Review of practices of Higher Education engagement in citizen enhanced open science in the area of cultural heritage

Katerina Zourou, Ph.D. Web2Learn, Greece

Webinar organised by the Working group *Citizen Science and Universities* of the European Citizen Science Association, 26 October 2021

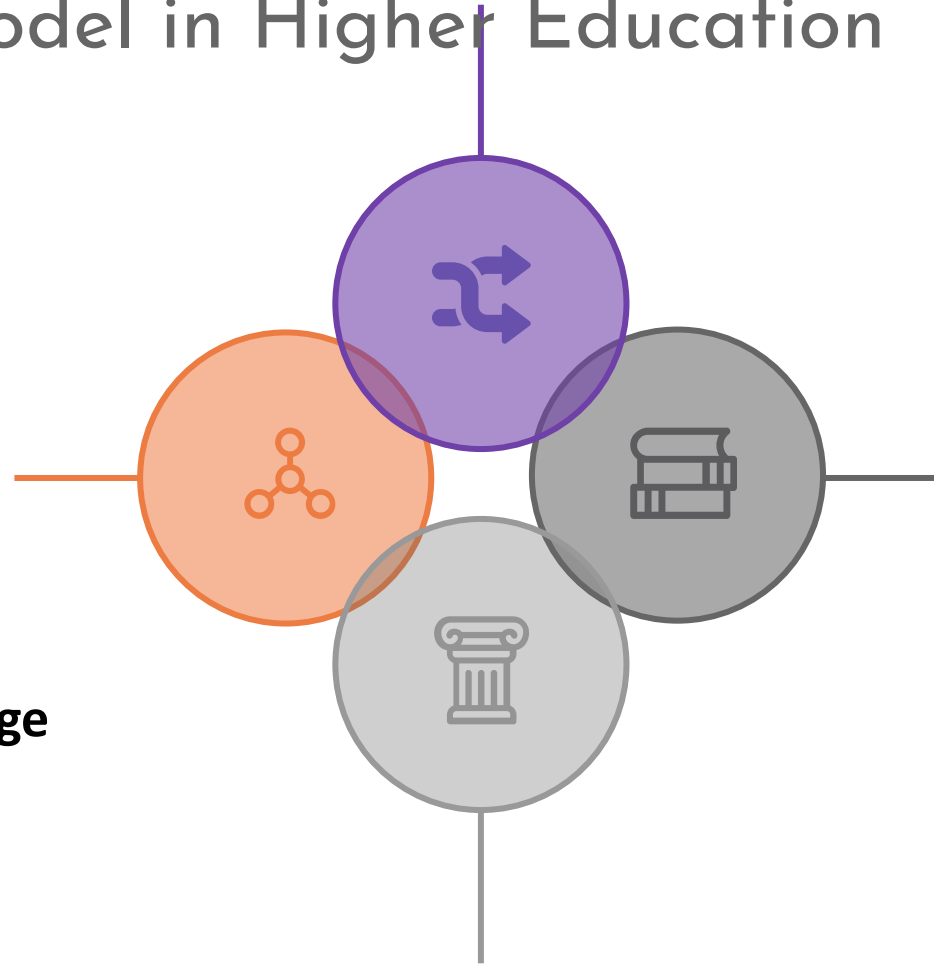# Erasmus+ KA2 project **CitizenHeritage**
"Citizen Science Practices in Cultural Heritage: towards a Sustainable Model in Higher Education"

citizen Heritage

Citizen Science

Openness

Cultural heritage

Higher Education

https://www.citizenheritage.eu/
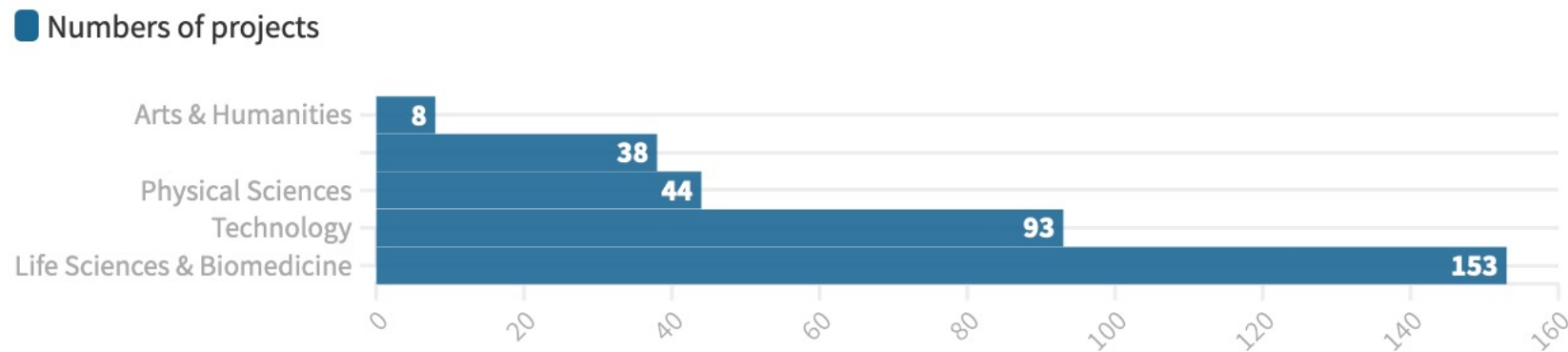
Extremely low number of citizen science projects belonging to the Social Sciences and Humanities (SSH)

