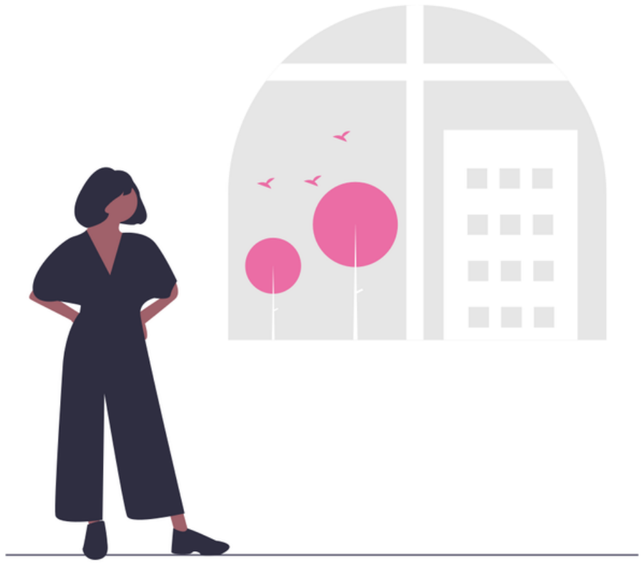
CITIZEN SCIENCE

IN SCIENCE, ASK...

WHY?

How can we participate in and create Citizen Science projects?



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What is Citizen Science?

What is Citizen Science?

Citizen science is any **activity that engages the public in scientific research** and thus has the potential to bring science, policymakers, and society as a whole together in a way that has an impact.

10 Principles of Citizen Science

1. Citizen Science projects actively involve citizens in scientific endeavors, which produce new knowledge or understanding.
2. Citizen Science programmes have authentic scientific results
3. Both professional scientists and citizen scientists benefit from participating
4. Citizens can, if they wish, participate in multiple stages of the scientific process
5. Citizens receive feedback from the project

10 Principles of Citizen Science

6 Unlike traditional research approaches, Citizen Science provides the opportunity for greater public participation and the democratisation of science.

7 Data and metadata in Citizen Science projects are made public and where possible, results are published in an open access format

8 Citizens and their contributions are recognised in project results and publications

9 Citizen Science projects are evaluated for their scientific outputs, data quality, participant experience and wider social or political impact.

10 Heads of Citizen Science programmes take into account legal and ethical issues in relation to authorship, intellectual property, data sharing agreements, confidentiality, provenance reporting and the environmental impact of any activity

Citizen science

Citizen science is divided into Data Analysis and Data Collection.

Data Analysis is done by examining data that has already been collected.

Data Collection is done at the individual level from the devices we have (e.g. mobile phones, tablets)

