

# OpenAIRE **MONITOR**

for Research Funding Organisations

<https://monitor.openaire.eu/>

Community Call, April 23, 2024

Harry Dimitropoulos, Text Mining Expert & Technical Manager



# AGENDA

- **A walk-through the EXPLORE Funders' Page**
- **OpenAIRE Graph & Data Quality**
- **Linking functionality**
- **New and updated MONITOR Indicators**
- **Q&A**

# Research Funding Organisations (RFOs)

# EXPLORE FUNDERS PAGE

OpenAIRE | EXPLORE
Search Deposit Link Data sources **Funders** Sign in

Funders

## Be an integral part of the open R&I ecosystem

Welcome to the Funders' page on OpenAIRE Explore. Discover key details about each funder, their commitment to open access, and the impactful research they enable. Our aim? To foster transparency, inspire collaboration.

JOIN US

**3M+**

GRANTS

**169**

FUNDERS

**4M+**

FUNDED RESEARCH OUTPUTS

Show All funders
Sort by Alphabetically As...
Results per page 10

85% Open Access

AKA  
**Academy of Finland**

[MONITOR DASHBOARD](#)

PROJECTS (28,416) →

RESEARCH PRODUCTS (38,164) →

95% Open Access

**Aligning Science Across Parkinson's**

PROJECTS (35) →

RESEARCH PRODUCTS (64) →

69% Open Access

**Australian Research Council (ARC)**

PROJECTS (20,472) →

RESEARCH PRODUCTS (97,457) →

93% Open Access

**Austrian Science Fund (FWF)**

[MONITOR DASHBOARD](#)

PROJECTS (17,731) →

RESEARCH PRODUCTS (34,221) →

80% Open Access

**Canadian Institutes of Health Research**

RESEARCH PRODUCTS (98,932) →

87% Open Access

**CHIST-ERA**

[MONITOR DASHBOARD](#)

PROJECTS (108) →

RESEARCH PRODUCTS (1,204) →

68% Open Access

**Croatian Science Foundation (CSF)**

[MONITOR DASHBOARD](#)

PROJECTS (1,832) →

RESEARCH PRODUCTS (9,898) →

84% Open Access

**European Commission**

[MONITOR DASHBOARD](#)

PROJECTS (70,206) →

RESEARCH PRODUCTS (1,717,230) →

100% Open Access

**European Environment Agency**

PROJECTS (7) →

RESEARCH PRODUCTS (23) →

## FUNDERS IN OPENAIRE

- Directly joining OpenAIRE is the recommended avenue for representation in the OpenAIRE Graph
- Benefits
  - Ensures a comprehensive presence, with project level granularity
  - Guarantees the precision of the data incorporated
- Process
  - RFO provides Funding Data (list of research projects with metadata)
  - A tailored text mining algorithm is created for data extraction
  - Meticulous curation of project-publication links to ensure accuracy
  - <https://www.openaire.eu/funders-how-to-join-guide>

## FUNDERS IN OPENAIRE

- Alternative avenue for representation via Open Funder Registry (OFR)
  - <https://www.crossref.org/services/funder-registry/>
  - If the funder has not registered their projects with OFR
    - Publications can be associated via valid DOIs in the Graph
    - Text mining module cannot be built without a list of projects
    - “unidentified project” mining is an option but creates links at the funder (not the project) level
  - Does not offer the granularity of the direct integration
  - Quality is not guaranteed, there is no curation
  - Less information is provided in the Explore Funders Page



## Grant

# FUNDERS: HOW TO JOIN

### Mandatory

- Project identifier
- Project title or acronym
- Funder name
- Start date
- End date

### Optional

- Funding stream(s) – funding categories for more detailed statistics
- Organization(s) involved
- Recommended acknowledgement statements
- Start year/date Open Access mandates for datasets and publications
- Project's description
- Budget of the projects\*
- Budget per participant\*

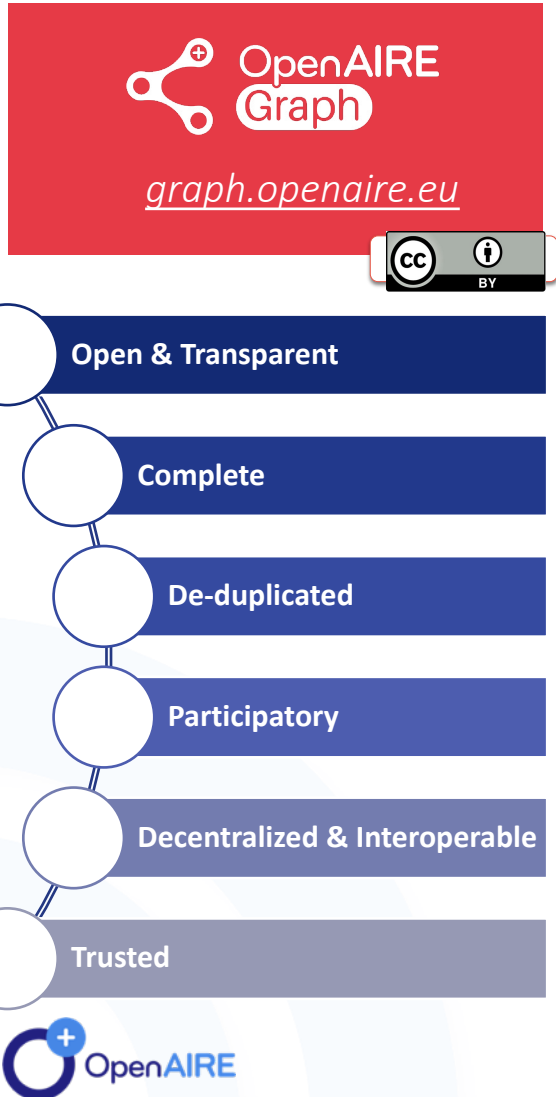
- a limited metadata set is required from funders in simple file formats (e.g.: .csv, .xlsx, .tsv, etc.)
- formalised via an Agreement for Data Exchange
- no personal or private details are required.

