidelines and frameworks:** Develop ethical guidelines and frameworks to address potential ethical issues in a transparent and accountable manner.

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THANK YOU VERY MUCH!

climate-pact.europa.eu

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@EUClimateAction

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MARTIN BROCKLEHURST

PROJECT AURORA & CITIZEN SCIENCE GLOBAL PARTNERSHIP

Citizen science and current topics

#MyWorldOurPlanet #EUClimatePact

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DO I CARE? -Me

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LOS ANGELES

VALENCIA

KENYA

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How frequently do you monitor the carbon emissions resulting from your lifestyle?

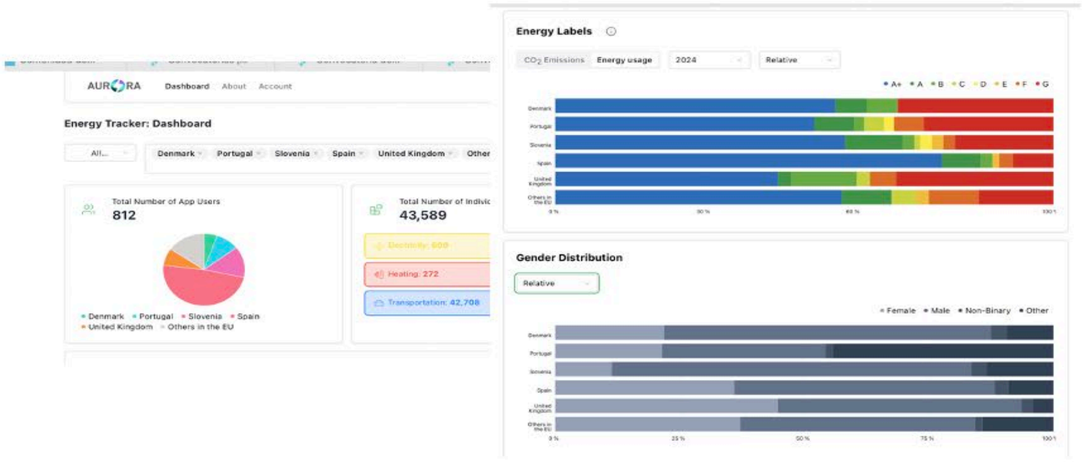
AURORA ENERGY TRACKER APP

EUROPEAN CLIMATE PACT

AURORA

To create the first generation of "Near Zero-Emission Citizens" by promoting behavioural change processes through Citizen Science, environmental observation and civic consortia.

Monitor energy habits impact on the environment



www.aurora-h2020.eu

AURORA

AURORA ENERGY TRACKER APP

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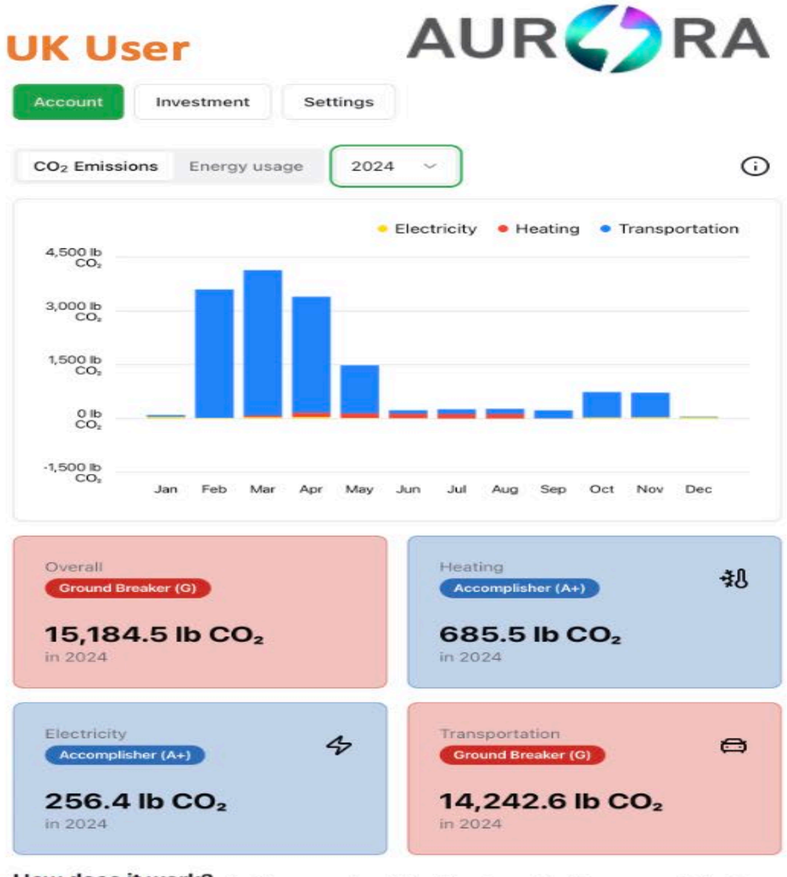
AURORA Energy Tracker app - Data for 2024 From a UK User

UK Version AURORA Energy Labelling Scheme

UK

A+	<6536 kWh	<1629 $kgCO_2$
A	6536 kWh -- 10391 kWh	1629 $kgCO_2$ -- 2591 $kgCO_2$
B	10391 kWh -- 11830 kWh	2591 $kgCO_2$ -- 2949 $kgCO_2$
C	11830 kWh -- 12418 kWh	2949 $kgCO_2$ -- 3095 $kgCO_2$
D	12418 kWh -- 13072 kWh	3095 $kgCO_2$ --3258 $kgCO_2$
E	13072 kWh -- 13725 kWh	3258 $kgCO_2$ --3421 $kgCO_2$
F	13725 kWh -- 15753 kWh	3421 $kgCO_2$ – 3925 $kgCO_2$
G	>15753 kWh	>3925 $kgCO_2$



www.aurora-h2020.eu

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 101036418.

AURORA ENERGY TRACKER APP

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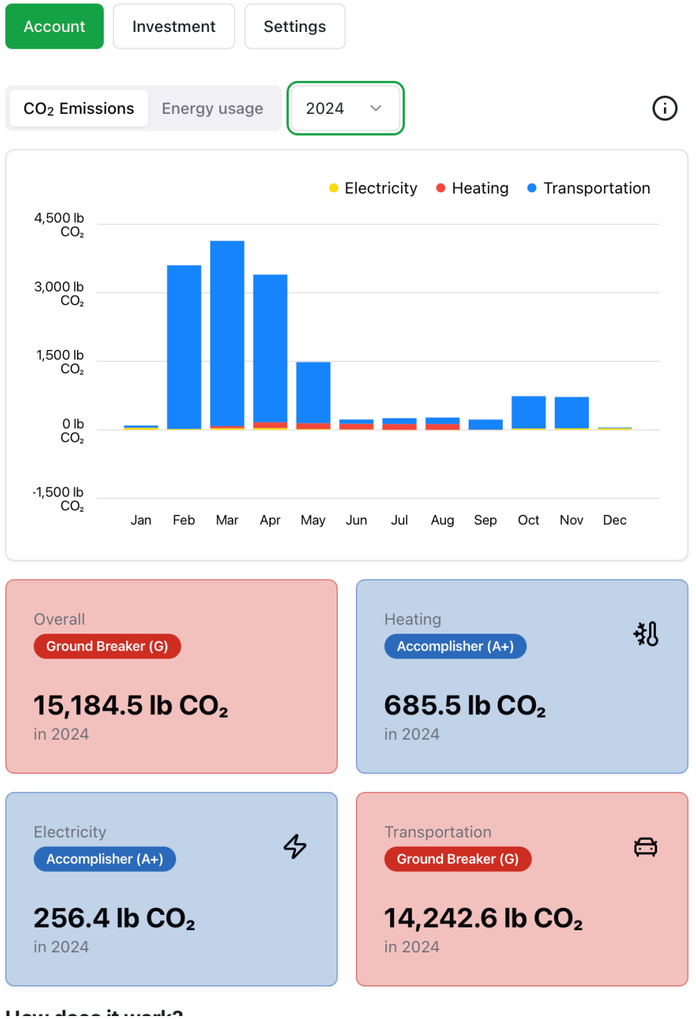
United Kingdom Data – Heating and Powering a home and transport emissions

Item	Average UK Data lbs (Kgs)CO_2	Personal Footprint lbs (Kgs) CO_2	AURORA Label
Heating & power	4,850 (2,200)	917 (416)	A+ Accomplisher
Total Transport	6,839 (3,102)	14,241 (6541)	G (Ground Breaker)
Delete Business flights		*11,995 (5441)*	
Sub Total		*2,246 (1019)*	*A+ Accomplisher*
Annual Total	11,684 (5300)	15,158. (6876)	G (Ground Breaker)
Delete Business Flights		11,995 (5441)	
Sub Total		3163 (1435)	A+ Accomplisher