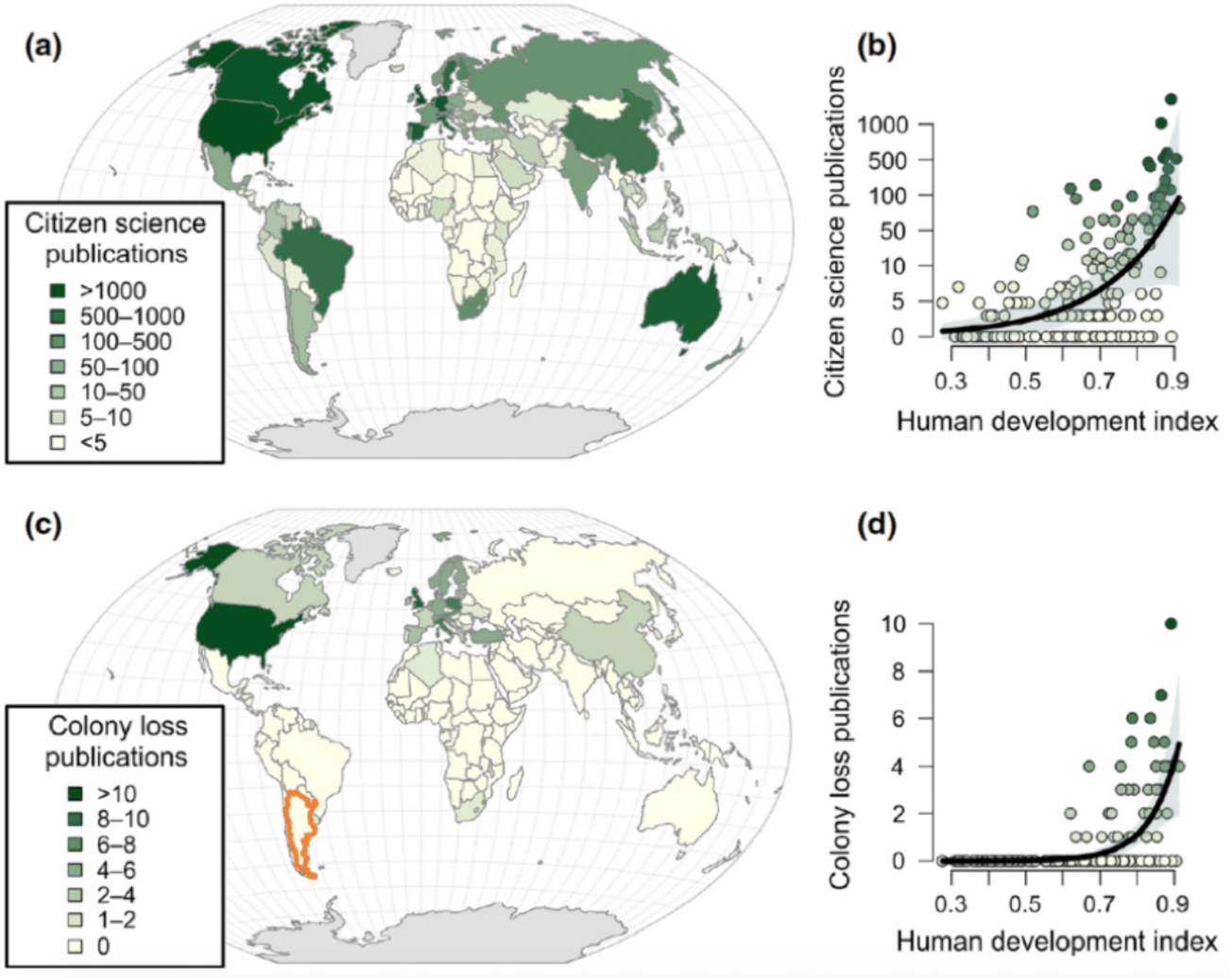
DATA COLLECTION

During Data Collection there is an almost simultaneous evaluation and identification of the data in order to ensure the reliability of the process.

Citizen Science is directly linked to the implementation of the SDGs (Sustainable Development Goals)

