CS TRACK
Investigating Citizen Science

# CS-Track database: a central database of CS projects in Europe that can be key to understand the connection of CS and SDGs

**“Understanding the nature of Citizen Science in a rapidly changing world”**

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# Context: typical data sources for SDG reporting

- Traditional data sources are not sufficient for measuring the United Nations Sustainable Development Goals - SDGs (Fritz et al, 2019; Fraisl et al, 2020)
- Data are sourced primarily from global databases maintained by international organizations, national statistical offices and other government agencies → these data are costly to obtain and it is not sufficient

Recent studies show the value of using data from Citizen Science for the SDGs

# Context: Data from CS for the SDGs

- Promote dialogue on data quality, data management including standards, metadata and interoperability is a key action
    - In this context the PPSR core metadata standard is proposed

- This is a relative slow process, for this reason on the meantime…

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# CS Track: Expanding our knowledge on Citizen Science through analytics and analysis

**Main goal**: to broaden the existing knowledge about Citizen Science (CS)

See: https://cstrack.eu/

**One main contribution** from CS-Track is the development of one central database aiming to compile a comprehensive collection of CS-projects, mainly visible on the Web, in the European Union and Associated Countries as complete as possible

→ **The CS-Track database** opens a new perspective on CS knowledge by observing and characterizing initiatives through a quantitative approach that relies on web-based and social-network analytics

# CS Track database - overview

- **Database (2022)** overview


http://database.cstrack.upf.edu/public/dashboard/daf5167e-7023-4d76-8059-064cd1219476

# How the CS Track database can contribute in the reporting of SDGs?

Identify targets and indicators (number of citizen involved, societal problems solved, citizen learning, etc..)


Fig. 1 Methodology for the systematic review of the SDG indicators for citizen science

Fraisl, D., Campbell, J., See, L. *et al.* Mapping citizen science contributions to the UN sustainable development goals. *Sustain Sci* (2020).

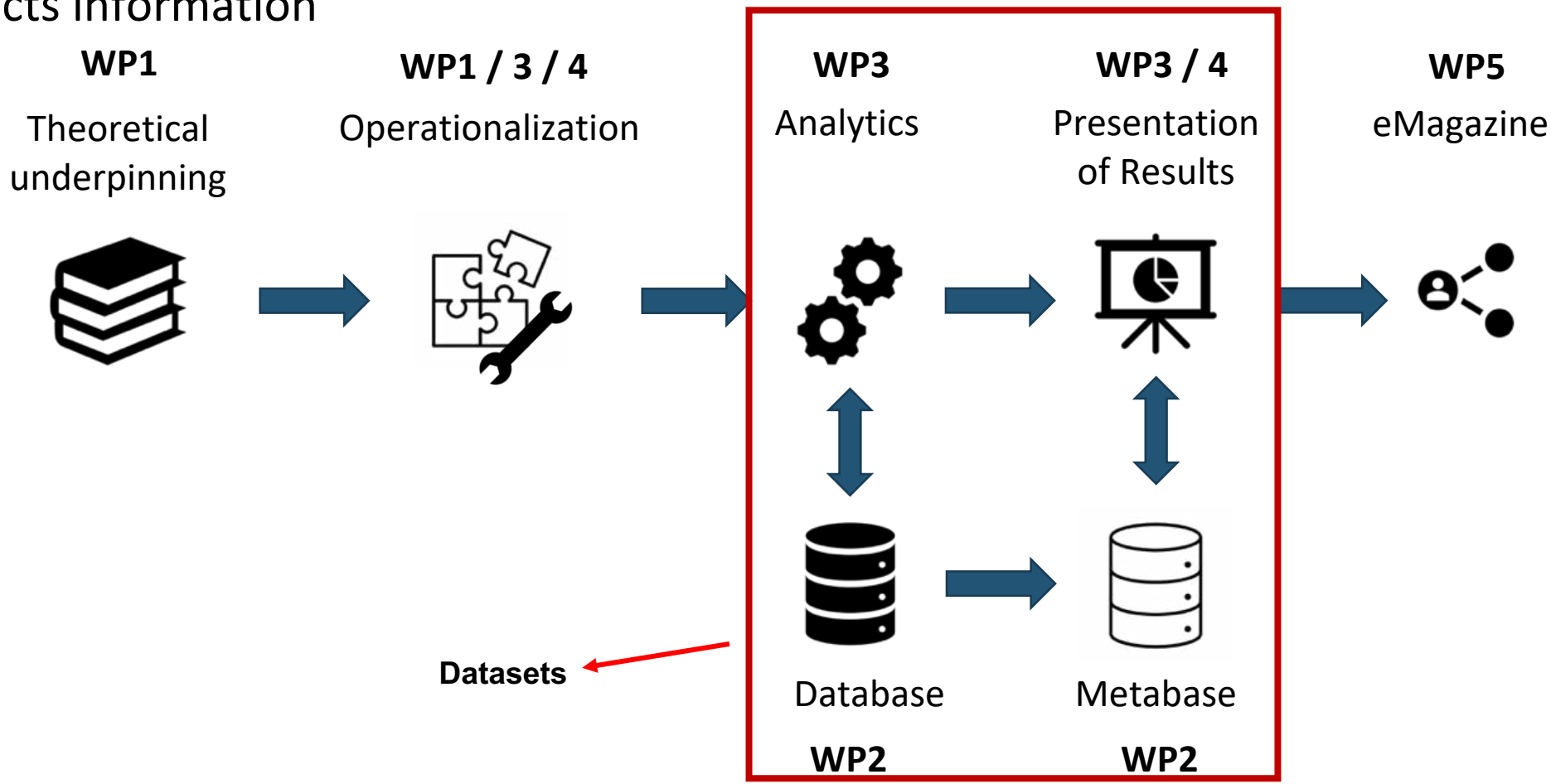
# How the CS Track database can contribute in the reporting of SDGs?