Number of Projects in each research category

■ Numbers of projects

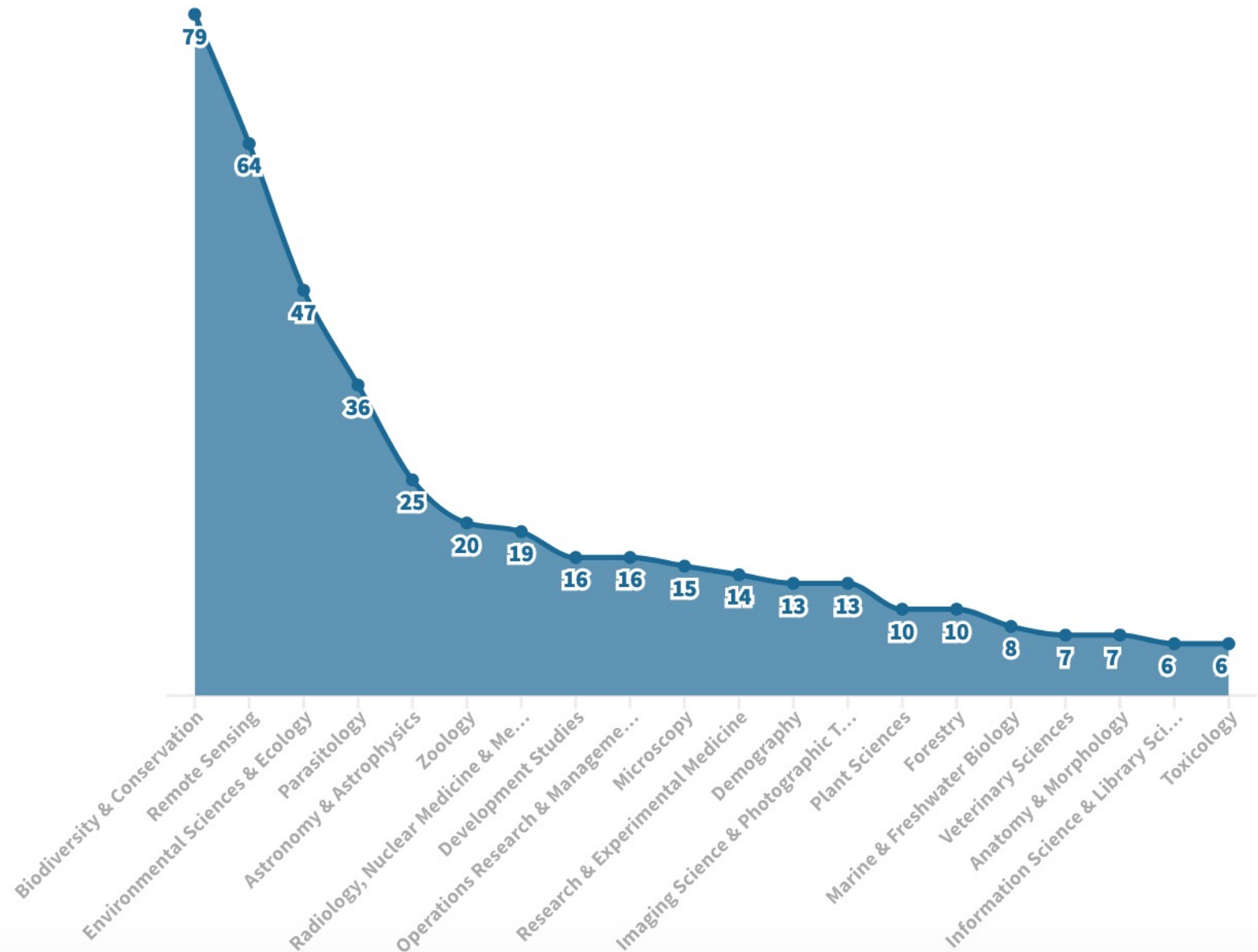| Category	
Arts & Humanities	8
Physical Sciences	38
Technology	44
Life Sciences & Biomedicine	93
	153