CITIZEN SCIENCE AND COMMUNITY ENERGY

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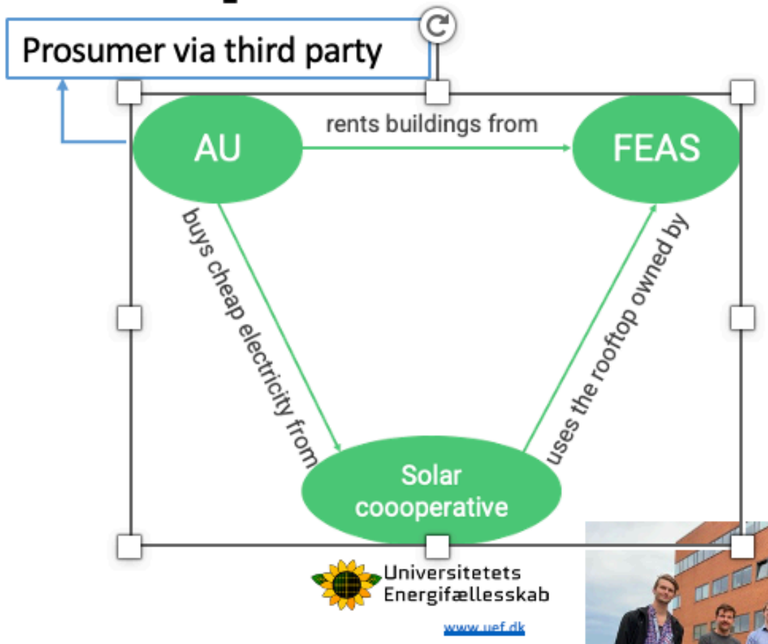
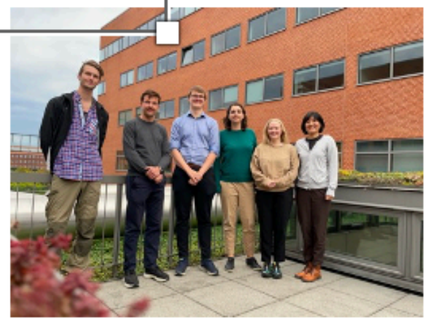
BE PART OF THE ENERGY TRANSITION

Example Aarhus University Energy Community



- ✓ Solar cooperative Universitetets Energifællesskab F.M.B.A (UEF) is established with 6 founding members in August 2023, and officially registered in September 2023
- ✓ Crowdfunding went on from November 2023 to April 2024, resulted in 900 shares reserved by 121 members
- ✓ Agreement with AU regarding electricity delivery is signed, and agreement with building owner FEAS is also signed
- ✓ Contacted 11 local contractors and evaluated 4 offers, and UEF board of directors approved the final design and contract by the company 1KOMMA5 Denmark
- ✓ Installation done in July 2024



Founding members of UEF

This project has received funding from the European Union's Horizon 2020 research and innovation programme under

AURORA

CITIZEN SCIENCE AND COMMUNITY ENERGY

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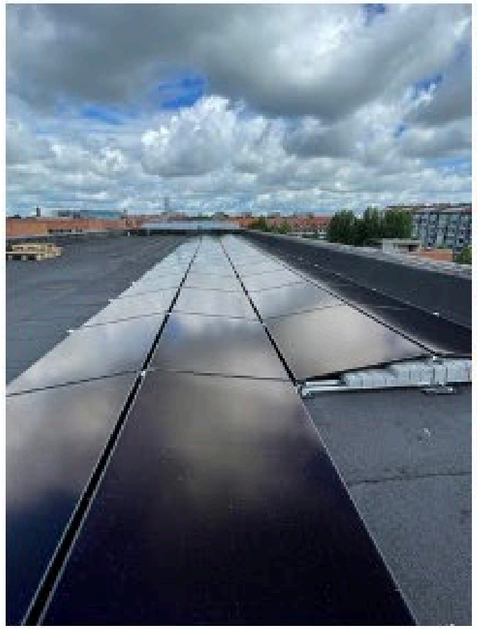
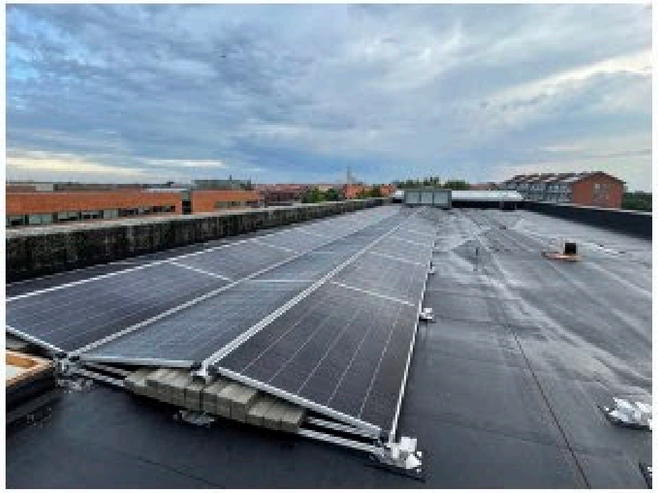
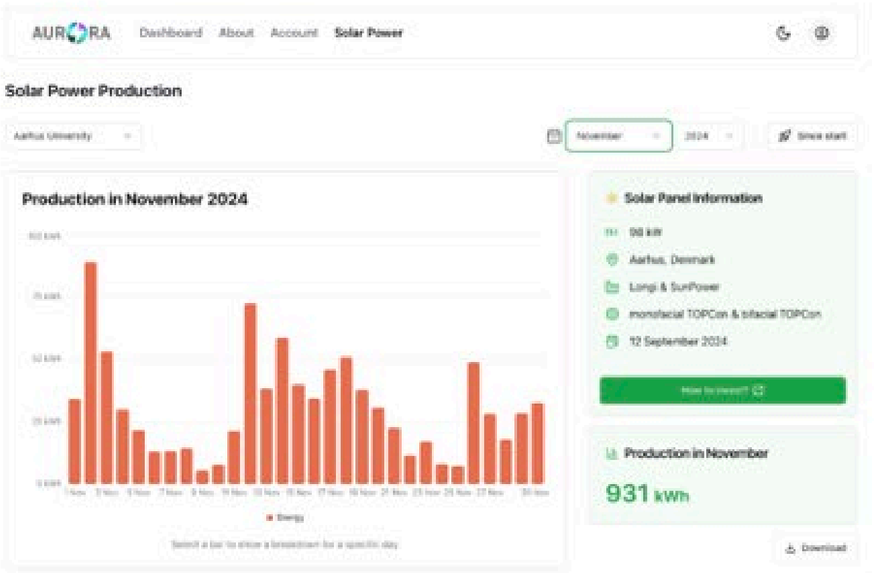
Aarhus University Denmark

Installed and operational







FIRST SCHOOL IN SPAIN – COMMUNITY ENERGY

Latest €140,000 raised from the community in shares

Do you believe your community (or e.g. school, university, neighborhood) would be interested in establishing an energy community to create crowd-funded community renewable energy projects?

GLOBAL CITIZEN SCIENCE – CLIMATE

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NEXT STEPS

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WHAT ARE YOU GOING TO DO?

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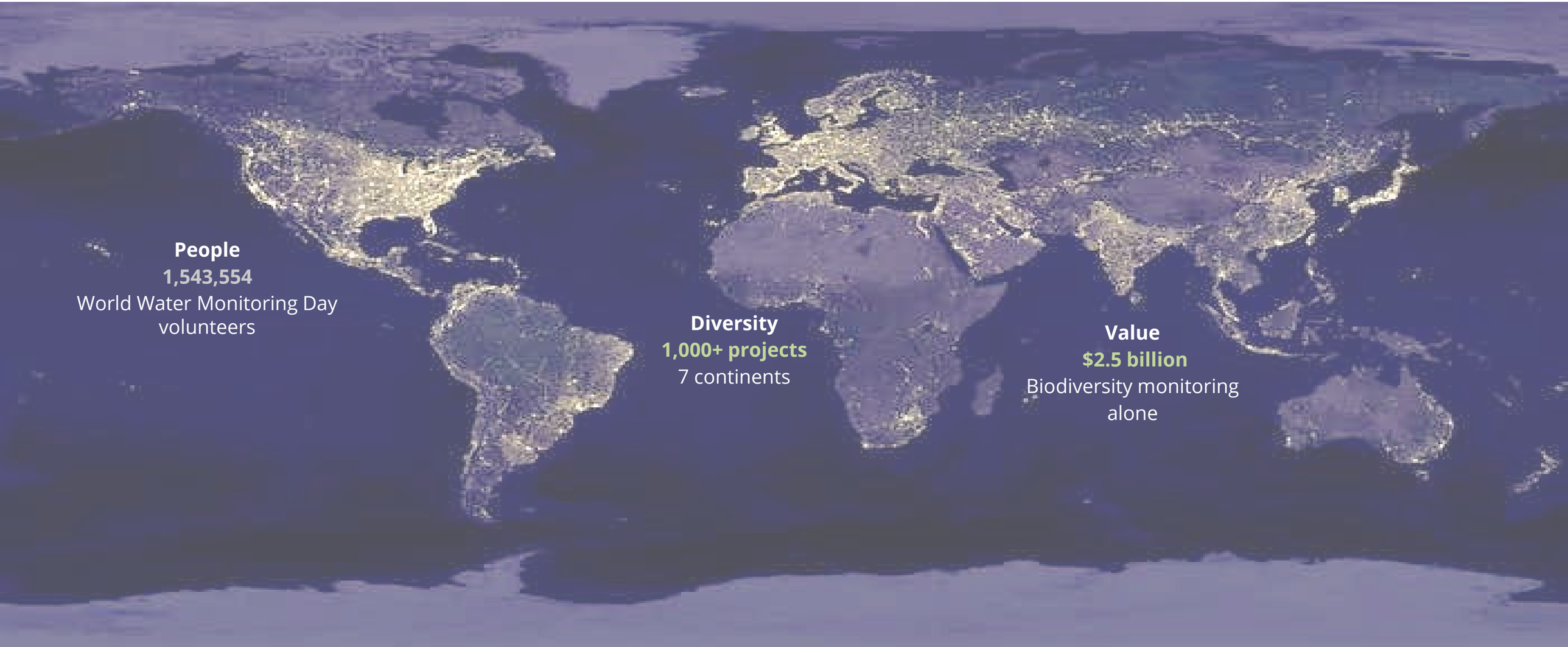