*\* Budget information support the realisation of monitoring services for the institutions.*

 **OpenAIRE  
Graph** & Data Quality



# DATA BACKBONE: THE OPENAIRE GRAPH



- **Scientific Knowledge Graph**

- *A collection of metadata describing objects in the research lifecycle and relationships among them*
- Timely and comprehensive coverage of research outputs
- 131K data sources, 3.5M projects, and 257.5M research outputs (publications, software, datasets, other research products)
- Near monthly updates

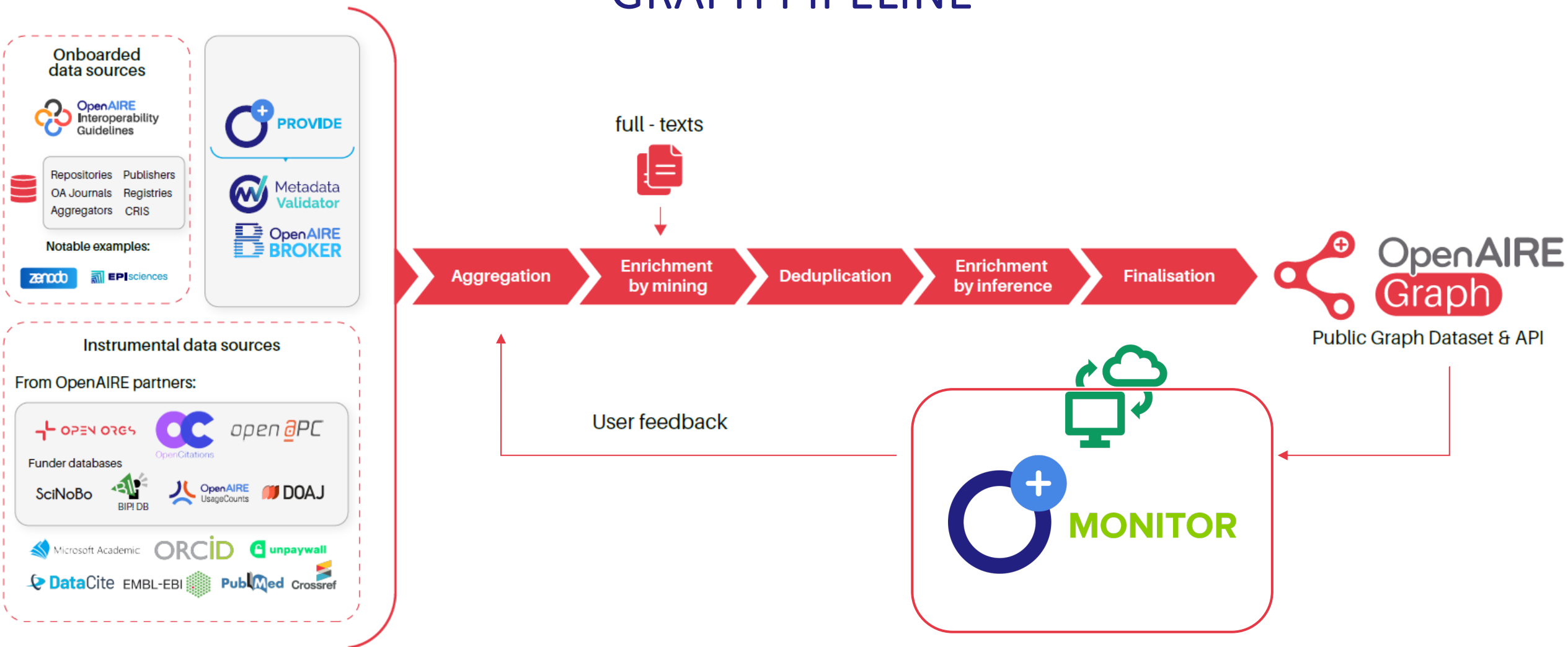
- **Precision, depth & processing**

- Rigorous cleaning, deduplication, and enrichment for optimal accuracy
- Enriched metadata links: Research results to projects, author affiliations, and classifications (FoS, SDG)
- Techniques for duplicate identification in addition to OpenAIRE's curation tools

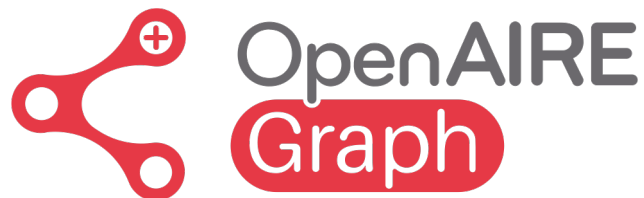
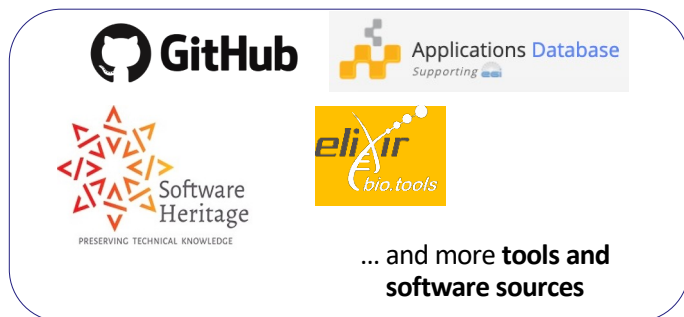
- **Robustness & openness**

- Maintenance, load balancing, backups, overseen by the OpenAIRE technology centre
- Open data & transparent methodologies

# GRAPH PIPELINE



# COVERAGE: SOURCES CONTRIBUTING TO THE GRAPH



## DATA QUALITY

- **Deduplication:** OpenAIRE Graph merges duplicate records of the same scholarly work.
- **Enrichment through TDM:** affiliation, citation, and concept extraction with document classification (FoS, SDG) and similarity assessment
- **Cleaning:** Independent, continuous aggregation processes utilize vocabularies to harmonize diverse data source records, ensuring consistent and accurate bibliographic records.
- **Disambiguation:** Additional disambiguation of Journals, Publishers and Licenses
- More @ <https://graph.openaire.eu/docs/graph-production-workflow/>