Identify the descriptors to elaborate the metrics (GOALS)


http://database.cstrack.upf.edu/public/dashboard/351e4cc4-7357-46d1-b7f6-0edc63b89463

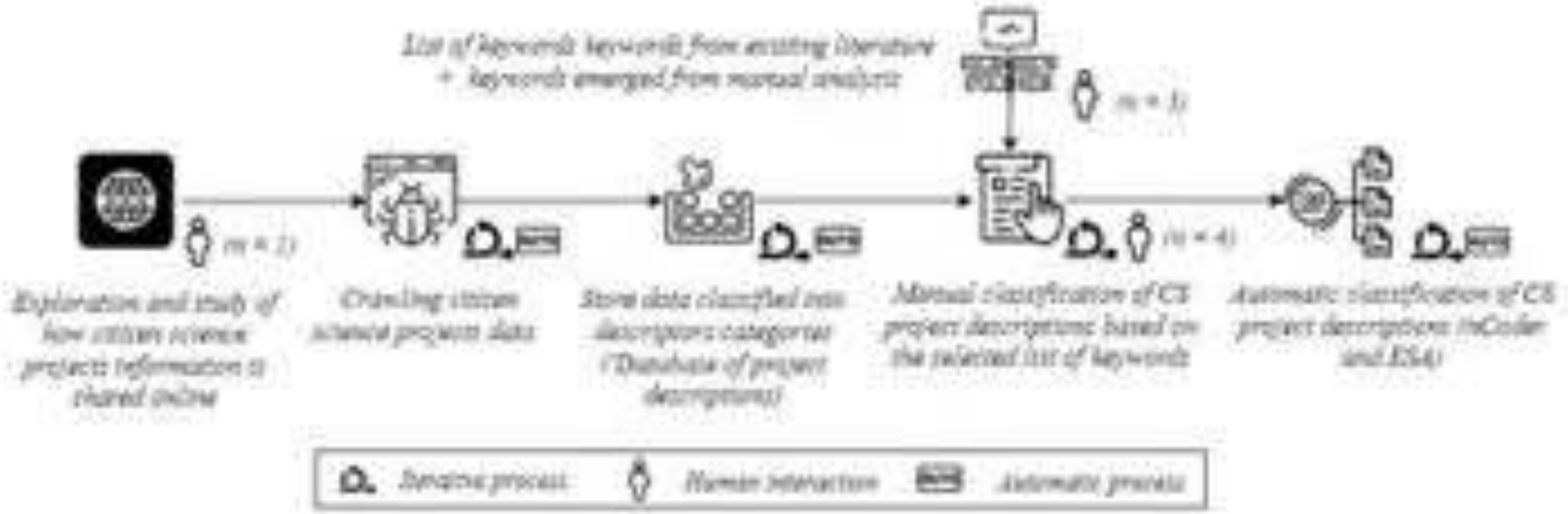
# How the CS Track database can contribute in the reporting of SDGs?