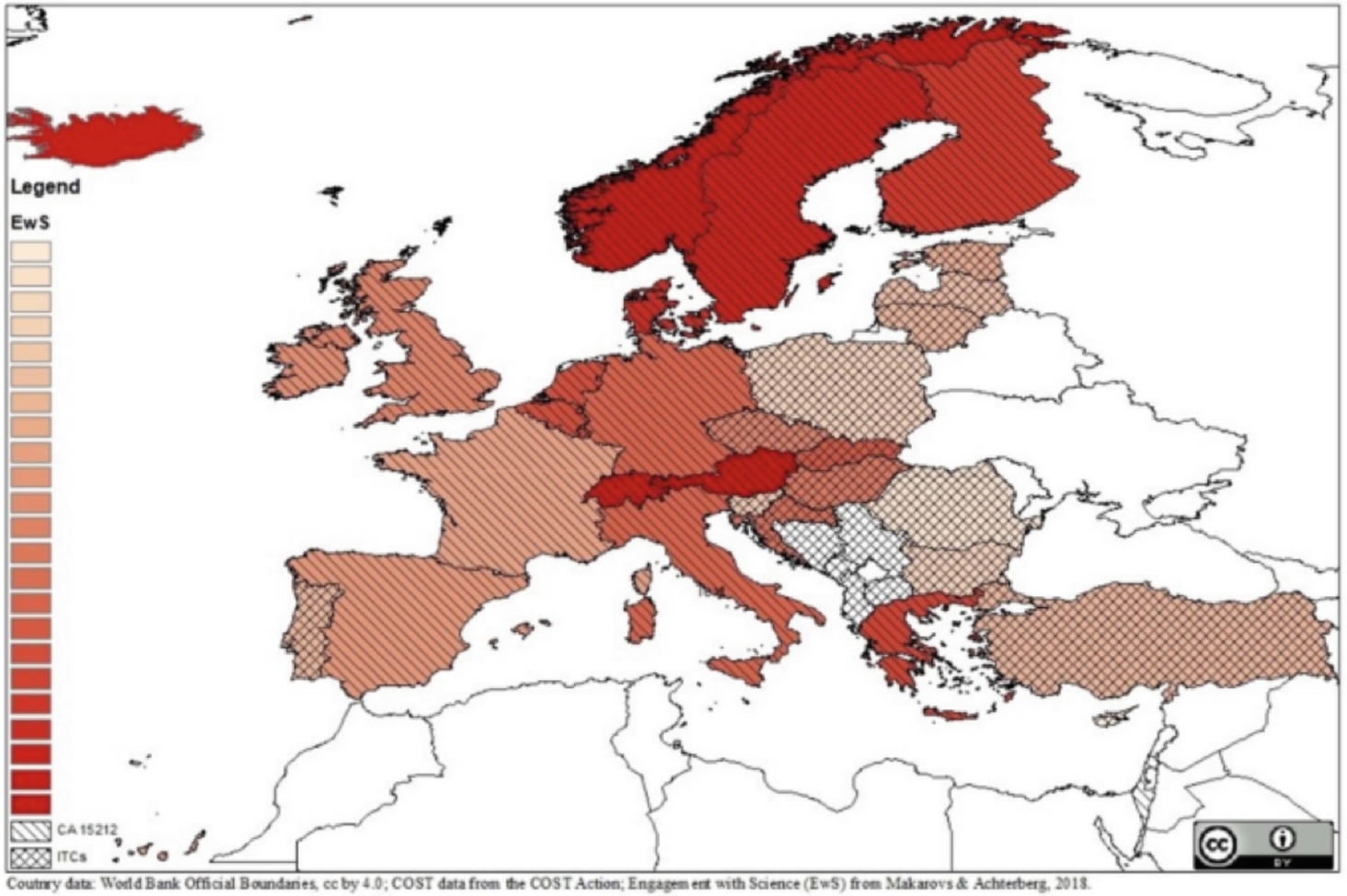
For the Tier-3 Indicators there is no methodology for data collection, which is solely assisted by Citizen Science.

CITIZEN SCIENCE AROUND THE WORLD



https://www.researchgate.net/figure/Global-map-of-where-citizen-science-studies-are-conducted-a-The-global-distribution-of_fig1_338409924

CITIZEN SCIENCE AROUND THE WORLD



Country data: World Bank Official Boundaries, cc by 4.0; COST data from the COST Action; Engagement with Science (EwS) from Makarovs & Achterberg, 2018.

https://media.springernature.com/lw685/springer-static/image/chp%3A10.1007%2F978-3-030-58278-4_3/MediaObjects/978-3-030-58278-4_3_Fig1_HTML.png