People
1,543,554
World Water Monitoring Day volunteers

Diversity
1,000+ projects
7 continents

Value
$2.5 billion
Biodiversity monitoring alone

GLOBAL CITIZEN SCIENCE PROJECTS

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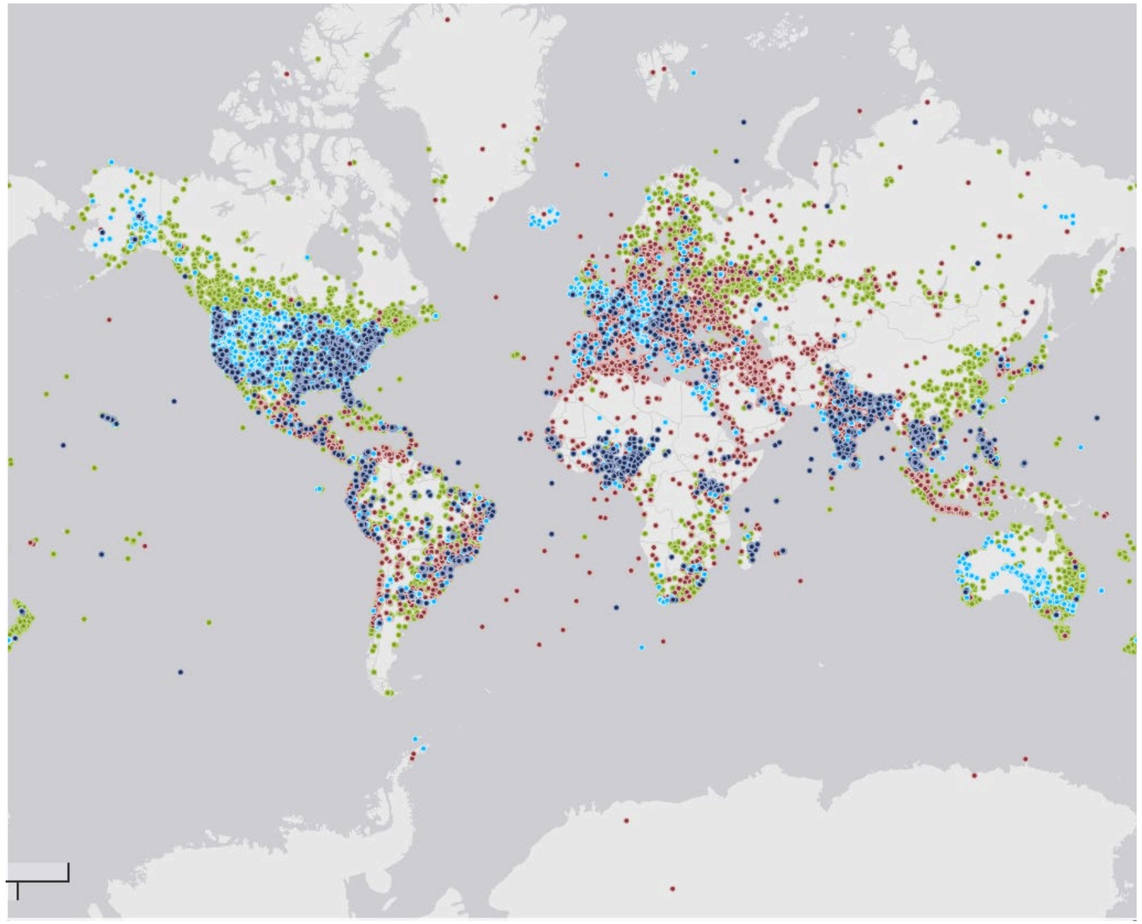
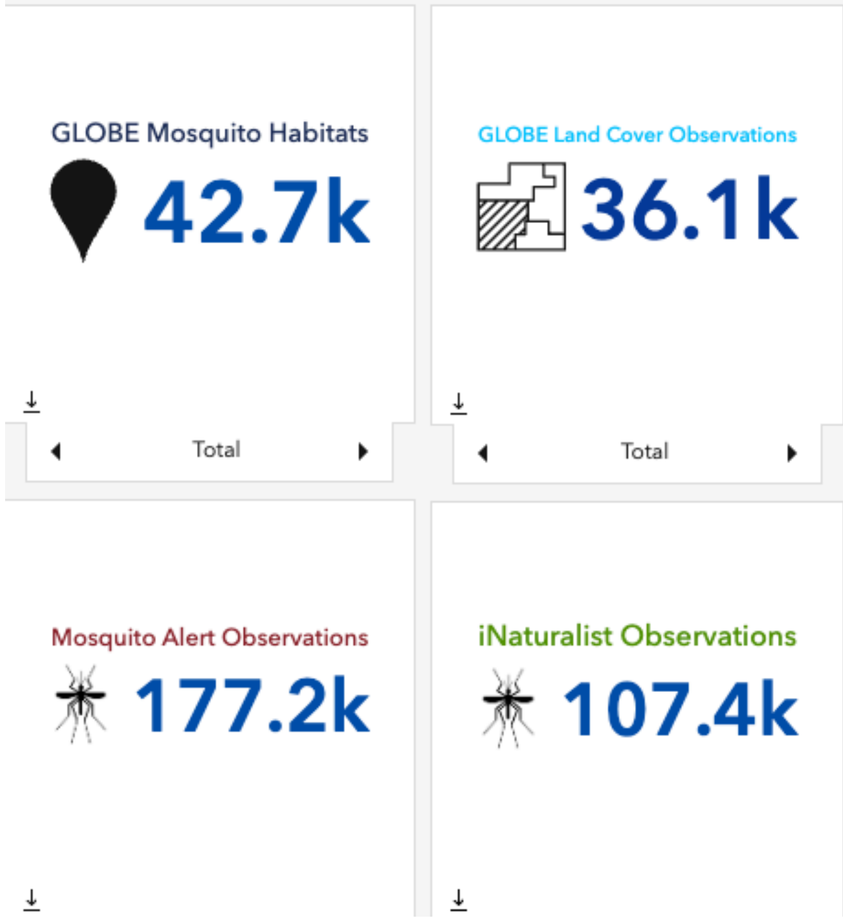
Global Mosquito Observations Dashboard mosquitodashboard.org





Source: [bit.ly/42Ku34e](bit.ly/42Ku34e)

Would you be willing to share your personal carbon data on a global dashboard? For example, for a European wide citizen project on climate change mitigation?

GLOBAL CITIZEN SCIENCE – CLIMATE

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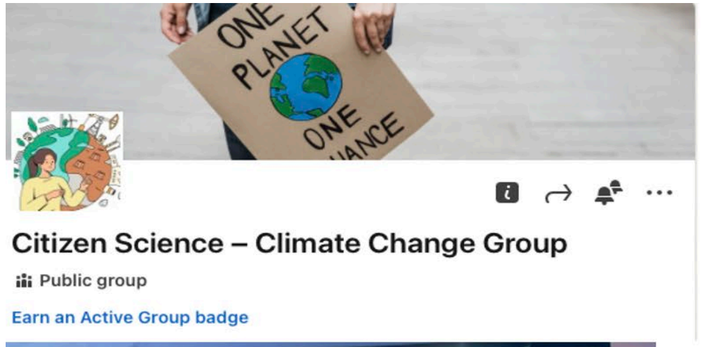
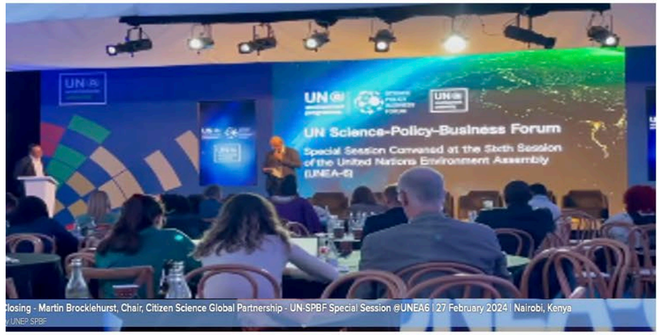