What are the predominant research areas in citizen science projects?"
Source: https://cstrack.eu/graphical-article/predominant-research-areas-citizen-science-projects/
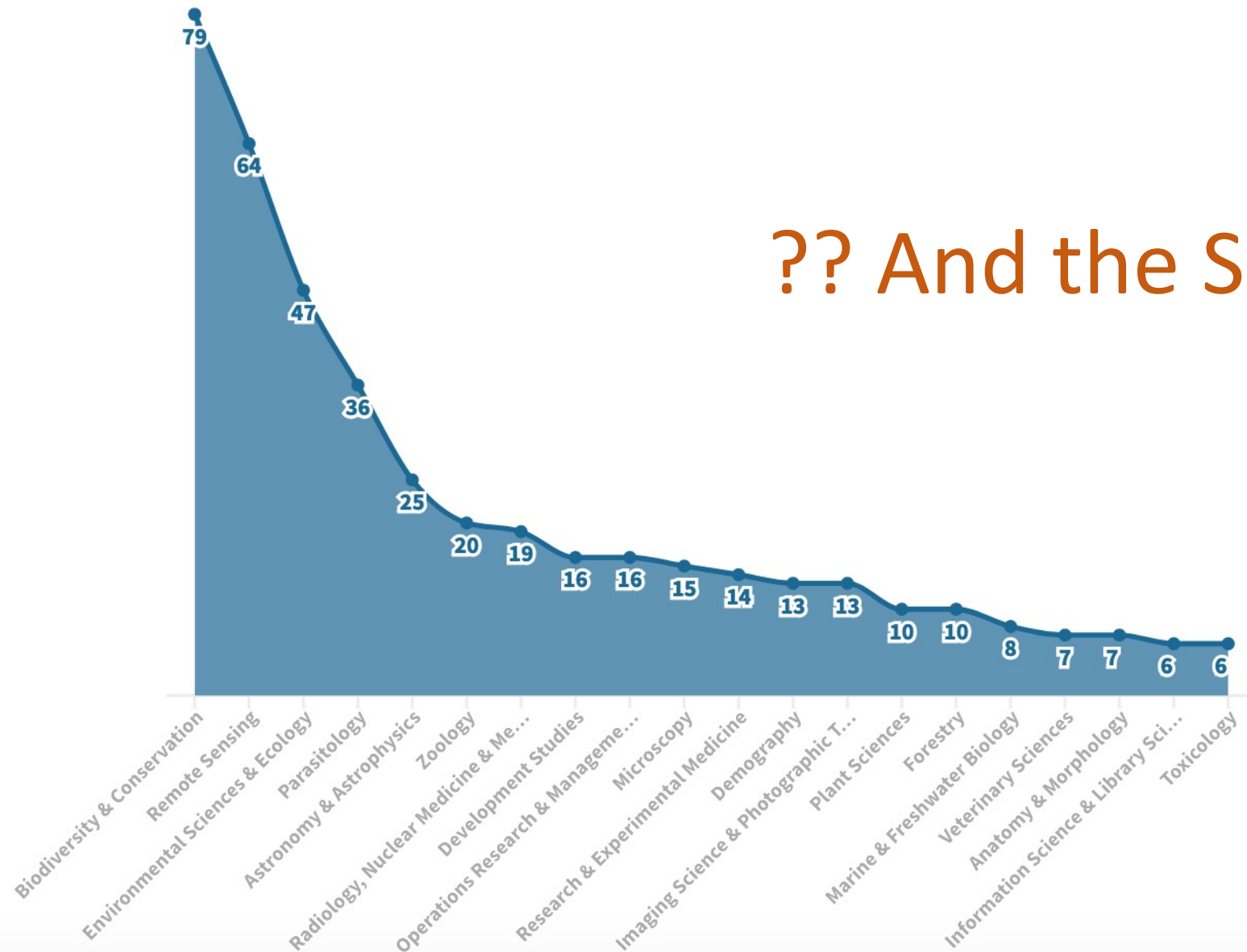
Pioneering paper:
Tauginienė, L., Butkevičienė, E., Vohland, K., Heinisch, B., Daskolia, M., Suškevičs, M., Portela, M., Balasz, B., Prūse, B. (2020). Citizen science in the social sciences and humanities: the power of interdisciplinarity. *Palgrave Communications*, *6*(1), 1-11.