# LINKING

## LINKING FUNCTIONALITY

- **Log in** (EDUGAIN, ORCID, Google, GitHub, LinkedIn, OpenAIRE) to access the **LINKING** functionality
  - Enables users to associate **research outputs** with **projects, communities, or other outputs**, enhancing data representation in OpenAIRE Graph and the Monitor
  - Links show up in next OpenAIRE Graph update

# LINKING FUNCTIONALITY

FIND SOURCES   LINK SOURCES TO ENTITIES   SUMMARIZE AND FINISH



Search bar: pispiringas

Filters: Openaire (29) | Crossref (2) | Datacite (29) | Orcid (17)

Filter buttons: YEAR RANGE, TYPE, FUNDER, ACCESS, DOCUMENT TYPE

- Introduction to the ORCID Greek Consortium**  
Publication • ORCID • 2019  
Pispiringas, Leonidas
- OAWeek: OpenAIRE MONITOR: Institutional Dashbo**  
Publication • Zenodo • 2022  
Grypari, Ioanna; Pispiringas, Leonidas
- OAWeek: OpenAIRE MONITOR: Institutional Dashbo**  
Publication • Zenodo  
Grypari, Ioanna; Pispiringas, Leonidas
- Research data: accessible infrastructures and innova**  
Publication • Zenodo • 2020  
Pispiringas, Leonidas; Chatzigeorgakidis, Georgios; Terrovitis, Manolis

Sources to link (1)   Link to (1)

Upload a DOI's CSV file   Remove all

OWeek: OpenAIRE MONITOR: Institutional Dashboard  
Grypari, Ioanna; Pispiringas, Leonidas

FIND SOURCES   LINK SOURCES TO ENTITIES   SUMMARIZE AND FINISH



SOURCES (1)	LINK TO (1)
<p><b>OWeek: OpenAIRE MONITOR: Institutional Dashboard</b> Publication • Zenodo Grypari, Ioanna; Pispiringas, Leonidas</p>	<p><b>OpenAIRE Nexus</b> Project • 2021-2023 Funder: EC   Project Code: 101017452</p>

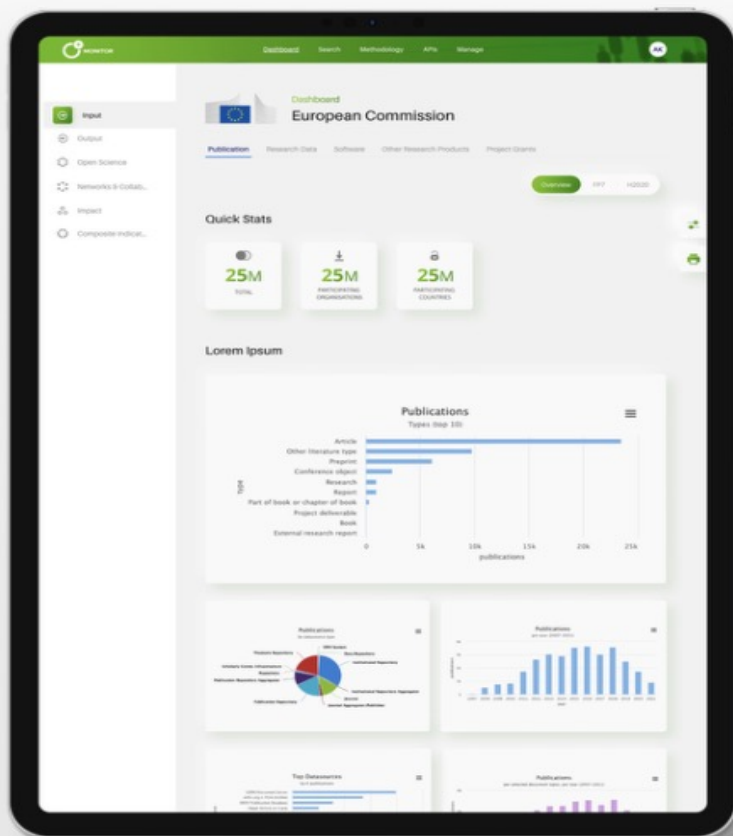
CONFIRM LINKING →

# MONITOR INDICATORS



Funders. Research Institutions. Research Initiatives.

# Simplify research monitoring & evaluation.



## Monitor, discover and understand.

Track your organization's research output in a comprehensive manner. Identify research pathways across key dimensions with granular and timely indicators.

## Enhance open science uptake.

Work with the Open Science expert community for open and transparent metrics. Discover Open Science costs and trends for your organization. See how you fare in the European Open Science Cloud.

## Turn data into actionable insights.

See what works and what not, reveal hidden potential. Measure research impact, discover trends, connections and collaborations to improve and optimize your future actions.