AURORA

JOIN OUR Global Social Media
LinkedIn Discussion Group
Citizen Science & Climate Change

https://www.linkedin.com/groups/12942018/



Former Chief Scientist UNEP/ DG Environment/ CitSci Africa/ACSA

- Established in November 2023
- Purpose – A global group for citizen scientists to exchange best practise
- Rules – An open group with clear rules of use outlined
- Issues – Some early misuse now resolved
- Current users – 180 Members and still growing
- Impressions – up to circa 400 for most popular issues
- The site is being used by other scientists working on climate change

CITIZEN SCIENCE CAN INFLUENCE GLOBAL EVENTS –UNEA7 / COP30

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- Monthly UNSPBF blogs on citizen science, including one on climate change mitigation – leading to UNEA7
- Launch Global Working Group on Citizen Science and Climate Change Mitigation – common methodologies, tools and data base systems
- Call issued for Citizen Science Delegation to attend UNEA7
  - Seek NGO event; Formal side event; UNSPBF launch
- December – UNEA7 launch Global Programmes on citizen science and climate change mitigation at UNSPBF event
- Call for funding for global citizen science programme on climate change

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CITIZEN SCIENCE INTEGRATED IN EU LAW

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NEXT STEPS

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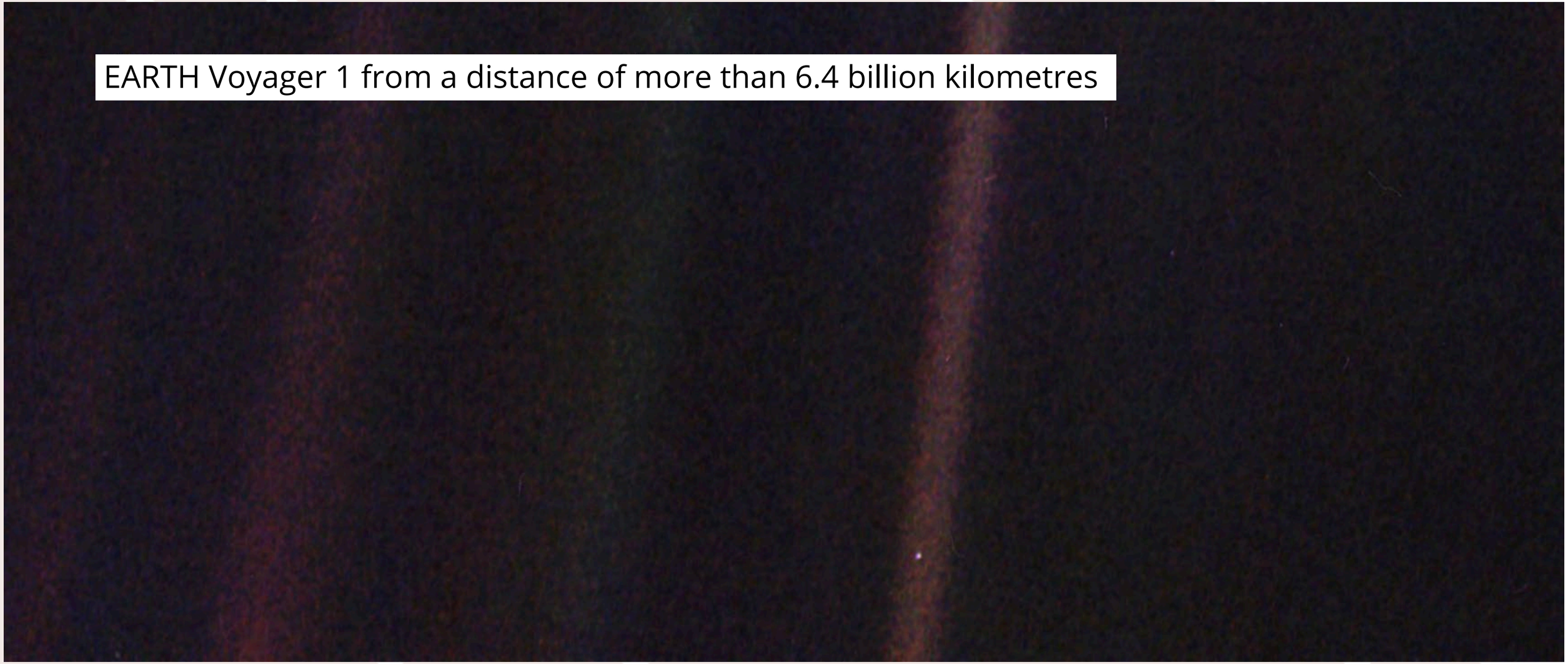

"We have one planet on which to live – nothing else has been found for 6.4 billion kilometres on which we could survive. Citizens of this world must unite to protect our home – that is why I am so passionate about Global Citizen Science." **Martin Brocklehurst, European Climate Pact, 2025**

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THANK YOU VERY MUCH!

climate-pact.europa.eu

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DR. IOANA PETRESCU

SIMPLY GREEN ASSOCIATION

Climate Ambassador experience – Harnessing Earth Observation and citizen science for climate action

#MyWorldOurPlanet #EUClimatePact

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1. ABOUT ME AND MY INTEREST IN SPACE, EARTH OBSERVATION, AND CITIZEN SCIENCE

WHO AM I? WHY SPACE?

- I am a **European Climate Pact Ambassador**.
- I run **Pur și Simplu Verde**, an NGO dedicated to fostering environmental awareness and action.
- Our organisation is involved in projects utilising **satellite data**, such as the development of an interactive educational programme for schools focused on satellite data during **Green Week**.
- Additionally, I advise **ESPI** (European Space Policy Institute) on the integration of **satellite data** into **public policy**, supporting the use of Earth Observation for better European governance and policy-making.

High-level policy meeting about Earth Observation in London, April 2025
Source: ESPI

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2. WHAT IS EARTH OBSERVATION?

SATELLITES

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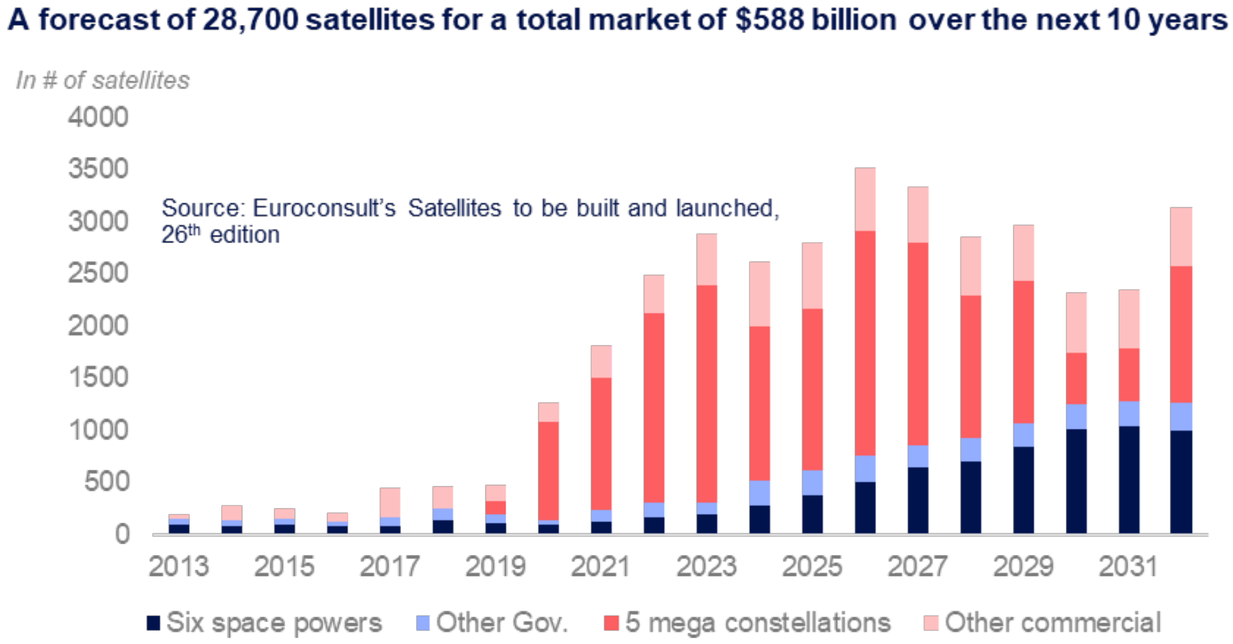
Active Satellites At The Start Of 2023 By Purpose

	Purpose	Number of Satellites
1	Earth Observation	1167
2	Navigation/Positioning	155
3	Communications	4823
4	Technology Development/Demonstration	414
5	Space Science/Observation	109
6	Earth Science	25
7	Other	25
8	Total	6718

Source: Union of Concerned Scientists (2023) and Pixalytics (2023)



Source: Euroconsult (n.d.)

WHAT IS EARTH OBSERVATION?

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- Earth Observation (EO) refers to the collection of data about Earth's physical, chemical and biological systems through satellites, airborne sensors, and ground-based methods.
- EO provides real-time, large-scale data that helps us understand environmental changes and manage natural resources.