Number of projects in each research area (Top 20)

79 — Biodiversity & Conservation
64 — Remote Sensing
47 — Environmental Sciences & Ecology
36 — Parasitology
25 — Astronomy & Astrophysics
20 — Zoology
19 — Radiology, Nuclear Medicine & Me…
16 — Development Studies
16 — Operations Research & Manageme…
15 — Microscopy
14 — Research & Experimental Medicine
13 — Demography
13 — Imaging Science & Photographic T…
10 — Plant Sciences
10 — Forestry
8 — Marine & Freshwater Biology
7 — Veterinary Sciences
7 — Anatomy & Morphology
6 — Information Science & Library Sci…
6 — Toxicology

"What are the predominant research areas in citizen science projects?" from https://cstrack.eu/

Number of projects in each research area (Top 20)

?? And the SSH?

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"What are the predominant research areas in citizen science projects?" from https://cstrack.eu/

Contributory citizen science
- (Majority of early online citizen science projects)

Scientist as project designer + Participatory technology or strategy ▶ Citizens as data gatherers

Contributory and co-creative approaches in science: citizen social science, action research (AR), science shops, and civil society organisations (CSOs) Credit: Senabre Hidalgo E., Perelló J., Becker F., Bonhoure I., Legris M., Cigarini A. (2021)

Contributory citizen science
(Majority of early online citizen science projects)

Co-creation & participatory approaches
(Citizen social sciences, AR, science shops)

Scientist as
project designer

Participatory
technology
or strategy

Citizens as
data gatherers

VS.
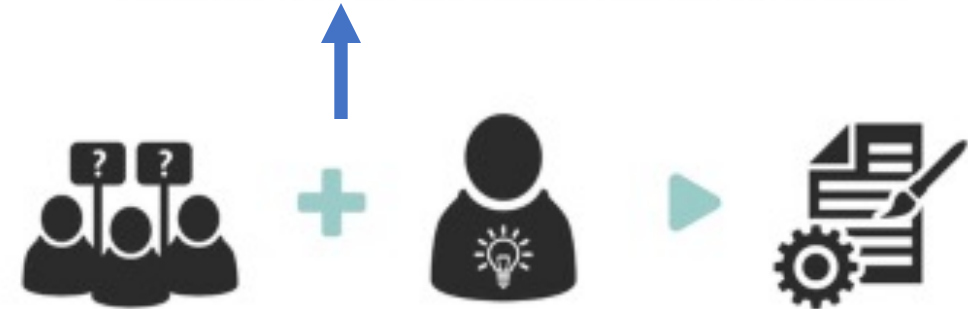
Citizens' & CSOs'
real-world
problems

Scientist as
co-designer and
facilitator

Shared, open, and
reflexive research
process

"Citizen enhanced open science"

Citizen science that matches and contributes to the open science ideal
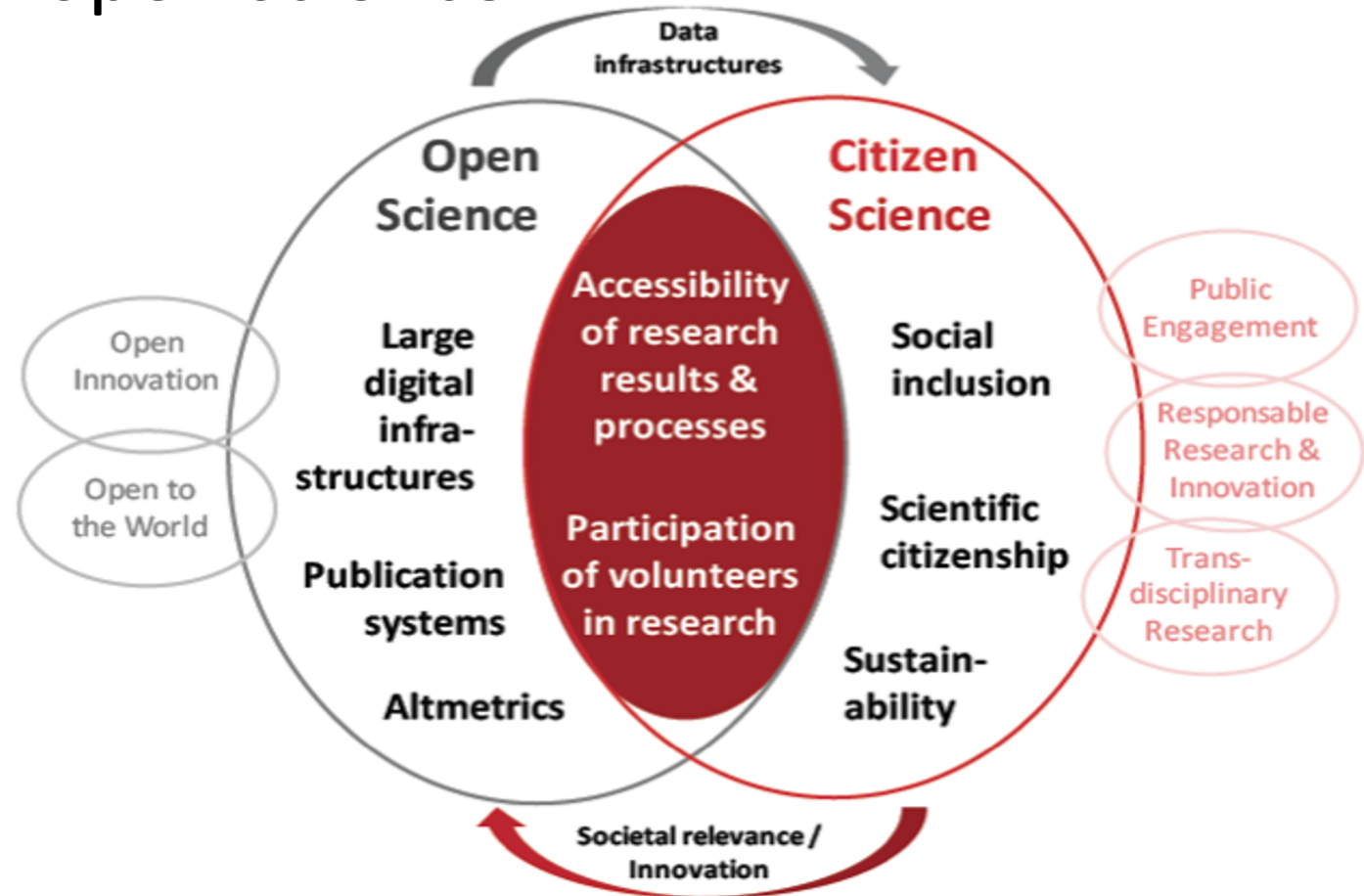
Vohland, K. & Göbel, C. 2017 . Open science and Citizen science Core Concepts and Areas of Synergy. Translated from German in DITOs consortium