# Why MONITOR?



## Know Thyself

### Open Science Uptake

Resources

Research Output

Collaborations

Visibility

Impact



## Understand Thyself

Pathways

Opportunities

Insights



## Position Thyself

Decision making

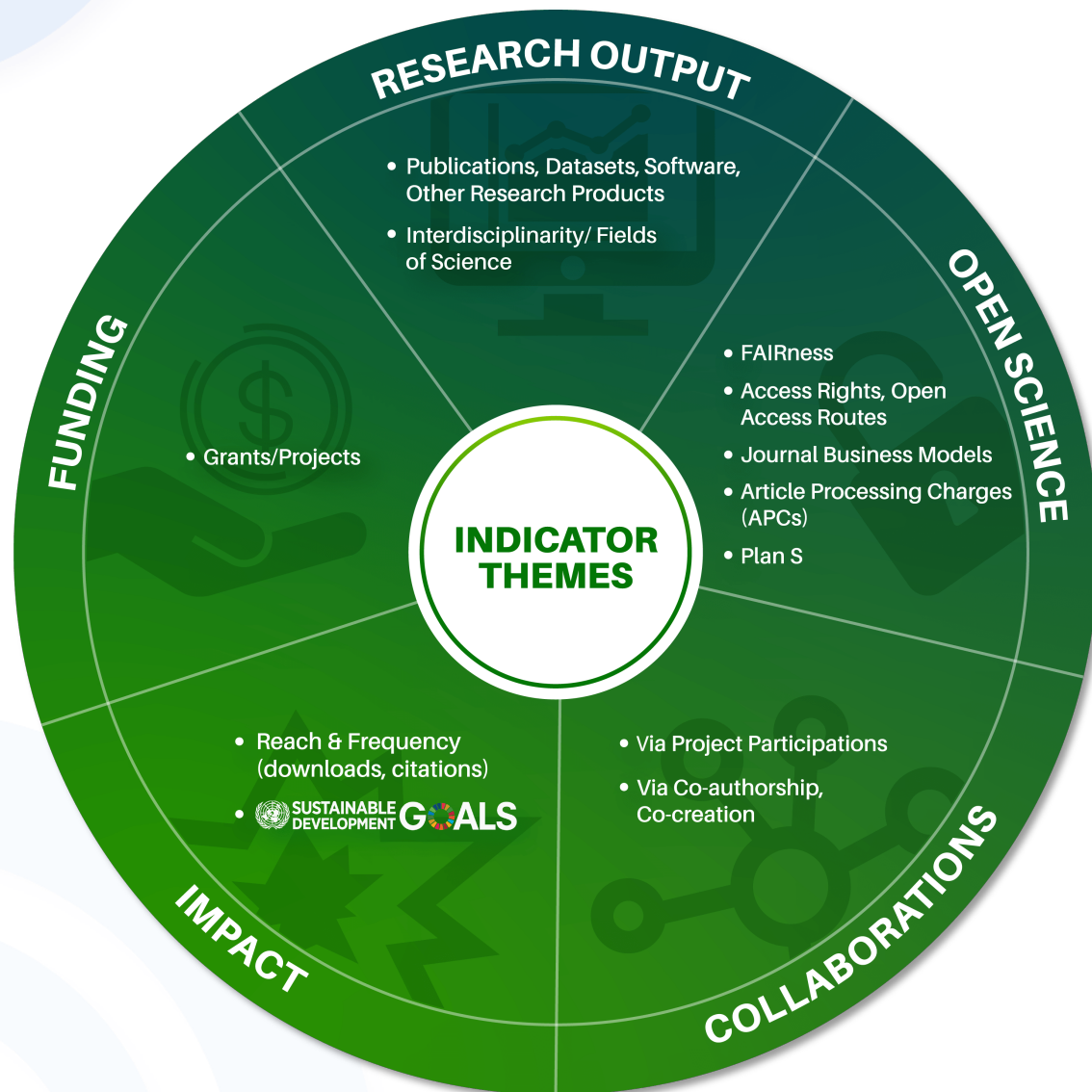
*Reporting*

*Story telling*

# Why OpenAIRE | MONITOR ?

- **All about open science and open data**  
Inclusiveness, transparency and replicability
- **Full coverage of Open Science**
  - Beyond publications: Research Data, Software, Other Research Products
  - Linked science
- **Relevance for the community**
  - Co-develop indicators that make sense to all
- **Fully embedded in EOSC infrastructure**
  - Starting from content providers to the included metrics