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What do you think are the uses of Earth Observation?

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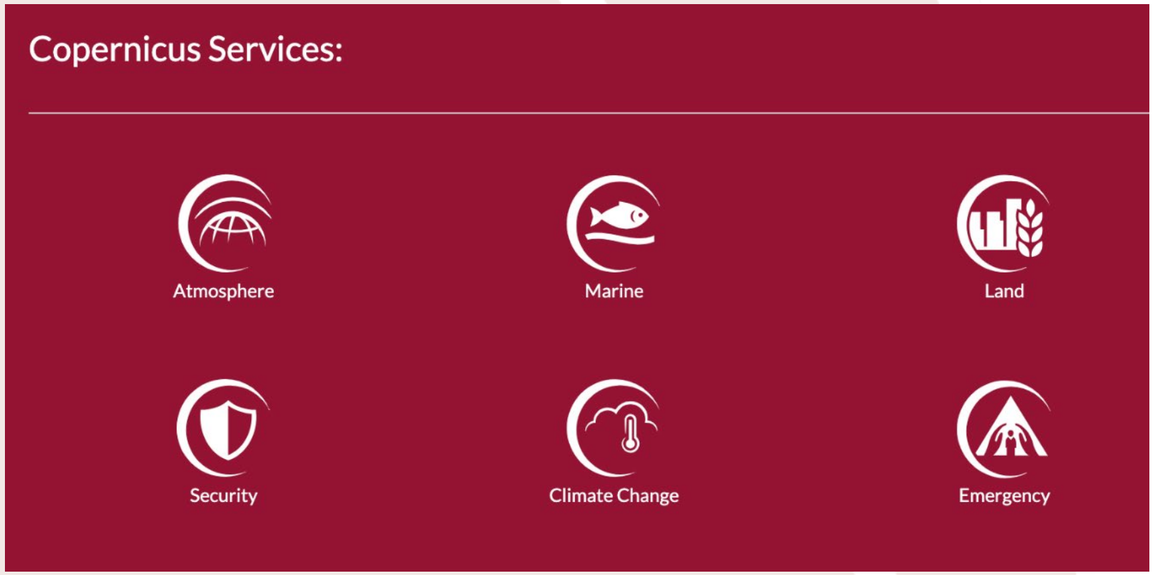
3. WHAT IS COPERNICUS AND HOW CAN IT HELP WITH THE ENVIRONMENT?

WHAT IS COPERNICUS?

- **Copernicus** is the European Union's Earth Observation programme, providing accurate, timely and open data about the Earth's environment.
- It is **managed by the European Commission** and operates through **Sentinel satellites**, which are specifically designed to monitor various environmental factors across the globe.

What Copernicus provides:

- **Free, accessible data** on **land**, **sea**, **atmosphere** and **climate**.
- Data from **Sentinel satellites** to monitor **agriculture**, **forests**, **water resources**, **air quality** and **urban development**.
- A variety of **services** for different sectors, including **security**, **emergency** and **climate change**.



Source: https://climate.copernicus.eu/sectoral-impacts

CLIMATE DATA EXAMPLES

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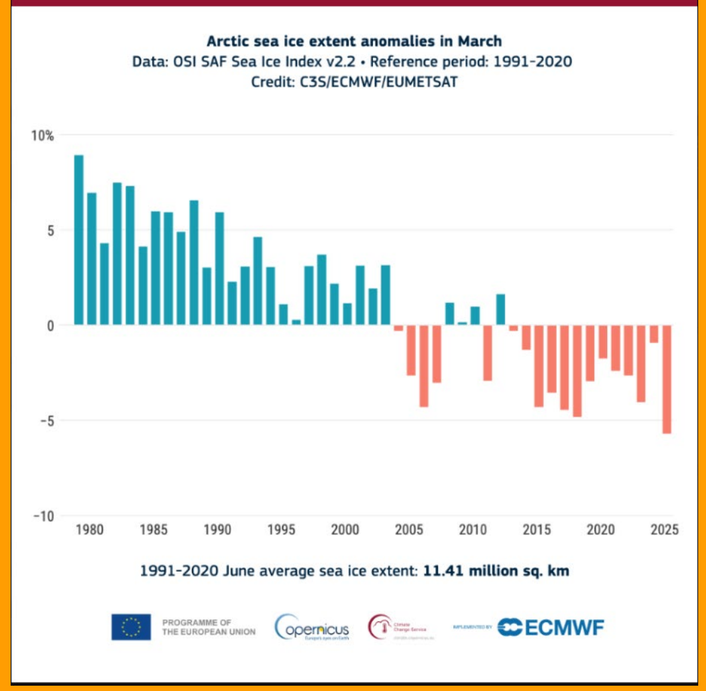
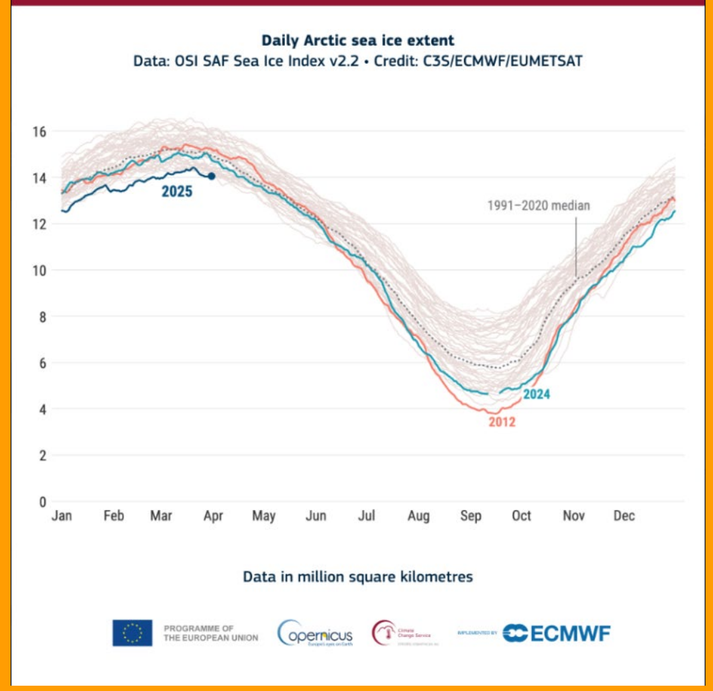
Arctic sea ice at lowest March extent in 47-year satellite record



Fourth consecutive month of record low Arctic sea-ice extent for the month



Source: @CopernicusECMWF on X: https://x.com/CopernicusECMWF/status/1909535919712895030

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March 2025 was the warmest March in Europe, according to Copernicus. What do you think was the average surface air temperature over land during that month?

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4. EXAMPLE: CITIZENS FOR COPERNICUS (C4C)

WHAT IS C4C?

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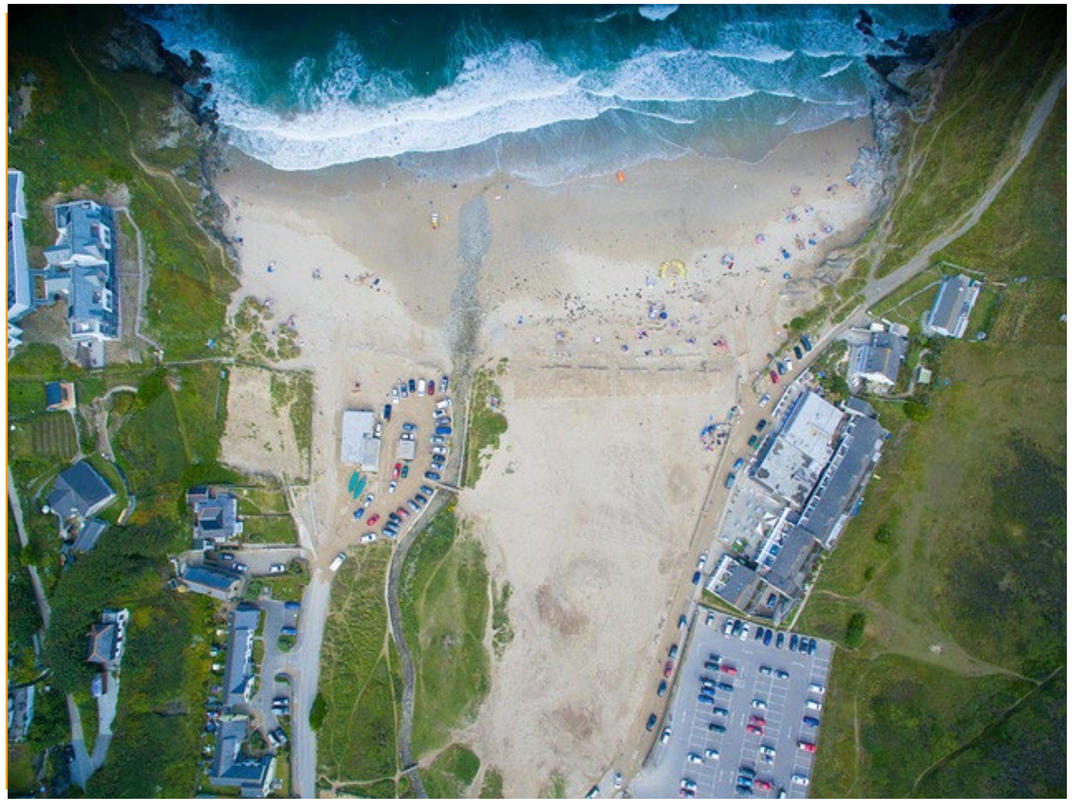

Overview of C4C

The **Citizens for Copernicus (C4C)** project combines **Copernicus satellite data** and **citizen science** to monitor forest resources, including biomass and carbon.