Zourou, K. 2020.Citizen enhanced open science: some reflections. https://web2learn.eu/citizen-enhanced-open-science-some-reflections/

Hot off the press…

*"Enhancing the **inclusion of citizen and participatory science as integral parts of Open Science policies and practices** at the national, institutional and funder levels"*

United Nations
Educational, Scientific and
Cultural Organization

Organisation
des Nations Unies
pour l'éducation,
la science et la culture

Organización
de las Naciones Unidas
para la Educación,
la Ciencia y la Cultura

Организация
Объединенных Наций по
вопросам образования,
науки и культуры

منظمة الأمم المتحدة
للتربية والعلم والثقافة

联合国教育、
科学及文化组织

**INTERGOVERNMENTAL MEETING OF EXPERTS (CATEGORY II)
RELATED TO A DRAFT UNESCO RECOMMENDATION ON OPEN SCIENCE**

Online, 6-7 and 10-12 May 2021

**DRAFT TEXT OF THE UNESCO RECOMMENDATION
ON OPEN SCIENCE**

**PROVISIONALLY ADOPTED
(AS OF 11 MAY 2021)**

Some insights: Higher Education engagement in citizen enhanced open science in the area of cultural heritage

Questions:

- how citizen science projects in cultural heritage can contribute to the achievement of open science goals? What kind of evidence?

- Which dimensions of opennness relate to civic engagement in citizen science?

- How to move beyond citizens as mere data collectors in a more actively engaged process throughout stages of scholar research?

A 2020-2021 analysis of practices; Open access publication expected in December 2021