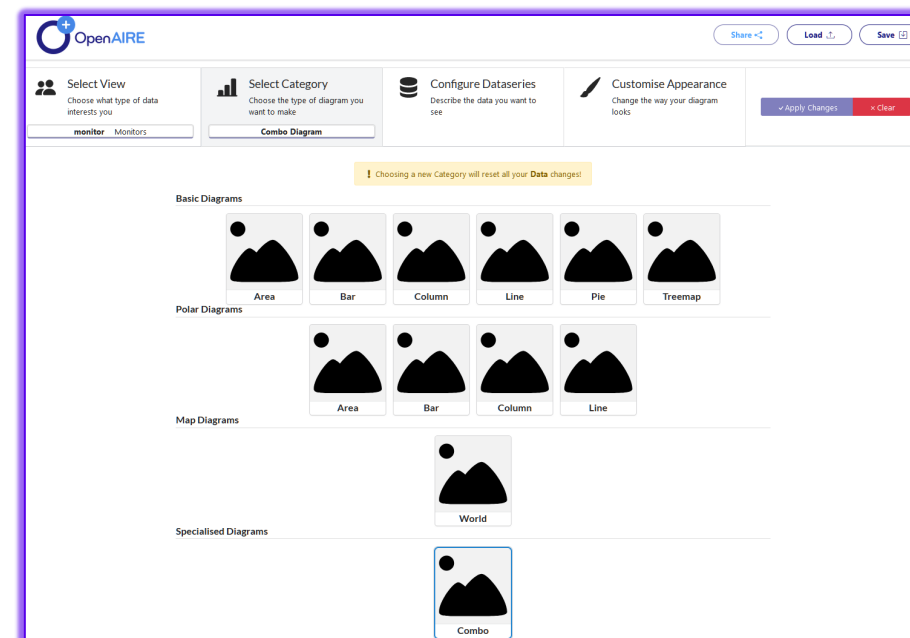
# INDICATORS



# VISUALISATIONS

via our **STATS TOOL**

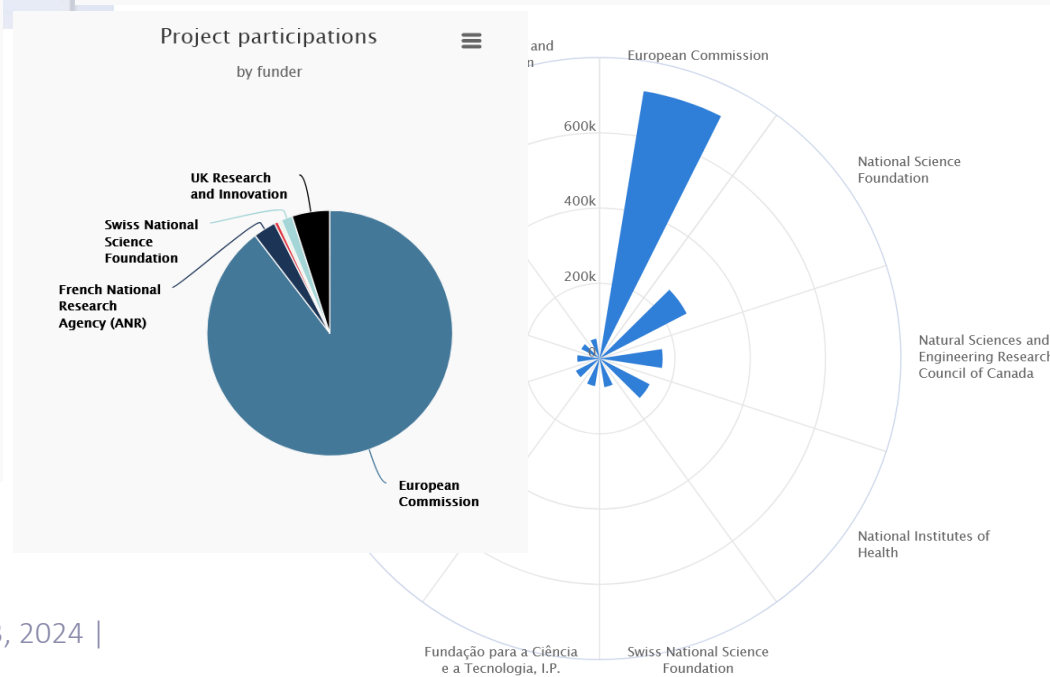
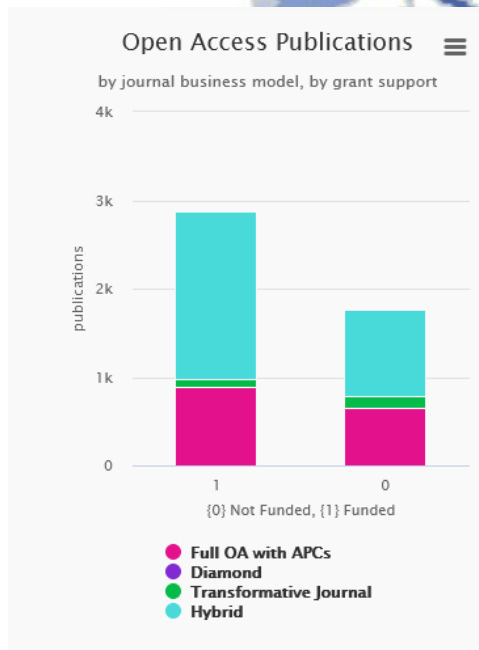
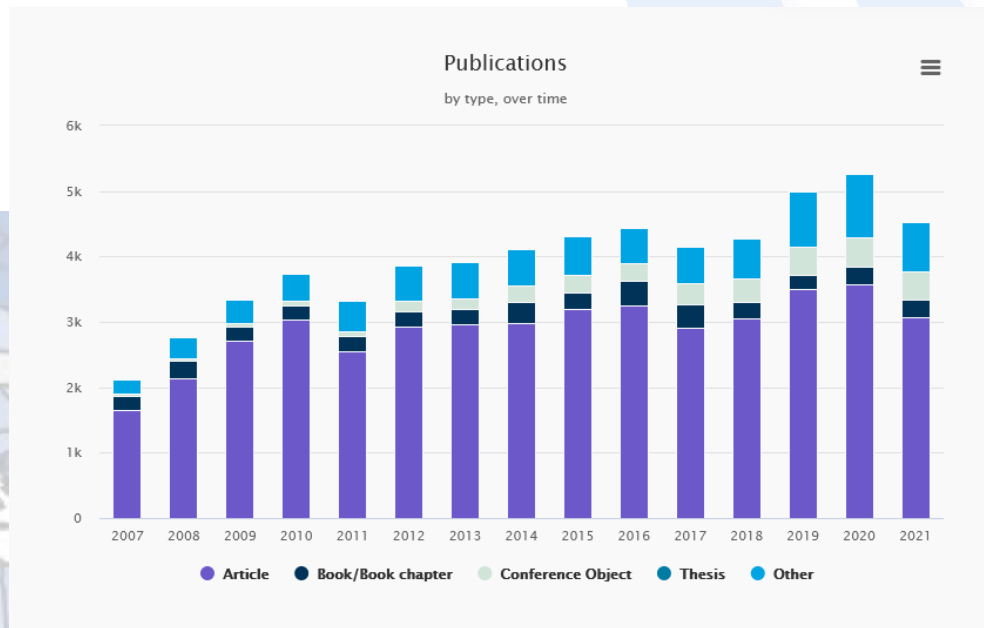
- Creation and customization of visualizations without coding
- Data & visualization exporting and embedding



# INDICATORS BREAKDOWN

## By fields of interest

- research product type
- domains (FoS)
- time
- countries
- data sources
- funders
- ...



# FEATURED FUNCTIONALITIES

- **User-friendly** dashboards
  - interactive visualisations
  - exporting capabilities (download data & visualizations in different formats)
  - filtering
  - browsing the data behind the indicators
  - (partial) editing of visualizations & dashboards
  - documentation (methodology & terminology, indicator themes & lists of indicators, how to?, FAQ)
- **Customized** in one-on-one co-design sessions
- **Control** how you share
  - **public** indicators for external stakeholders – *Showcasing*
  - **restricted** indicators for team-members – *Internal Monitoring*
  - **private** indicators for “work in progress” – *Reviewing*

## NEW INDICATORS OS Composites

- Open Science composite indicators for funders

Openness Score

**51,266%**



Findability Score

**67,717%**



FAIRness Score

**87,068%**



Average share of open access  
research output



Average share of research output  
with a PID



Average share of research output  
with metadata completeness



# NEW INDICATORS UN SDGs

- We have developed a classification scheme for UN Sustainable Development Goals, to view contributions of research towards complex challenges for humanity such as climate change, biodiversity loss, pollution and poverty reduction.