The project, coordinated by **IIASA's Novel Data Ecosystems for Sustainability Research Group**, aims to bridge the in situ data gap for **forest mapping** using artificial intelligence and satellite images from **Sentinel-1** and **Sentinel-2**.

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WHAT IS C4C?

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Key features of the C4C project:

- **Citizen participation:** Encourages the public to monitor local forest changes by capturing images with their smartphones, contributing valuable data to the project.
- **Combining data:** Utilises 3D vision and AI techniques for extraction of forest data from images, integrated with Copernicus satellite data for accurate forest monitoring.

Tests and applications:

- Forest biomass mapping w/ Tree.ly GmbH.
- Tree species mapping in collaboration with the Austrian Research Centre for Forests (BFW).
- Biomass assessment for trees outside forests with the Austrian Environment Agency.

Social and educational impact:

- The project also has a strong **social component**, raising awareness about how **citizen science** can support **climate neutrality** and the sustainable use of forest resources.
- **Permanent citizen science data**: Establishing a **long-term data component** for **Copernicus** validation, helping to set standards for **European and global citizen science efforts**.

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In Europe, forest covers about 180 million hectares, representing more than 40% of the total land area. What percentage of total greenhouse gas emissions do you think European Union forests absorb?

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5. RESOURCES FOR CITIZEN SCIENCE WITH EARTH OBSERVATION FOR CLIMATE ACTIVISTS

EARTH OBSERVATION DATA SOURCES FOR CLIMATE MONITORING

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NASA Earth Data

https://www.earthdata.nasa.gov/

Open Access hub

https://www.copernicus.eu/en/access-data

NOAA latest satellite imagery

https://www.nhc.noaa.gov/satellite.php

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CITIZEN SCIENCE PROJECTS UTILISING EARTH OBSERVATION

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LandSense

The LandSense project enhances environmental monitoring by engaging citizens to collect and integrate data, creating a comprehensive observatory for land use and land cover.

GEO-Wiki

The Geo-Wiki project, established in 2010 by IIASA, engages citizens in monitoring the Earth's surface through classifying satellite, drone and ground-level imagery, integrating citizen-derived data with expert sources to address global challenges.

The mPING project by NOAA's National Severe Storms Laboratory collects public weather reports through a free app, enabling users to submit real-time observations of meteorological phenomena to improve weather forecasting and research.

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IT TAKES A VILLAGE
TO RAISE CLIMATE AWARENESS!

THANK YOU!

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LET'S GET A TASTE OF CITIZEN SCIENCE

#MyWorldOurPlanet #EUClimatePact

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LET'S TRY ZOONIVERSE

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ZOONIVERSE

Go to https://www.zooniverse.org/projects/physicsjosh/tag-trees, get familiar with the instructions and follow10 classifications.

Once you are done with that, go to https://www.zooniverse.org/projects/benjamin-dot-richards/oceaneyes and try 10 classifications.

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What is the one thing you learned today that you didn’t know before?

How did you feel participating in a citizen science project today?

Would you consider taking part in a citizen science project in the future?

REGISTER

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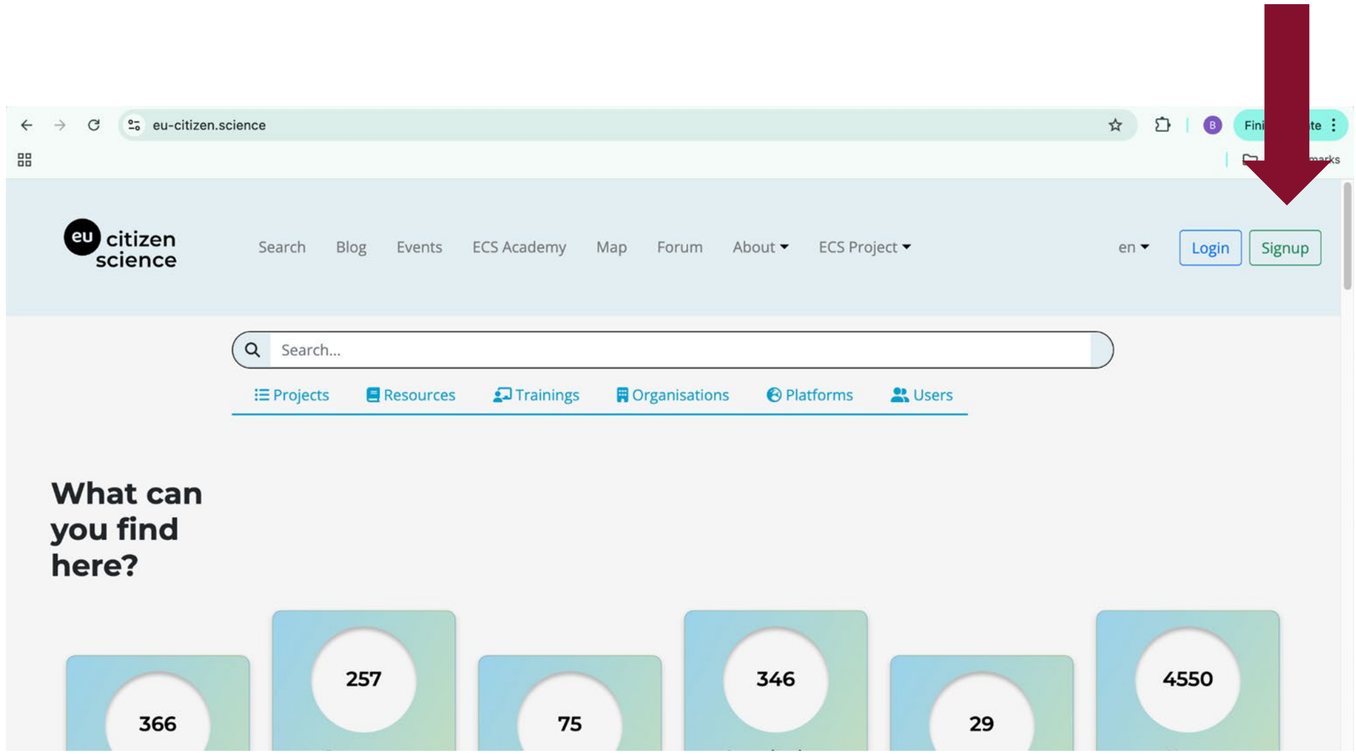
The European Citizen Science platform
https://eu-citizen.science/



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THE INATURALIST CITIZEN SCIENCE PROJECT

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iNaturalist is a joint initiative by the California Academy of Sciences and the National Geographic Society.

Over 2.4 million observers are active on the platform, with over 270,000 identifiers and over 110 observations.

ANDROID APP ON Google Play

Download on the App Store

Download iNaturalist

- Create an account
- Explore the website and projects
- Download the app on your phone
- Join a project if any available
- Make 5 observations
- How was it?

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Questions & answers

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Final remarks

EXCITING NEWS

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EU Climate Action Academy is launching on the EU Academy platform