Methodology
Desktop research+ analysis + data visualisations
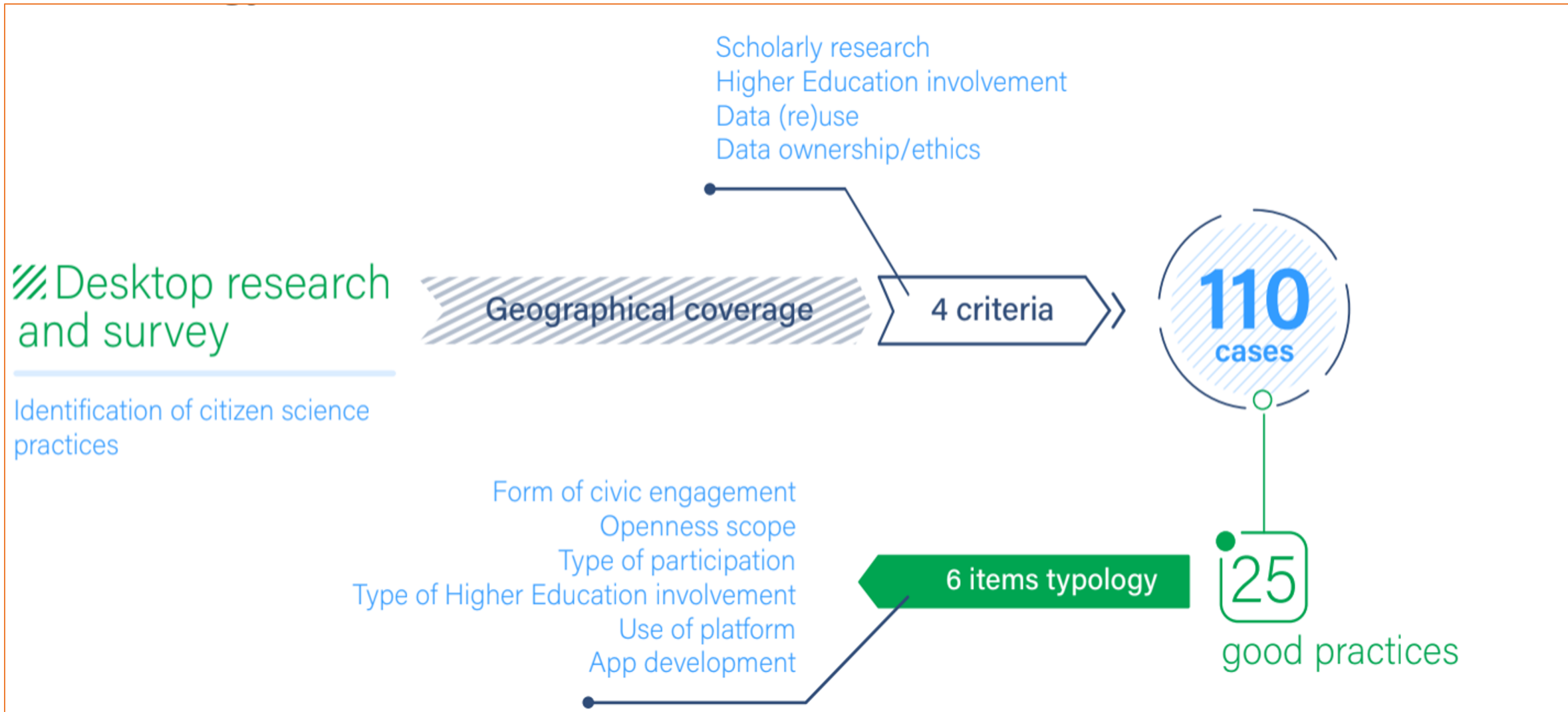
Approaching and analyzing dimensions of openness...