## SUSTAINABLE DEVELOPMENT GOALS

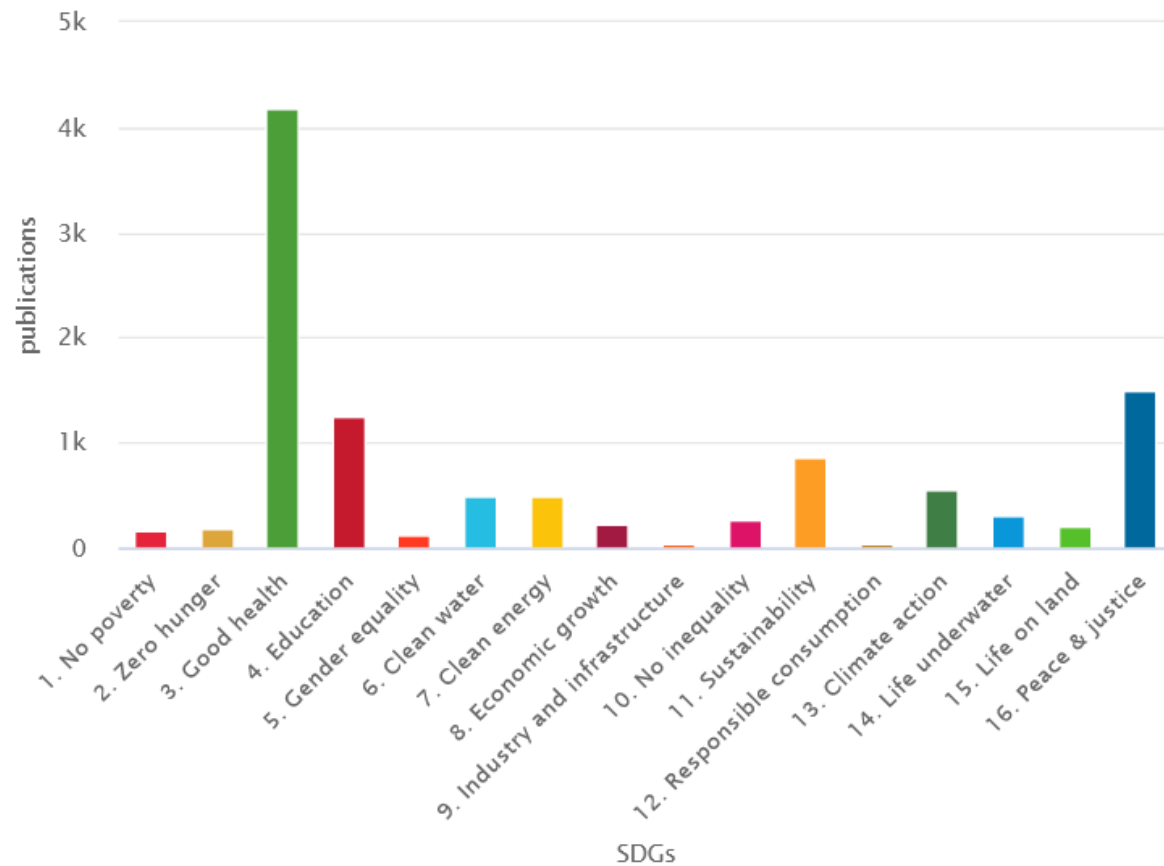


<https://explore.openaire.eu/sdgs>

# NEW INDICATORS UN SDGs

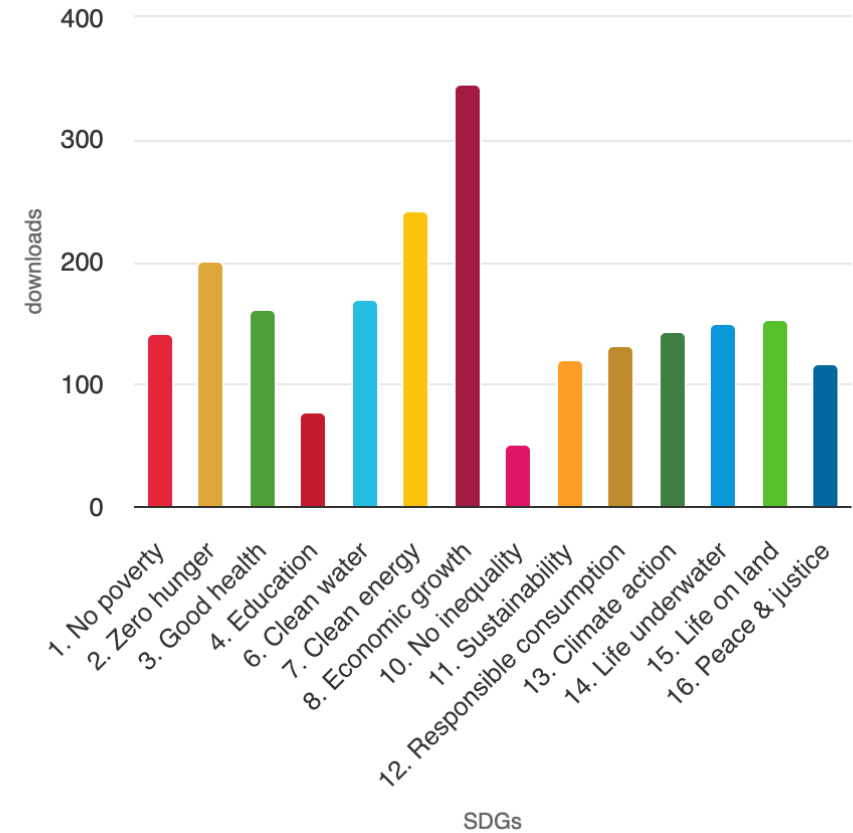
## Publications

by SDGs



## Average Downloads per Publication


by SDGs






# ADDITIONAL DIMENSION OF ANALYSIS

- Fields of Science (FoS) Classification**

 Write a key word to filter the content

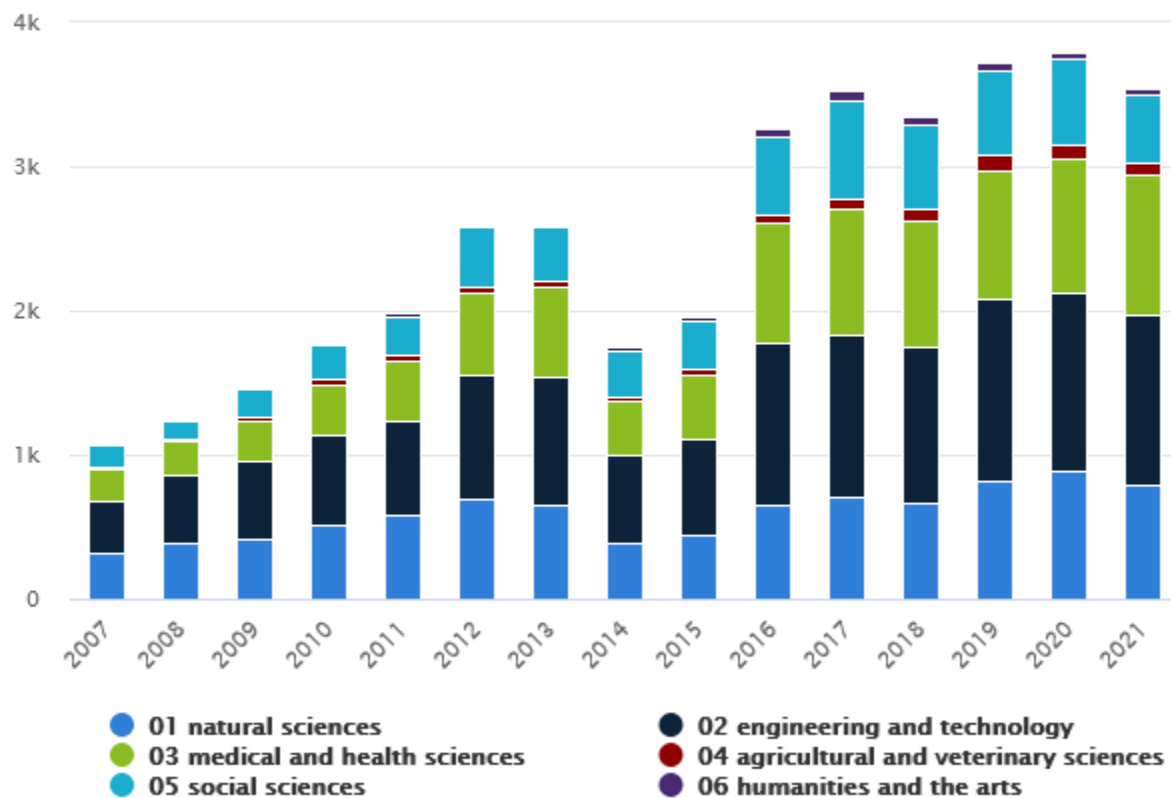
<p><b>01 Natural Sciences</b></p> <p>02 Engineering And Technology</p> <p>03 Medical And Health Sciences</p> <p>04 Agricultural And Veterinary Sciences</p> <p>05 Social Sciences</p> <p>06 Humanities And The Arts</p>	<h2 style="margin: 0;">01 natural sciences</h2> <table border="0" style="width: 100%; margin-top: 10px;"> <tr> <td style="vertical-align: top; width: 33%;"> <p><b>0101 mathematics</b></p> <p>010101 Applied Mathematics</p> <p>010102 General Mathematics</p> <p>010103 Numerical &amp; Computational Mathematics</p> <p>010104 Statistics &amp; Probability</p> </td> <td style="vertical-align: top; width: 33%;"> <p><b>0102 computer and information sciences</b></p> <p>010201 Computation Theory &amp; Mathematics</p> </td> <td style="vertical-align: top; width: 33%;"> <p><b>0103 physical sciences</b></p> <p>010301 Acoustics</p> <p>010302 Applied Physics</p> <p>010303 Astronomy &amp; Astrophysics</p> <p>010304 Chemical Physics</p> <p>010305 Fluids &amp; Plasmas</p> <p>010306 General Physics</p> <p>010307 Mathematical Physics</p> <p>010308 Nuclear &amp; Particles Physics</p> <p>010309 Optics</p> </td> </tr> <tr> <td style="vertical-align: top; width: 33%;"> <p><b>0104 chemical sciences</b></p> <p>010401 Analytical Chemistry</p> <p>010402 General Chemistry</p> <p>010403 Inorganic &amp; Nuclear Chemistry</p> <p>010404 Medicinal &amp; Biomolecular</p> </td> <td style="vertical-align: top; width: 33%;"> <p><b>0105 earth and related environmental sciences</b></p> <p>010501 Environmental Sciences</p> <p>010502 Geochemistry &amp; Geophysics</p> <p>010503 Geology</p> </td> <td style="vertical-align: top; width: 33%;"> <p><b>0106 biological sciences</b></p> <p>010601 Ecology</p> <p>010602 Entomology</p> <p>010603 Evolution</p> <p>010604 Marine Biology</p> <p>Hydrobiology</p> </td> </tr> </table>	<p><b>0101 mathematics</b></p> <p>010101 