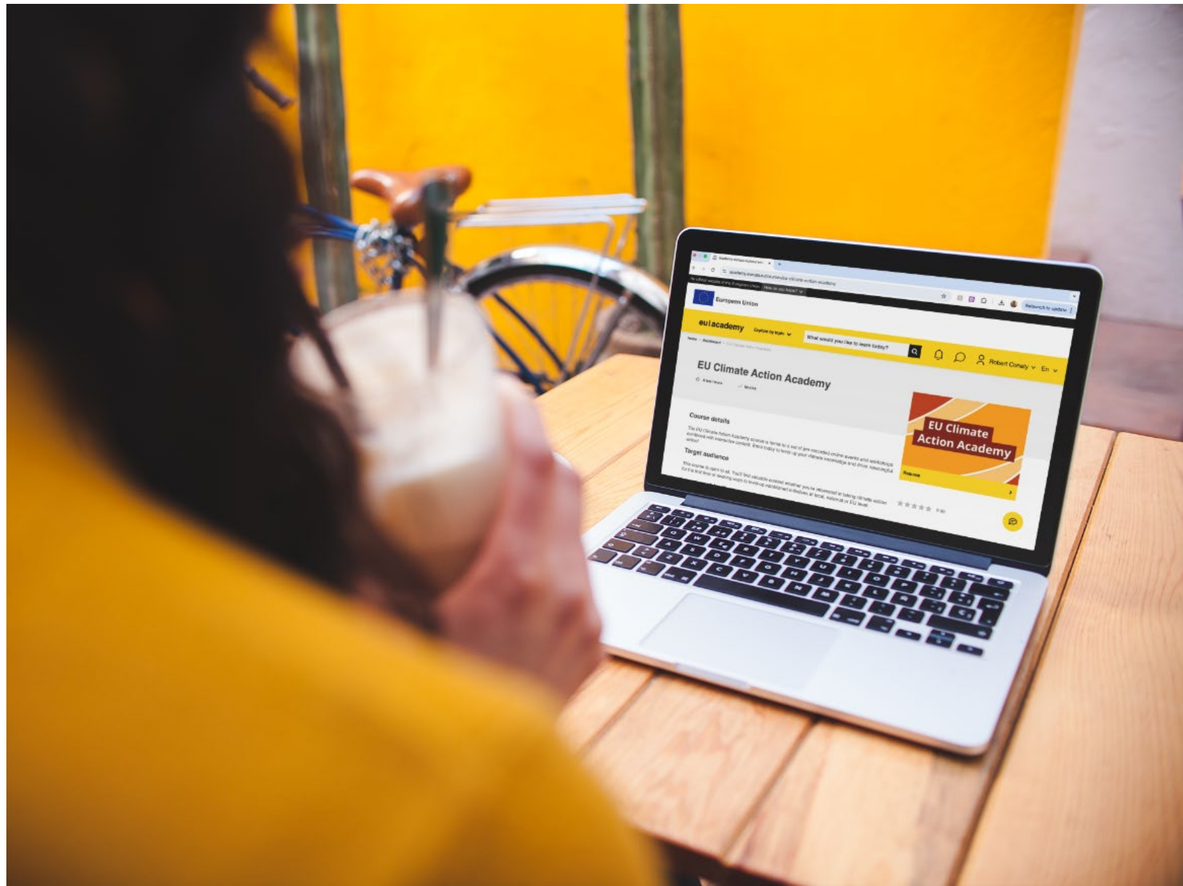
Missed an EU Climate Action Academy webinar? Don’t worry.

Every webinar hosted so far (and all future ones) will be available on the EU Academy platform.

Key features:

- Quizzes and resources to enhance your learning
- Learn at your pace – EU Academy will save your progress

Watch your inbox for an invitation to enrol very soon!



CLIMATE PACT ACTIVITIES

EUROPEAN CLIMATE PACT

Visit the Climate Pact website to:

- 📚 Build your climate knowledge with the EU Climate Action Academy's resources
- 🤝 Connect with Climate Pact Ambassadors, Partners and Country Coordinators
- 📣 Get inspired by our photo competition winners
- 🛠️ Check out our tools for citizen engagement
- 🗓️ Discover Climate Pact satellite events near you
- 📰 Subscribe to the newsletter!

Follow the QR code to visit the website

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THANK YOU VERY MUCH
FOR ATTENDING THE WEBINAR TODAY!

*An **evaluation survey** will pop up when you leave the webinar.*
We would appreciate your feedback.

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ADDITIONAL RESOURCES

Additional Climate Pact resources
and tools for mobilising collective climate action

#MyWorldOurPlanet #EUClimatePact

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CITIZEN SCIENCE TOOLKIT FOR CLIMATE ASSEMBLIES

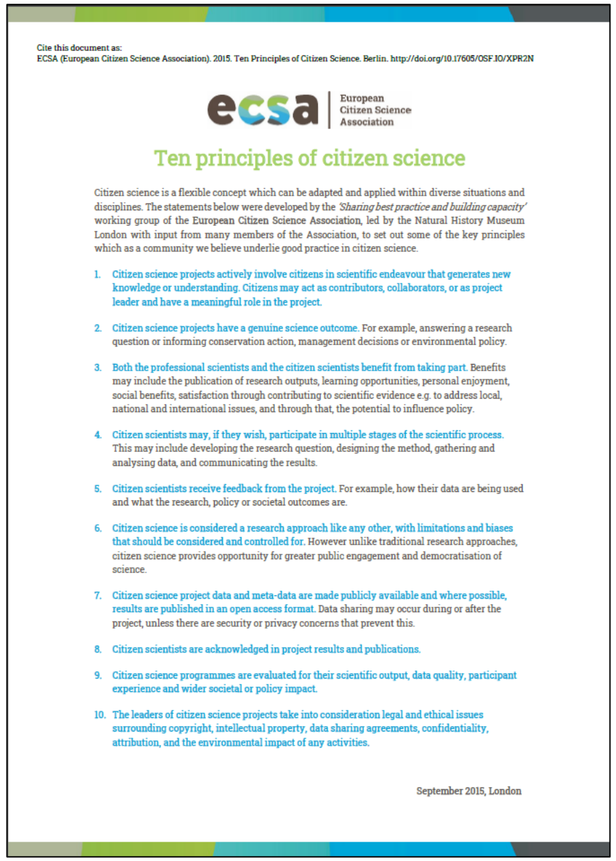
The 10 key principles that underlie good practice in citizen science, according to the European Citizen Science Association.

Citizen science is a flexible concept that can be adapted and applied within diverse situations and disciplines.

The statements in this document set out some key principles that underlie good practice in citizen science.

Author: European Citizen Science Association (ECSA)

Download



Cite this document as:
ECSA (European Citizen Science Association). 2015. Ten Principles of Citizen Science. Berlin. http://doi.org/10.17605/OSF.IO/XPR2N

ecsa | European Citizen Science Association

Ten principles of citizen science

Citizen science is a flexible concept which can be adapted and applied within diverse situations and disciplines. The statements below were developed by the *'Sharing best practice and building capacity'* working group of the European Citizen Science Association, led by the Natural History Museum London with input from many members of the Association, to set out some of the key principles which as a community we believe underlie good practice in citizen science.

1. **Citizen science projects actively involve citizens in scientific endeavour that generates new knowledge or understanding. Citizens may act as contributors, collaborators, or as project leader and have a meaningful role in the project.**
2. **Citizen science projects have a genuine science outcome.** For example, answering a research question or informing conservation action, management decisions or environmental policy.
3. **Both the professional scientists and the citizen scientists benefit from taking part.** 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.
4. **Citizen scientists may, if they wish, participate in multiple stages of the scientific process.** This may include developing the research question, designing the method, gathering and analysing data, and communicating the results.
5. **Citizen scientists receive feedback from the project.** For example, how their data are being used and what the research, policy or societal outcomes are.
6. **Citizen science is considered a research approach like any other, with limitations and biases that should be considered and controlled for.** However unlike traditional research approaches, citizen science provides opportunity for greater public engagement and democratisation of science.
7. **Citizen science project data and meta-data are made publicly available and where possible, results are published in an open access format.** Data sharing may occur during or after the project, unless there are security or privacy concerns that prevent this.
8. **Citizen scientists are acknowledged in project results and publications.**
9. **Citizen science programmes are evaluated for their scientific output, data quality, participant experience and wider societal or policy impact.**
10. **The leaders of citizen science projects take into consideration legal and ethical issues surrounding copyright, intellectual property, data sharing agreements, confidentiality, attribution, and the environmental impact of any activities.**

September 2015, London

CALL FOR CITIZEN SCIENCE PROJECTS FOR CITIZEN CLIMATE ASSEMBLIES

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The CLIMAS project is developing a toolkit for citizen climate assemblies. As part of the development of this toolkit, they are seeking citizen science projects that can be used to engage citizens in climate action and inform policy decisions.

CLIMAS

They are interested in a wide range of citizen science projects that are relevant to climate change, and specially encourage citizen social science projects. Examples of potential projects include monitoring environmental indicators, mapping climate impacts, developing climate change adaptation strategies, evaluating climate change policies, etc.

The toolkit is expected to be published in November 2025.
Find more information here and find the **application form** here.

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PROJECT AURORA – TACKLING CLIMATE CHANGE

EUROPEAN CLIMATE PACT

Citizen science and climate change

A €4.6 million EU Horizon 2020 Innovation Action Project to show how citizens can join forces to become ‘near zero emission citizens’

The project links the establishment of energy communities to reductions in personal carbon emissions and aims to crowd-fund photovoltaic facilities to produce ca. 1 megawatt of renewable energy.

The project has developed a mobile app to allow participants to monitor their own behavioural patterns and measure progress using a unique carbon labelling scheme.

The project aims to develop citizen science methods that can be applied across Europe to tackle climate change mitigation.

Visit the website!

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EU POLICY BRIEF CITIZEN SCIENCE

EUROPEAN CLIMATE PACT

Citizen science and EU regulations – a new approach

Citizen science can improve the delivery of EU Law.

To do so requires a fundamental shift in how EU law is drafted and implemented.

This policy brief from AURORA, COMPAIR, GreenSCENT, I-CHANGE, Iliad and SOCIO-BEE recommends a way forward in how the considerable investment in citizen science research can be harnessed for that purpose.

Download

Highlights

Citizen science offers a new and disruptive approach to support the policy goals of EU Directives and Regulations. It requires a new way of thinking from the European Commission in the way EU Law is drafted and in how regulators in Member States deliver their legal obligations.