9 openness features against which the citizen science projects are analyzed

Open access

Open data

Open metadata

Open metrics

Open-source soft/hardware

Open access results

Open file formats

Open documentation

Open datasets

25 selected practices

citizen Heritage

• Transcribe Bentham	• WeAre#EuropeForCulture
• Video-tagging about the Roman Empire	• Finnish Archaeological Finds Recording Linked Open Database (SuALT)
• Dodiom	• Erfgoed gezocht
• Memória para Todos	• Accurator
• World Architecture Unlocked	• PAGODE
• SCAPE: Scotland's Coastal Heritage at Risk	• REACH
• Hanse, quellen, lesen!	• Ajapaik
• Living with Machines	• CrowdHeritage: Fashion Garment's Type
• Archeositar project	• PHACS: Participatory Urban Projects: historical imaginary in Esch-sur-Alzette
• Listening Experience Database	• Topotheque
• Art Pluriverse: A Community Science Series	• Transcribathon: Europeana 1914-1918
• ARTigo	• Fifties in Europe Kaleidoscope
• Meitheal Dúchas.ie: Community Transcription	
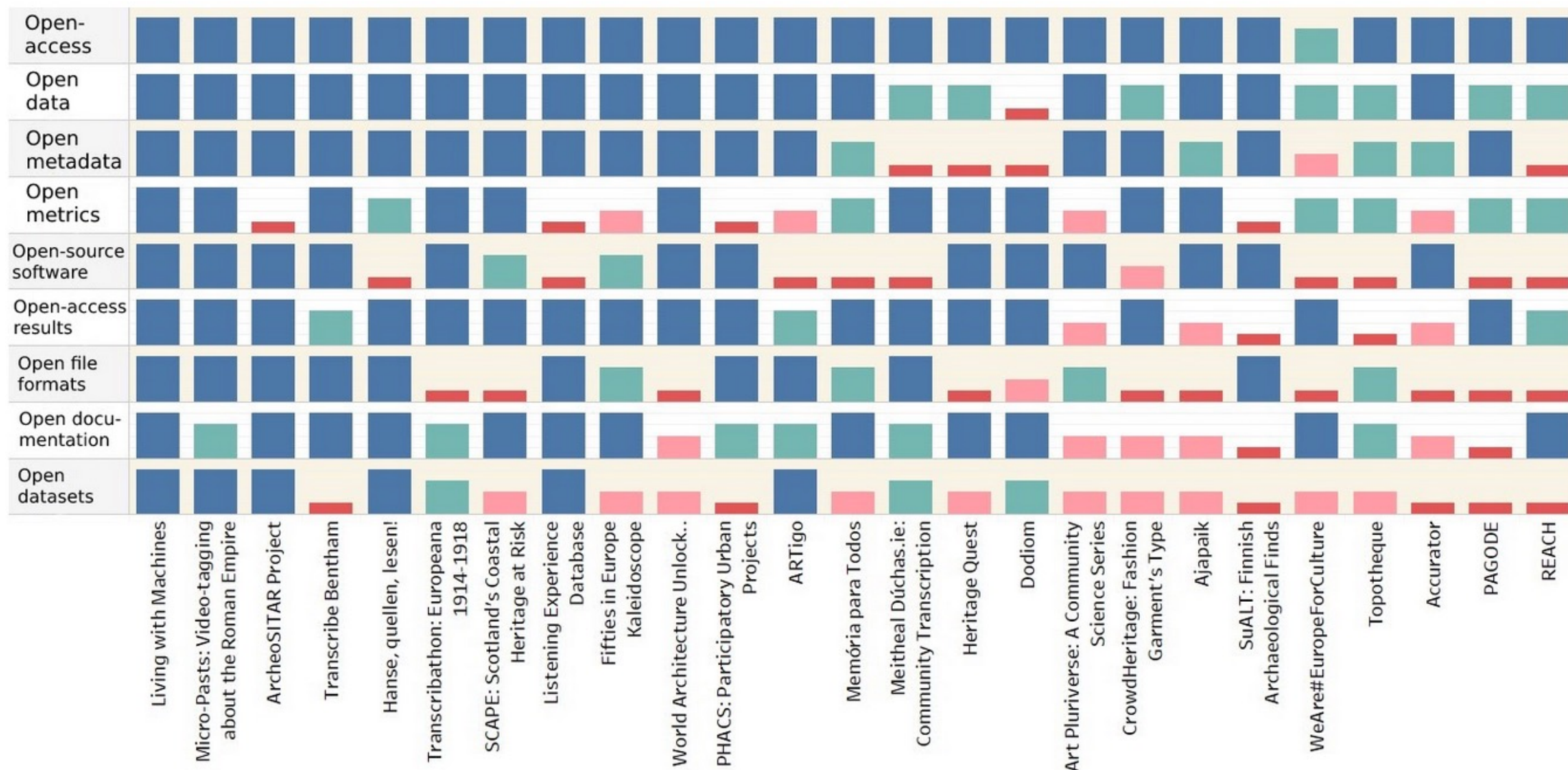
Graph 5.7.1: Assessment against the 9-factor openness scope taking four values ("not clear" and "weak" (red and pink), "partly" and "good" (green and blue). Credit: Mariana Ziku
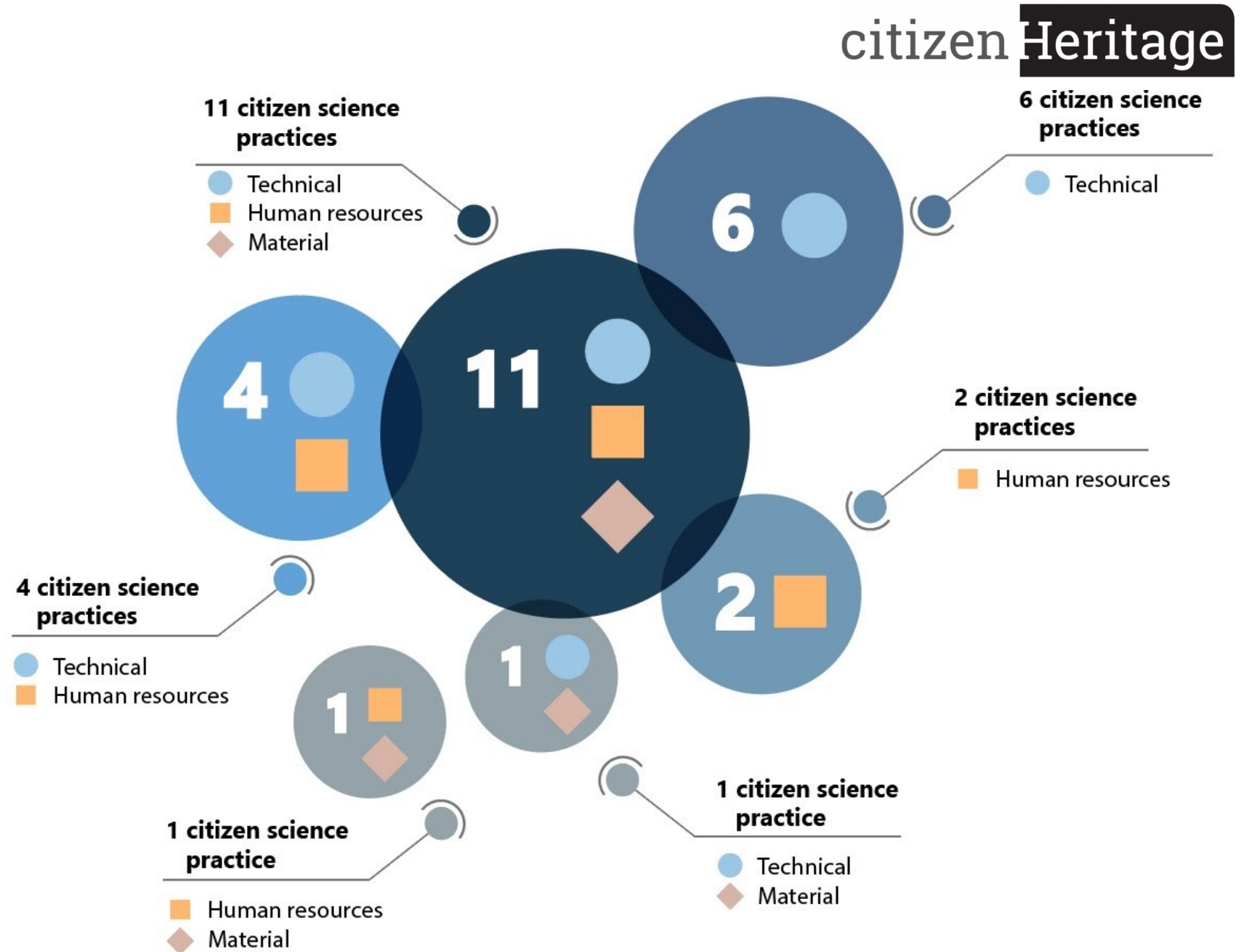
FAIR data
(Findable, Accessible Inter-operable, Reusable)