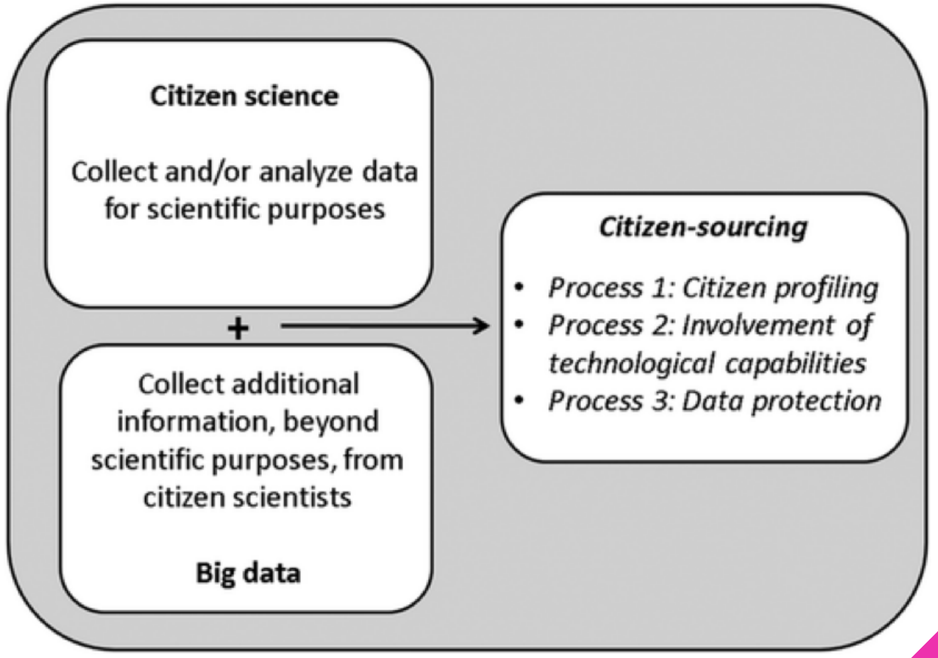
CITIZEN SCIENCE AND AI

- Using **data collected** from humans to train artificial intelligence on the operation of Citizen Science.
- **Confirmation** of data collected from AI agents by human agents.
- **Collaboration**: collecting data from humans that AI agents cannot reach.
- **Initial classification** of the area under study by humans.

How does Citizen Science relate to Big Data and Analytics and App Development?

CITIZEN SCIENCE AND BIG DATA

- Collecting and processing huge amounts of data.
- Extraction of valuable information from the entire volume of data.
- Despite the use of Citizen Science for defined scientific purposes, the interaction can be exploited beyond the target, thus generating big data.