Applied Mathematics</p> <p>010102 General Mathematics</p> <p>010103 Numerical &amp; Computational Mathematics</p> <p>010104 Statistics &amp; Probability</p>	<p><b>0102 computer and information sciences</b></p> <p>010201 Computation Theory &amp; Mathematics</p>	<p><b>0103 physical sciences</b></p> <p>010301 Acoustics</p> <p>010302 Applied Physics</p> <p>010303 Astronomy &amp; Astrophysics</p> <p>010304 Chemical Physics</p> <p>010305 Fluids &amp; Plasmas</p> <p>010306 General Physics</p> <p>010307 Mathematical Physics</p> <p>010308 Nuclear &amp; Particles Physics</p> <p>010309 Optics</p>	<p><b>0104 chemical sciences</b></p> <p>010401 Analytical Chemistry</p> <p>010402 General Chemistry</p> <p>010403 Inorganic &amp; Nuclear Chemistry</p> <p>010404 Medicinal &amp; Biomolecular</p>	<p><b>0105 earth and related environmental sciences</b></p> <p>010501 Environmental Sciences</p> <p>010502 Geochemistry &amp; Geophysics</p> <p>010503 Geology</p>	<p><b>0106 biological sciences</b></p> <p>010601 Ecology</p> <p>010602 Entomology</p> <p>010603 Evolution</p> <p>010604 Marine Biology</p> <p>Hydrobiology</p>
<p><b>0101 mathematics</b></p> <p>010101 Applied Mathematics</p> <p>010102 General Mathematics</p> <p>010103 Numerical &amp; Computational Mathematics</p> <p>010104 Statistics &amp; Probability</p>	<p><b>0102 computer and information sciences</b></p> <p>010201 Computation Theory &amp; Mathematics</p>	<p><b>0103 physical sciences</b></p> <p>010301 Acoustics</p> <p>010302 Applied Physics</p> <p>010303 Astronomy &amp; Astrophysics</p> <p>010304 Chemical Physics</p> <p>010305 Fluids &amp; Plasmas</p> <p>010306 General Physics</p> <p>010307 Mathematical Physics</p> <p>010308 Nuclear &amp; Particles Physics</p> <p>010309 Optics</p>					
<p><b>0104 chemical sciences</b></p> <p>010401 Analytical Chemistry</p> <p>010402 General Chemistry</p> <p>010403 Inorganic &amp; Nuclear Chemistry</p> <p>010404 Medicinal &amp; Biomolecular</p>	<p><b>0105 earth and related environmental sciences</b></p> <p>010501 Environmental Sciences</p> <p>010502 Geochemistry &amp; Geophysics</p> <p>010503 Geology</p>	<p><b>0106 biological sciences</b></p> <p>010601 Ecology</p> <p>010602 Entomology</p> <p>010603 Evolution</p> <p>010604 Marine Biology</p> <p>Hydrobiology</p>					