Assessment of the FAIR dimension taking two values ("yes" - dark blue bar or "not clear" - light blue bar)

A glimpse on investment needed from universities to run CitSci projects (focus on cultural heritage)

citizen Heritage

11 citizen science practices
- Technical
- Human resources
- Material

6 citizen science practices
- Technical

2 citizen science practices
- Human resources

4 citizen science practices
- Technical
- Human resources

1 citizen science practice
- Human resources
- Material

1 citizen science practice
- Technical
- Material

Katerina Zourou, NTNU talk June 4, 2021

Concluding remarks

Pitfalls

- Data ownership/ ethics: still work to do to:
  - Acnowledge citizens' contribution in a transparent way
  - Have clear data ownership policies publicly shared
- Considerable gap in terms of openness standards between "frontrunners" of citizen science projects in cultural heritage and other initiatives

Opportunities

- Several flagship initiatives covering all dimensions of openness in cultural heritage datasets enriched by citizens
- Very positive to see cultural heritage specific projects to expand the pool of citizen science projects (majority: life sciences)
- Extremely positive to see change in citizen science practices adopted by hosts and organisers to adopt

Acknowledgements

Mariana Ziku, MA, for data visualizations

All CitizenHeritage partners for data collection

All results of the study to be released open access in December 2021.

Citation: Zourou, K., Ziku, 2021 (in press). Review of practices of Higher Education engagement in citizen enhanced open science in the area of cultural heritage. CitizenHeritage consortium.

 Check https://www.citizenheritage.eu/

References

Senabre Hidalgo E., Perelló J., Becker F., Bonhoure I., Legris M., Cigarini A. (2021) Participation and Co-creation in Citizen Science. In: Vohland K. et al. (eds) The Science of Citizen Science. Springer, Cham. https://doi.org/10.1007/978-3-030-58278-4_11

*Vohland & Göbel, 2017. Open science and Citizen science. Core Concepts and Areas of Synergy. Translated from German, DITOs consortium.

Relevant recent projects:

INOS- Integrating Open and Citizen Science into Active Learning Approaches in Higher Education https://inos-project.eu/

HEIDI- Digital action at HEIs as a catalyst for social change in the COVID-19 crisis https://web2learn.eu/project/heidi-digital-action-at-heis-as-a-catalyst-for-social-change-in-the-covid-19-crisis/

Thank you!
Questions?

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