https://onlinelibrary.wiley.com/doi/full/10.1002/bse.2942

Create your own
CITIZEN SCIENCE PROJECT

https://www.citizenscience.gov/toolkit/howto/#

Take part in Citizen Science actions too

Citizen Science Platforms

EU-CITIZEN SCIENCE

https://eu-citizen.science/

ZOONIVERSE

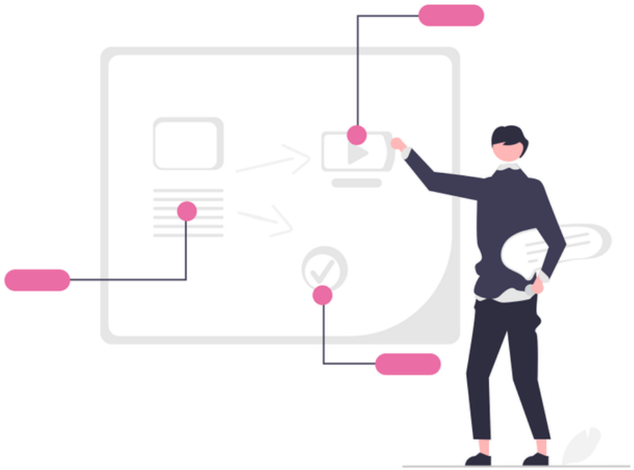
https://www.zooniverse.org/projects

NASA

https://science.nasa.gov/citizenscience

SCI-STARTER

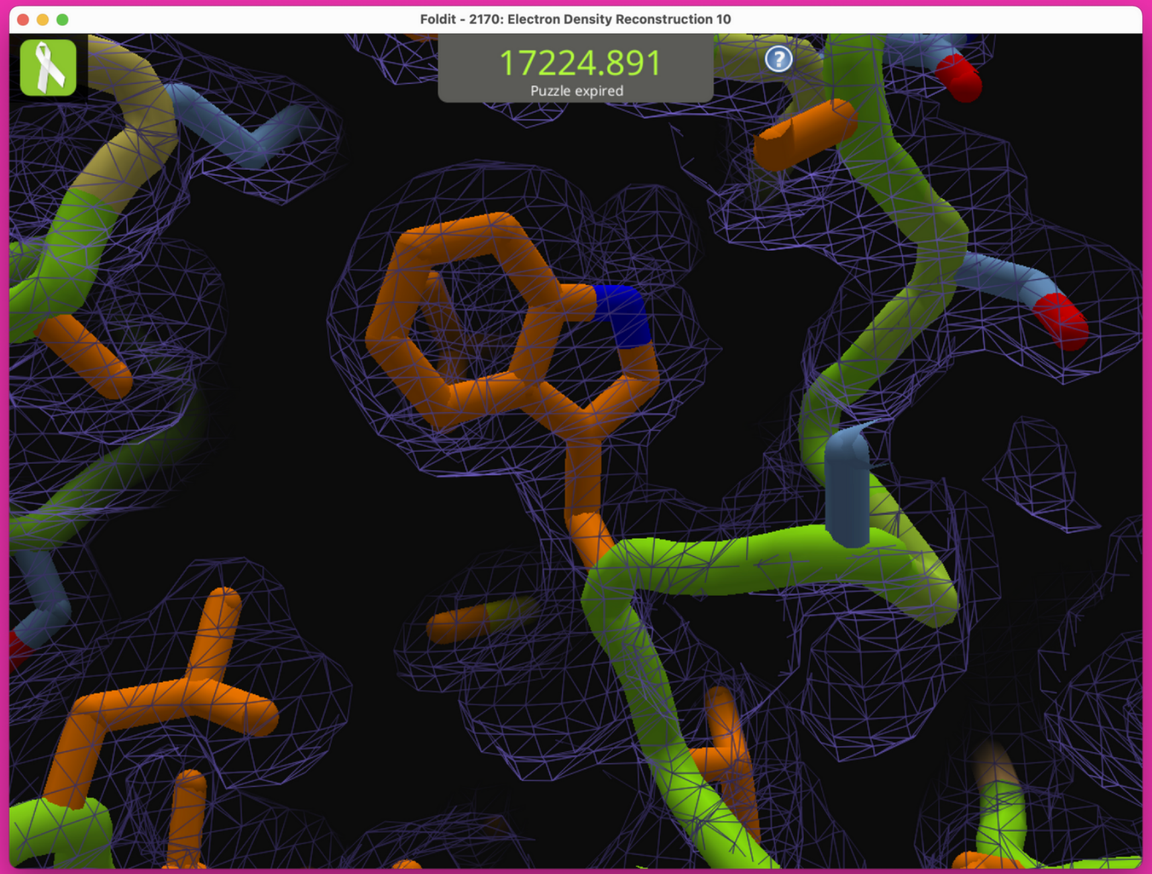
https://scistarter.org/



FOLD IT

Foldit is an online video puzzle game about protein folding

https://fold.it/about_foldit



MARINE DEBRIS TRACKER

https://scistarter.org/marine-debris-tracker

CLOUDSPOTTING ON MARS

https://www.zooniverse.org/projects/marek-slipski/cloudspotting-on-mars

NANOCRAFTER

https://scistarter.org/nanocrafter

SMITHSONIAN TRANSCRIPTION CENTER

https://scistarter.org/smithsonian-transcription-center

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Why is Citizen Science important?

BROWSE ZOONIVERSE AND CHOOSE A CITIZEN SCIENCE PROJECT

https://www.zooniverse.org/

QUESTIONS