The European Union is now a global leader in research into how citizen science can support the delivery of EU policy. To build on that leadership and harness the power of citizen science in the delivery of EU policy will require a shift in thinking by current DG policy leads.

Citizen science and crowd sourcing can accelerate the delivery of key EU policies that are addressing critical societal need. To make it happen requires action in the policy DGs supported by senior management, that will allow current citizen science methods to be scaled up within a common European framework from local to national and European programmes.

Summary

This policy brief outlines the opportunity available to the European Commission, The Council of the European Union and the European Parliament, to scale up and integrate proven citizen science research outputs into new implementation mechanisms for EU Environmental Law. It proposes a route map that would support this process and suggests a review of existing and proposed EU Environmental law to ensure that the opportunity is fully exploited. The brief also outlines the cost and data benefits for such an approach and indicates why involving citizens is likely to accelerate behaviour change in support of EU Environmental Policy.

What is Citizen Science?

Citizen science is the public participating 'in scientific research activities when citizens actively contribute to science either with their intellectual effort or surrounding knowledge or with their tools and resources' (European Commission, 2014)

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INTERNATIONAL CHARTER FOR CITIZEN SCIENCE

EUROPEAN CLIMATE PACT

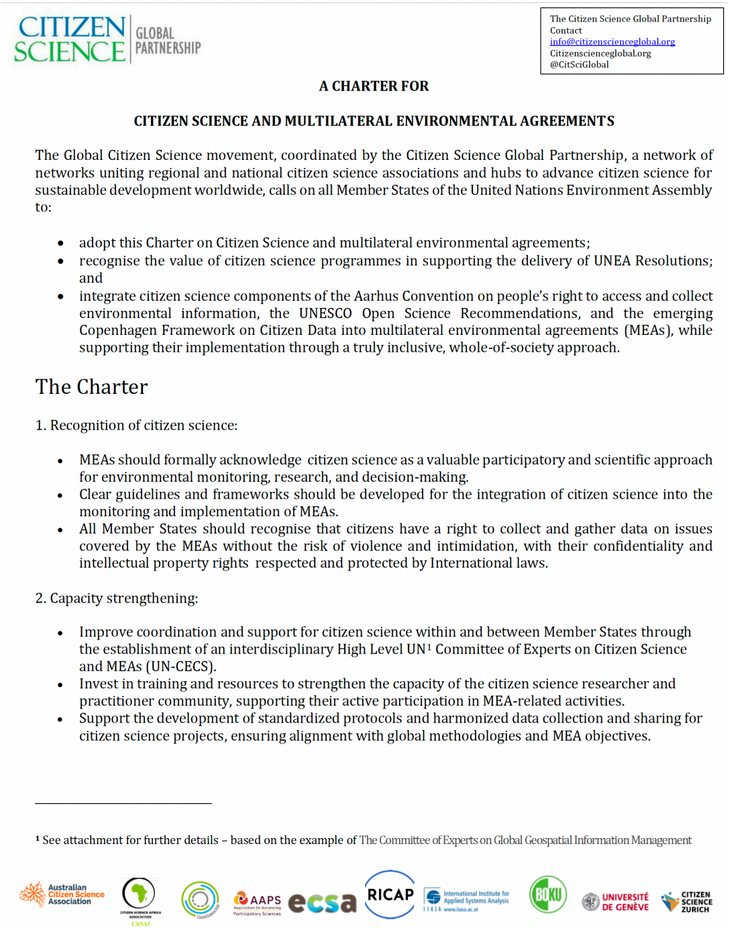
Citizen science and international agreements

The Global citizen science movement, coordinated by the Citizen Science Global Partnership has drafted a charter that outlines how citizen science can be incorporated into international environmental agreements.

The charter has sections covering: recognition of citizen science; capacity strengthening for citizen science; data sharing and integration; knowledge generation and collaboration; policy and decision making; funding and sustainability; global collaboration and networking.

Download

Author : Citizen Science Global Partnership (CSGP)
https://citizenscienceglobal.org



CITIZEN SCIENCE GLOBAL PARTNERSHIP

The Citizen Science Global Partnership
Contact
info@citizenscienceglobal.org
Citizenscienceglobal.org
@CitSciGlobal

A CHARTER FOR

CITIZEN SCIENCE AND MULTILATERAL ENVIRONMENTAL AGREEMENTS

The Global Citizen Science movement, coordinated by the Citizen Science Global Partnership, a network of networks uniting regional and national citizen science associations and hubs to advance citizen science for sustainable development worldwide, calls on all Member States of the United Nations Environment Assembly to:

- adopt this Charter on Citizen Science and multilateral environmental agreements;
- recognise the value of citizen science programmes in supporting the delivery of UNEA Resolutions; and
- integrate citizen science components of the Aarhus Convention on people's right to access and collect environmental information, the UNESCO Open Science Recommendations, and the emerging Copenhagen Framework on Citizen Data into multilateral environmental agreements (MEAs), while supporting their implementation through a truly inclusive, whole-of-society approach.

The Charter

1. Recognition of citizen science:

- MEAs should formally acknowledge citizen science as a valuable participatory and scientific approach for environmental monitoring, research, and decision-making.
- Clear guidelines and frameworks should be developed for the integration of citizen science into the monitoring and implementation of MEAs.
- All Member States should recognise that citizens have a right to collect and gather data on issues covered by the MEAs without the risk of violence and intimidation, with their confidentiality and intellectual property rights respected and protected by International laws.

2. Capacity strengthening:

- Improve coordination and support for citizen science within and between Member States through the establishment of an interdisciplinary High Level UN[1] Committee of Experts on Citizen Science and MEAs (UN-CECS).
- Invest in training and resources to strengthen the capacity of the citizen science researcher and practitioner community, supporting their active participation in MEA-related activities.
- Support the development of standardized protocols and harmonized data collection and sharing for citizen science projects, ensuring alignment with global methodologies and MEA objectives.

[1] See attachment for further details – based on the example of The Committee of Experts on Global Geospatial Information Management

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EU POLICY BRIEF CITIZEN SCIENCE

EUROPEAN CLIMATE PACT

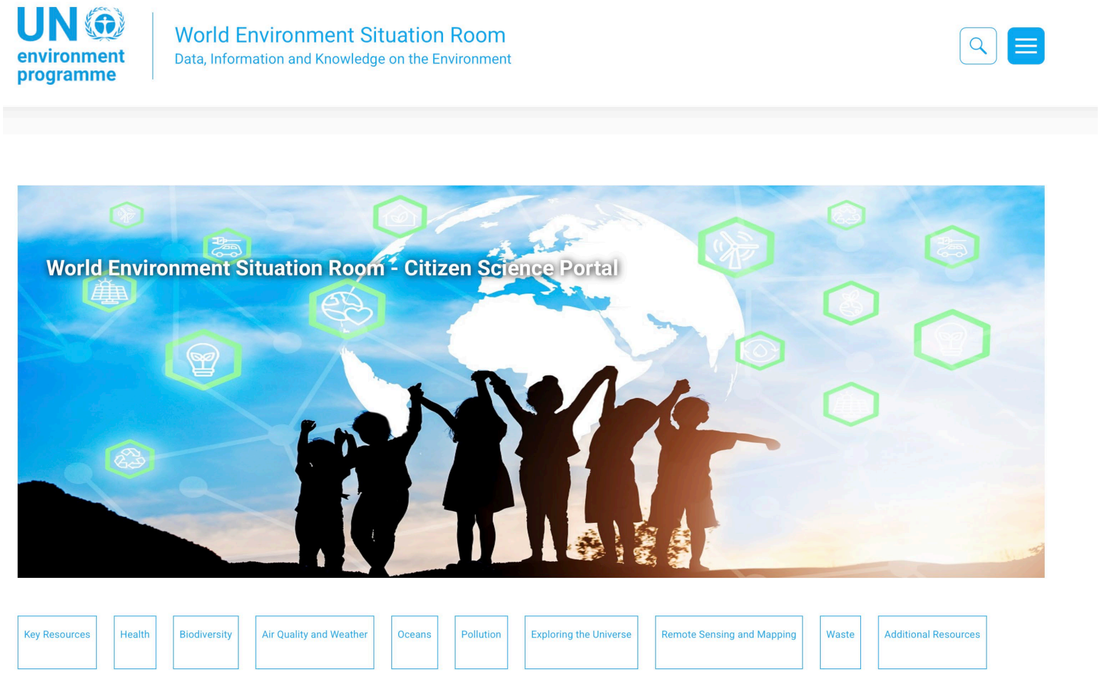
WORLD ENVIRONMENT SIUTATION ROOM CITIZEN SCIENCE PORTAL

The World Environment Situation Room (WESR) is a global Data, Information and Knowledge portal on the Environment.

The Citizen Science section provides examples of best global practice for citizen science projects for health; biodiversity; air quality and weather; oceans; exploring the universe; remote sensing and mapping; and waste.

Links are provided to other global resources on citizen science.

Visit the portal!



Author – Co-ordinated by the Citizen Science Global Partnership with support from UNEP and regional citizen science associations
https://wesr.unep.org/article/citizen-science

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