Publication of datasets to be used as open data & Creation of public dashboards with CS projects information



# How the CS Track database can contribute in the reporting of SDGs?

**Case study**: A total of 208 projects from 16 CS platforms were randomly selected with the following criteria:  project descriptions should be in English

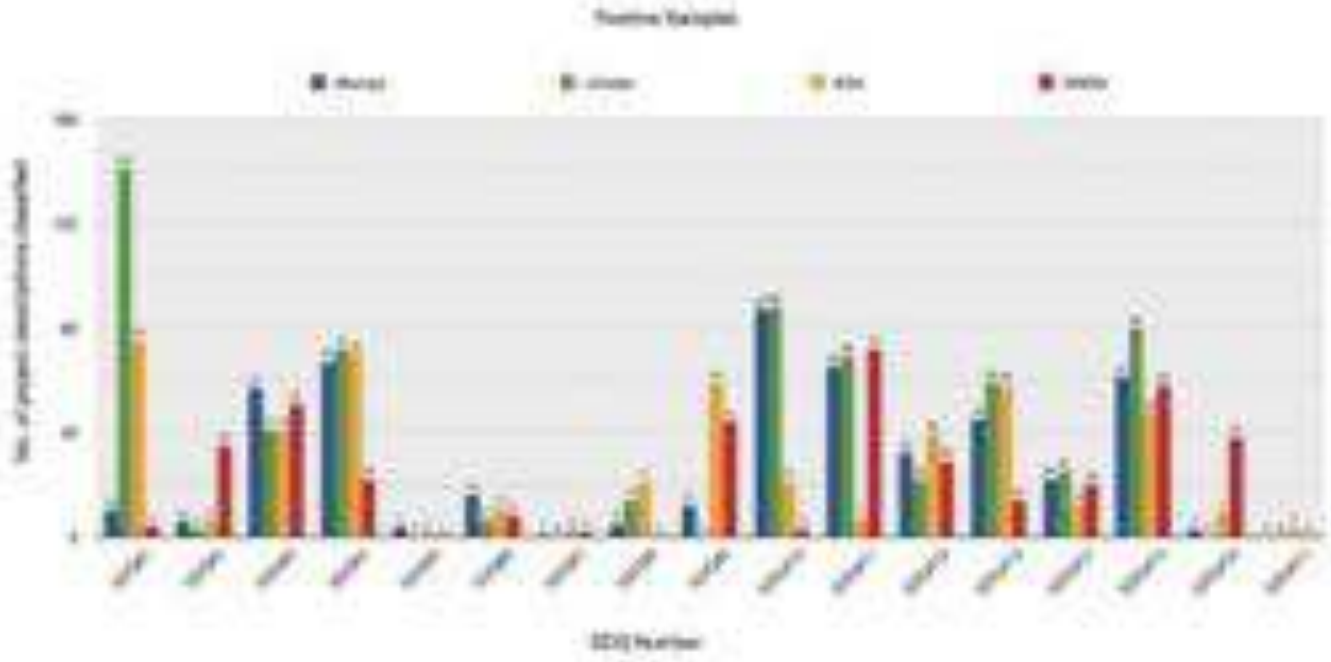


An analysis of different automatic classifiers (nCoder, ESA, OSDG and BERT ) was done and compared among them and with manual analysis

# Case study: SDG classification results

Despite that our dataset was randomly built we observe coincidences with previous results in the literature.

Most represented ones are:
SDG#4 (Quality Education), SDG#11 (Sustainable Cities and Communities), SDG#13 (Climate Action) and SDG#15 (Life on Land).



The case of SDG#10 (Reduced inequalities) is a curious case to be further investigated in the future. Similarly, to the case of SDG#4, SDG#10 seems to be a transversal SDG that can be associated with multiple disciplines.

The similarity between different SDGs is also observed in our results. Most similar SDGS are: SDG#5 with SDG#8; SDG#6 and SDG#14; SDG#4 and SDG#10; SDG#3 and SDG#10

# Conclusion and Next Steps

★ There is still work to be done to standardize the data structure of CS Platforms/Projects visible online

- One major barrier is the quality of data collected from CS platforms because of the different structures and metadata

★ We raise the importance of including a specific connection between SDG indicators and CS project descriptions

★ The main aim of the case study was focused on understanding the advantages and limitations of text-classification techniques to enhance the understanding of the relationship between CS and SDGs