 HELP

# INDICATORS BREAKDOWN BY FoS

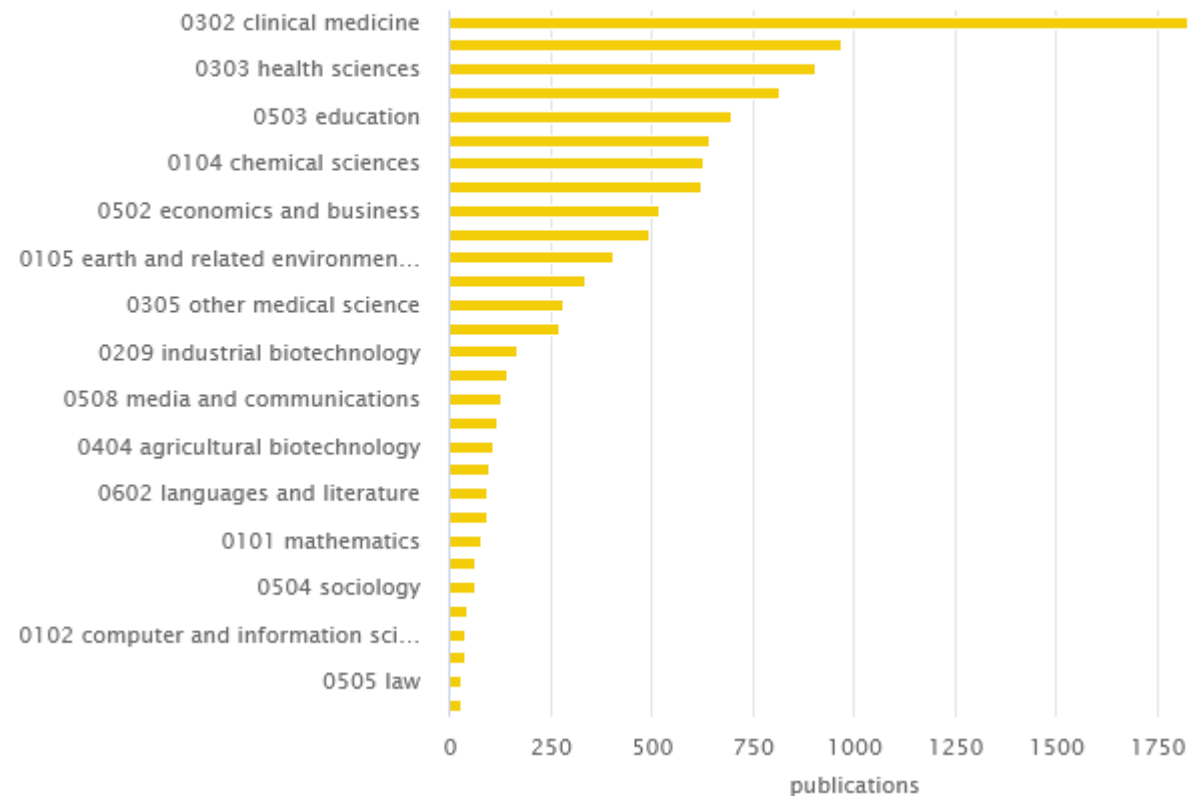
## Publications

by FoS (level 1), over time

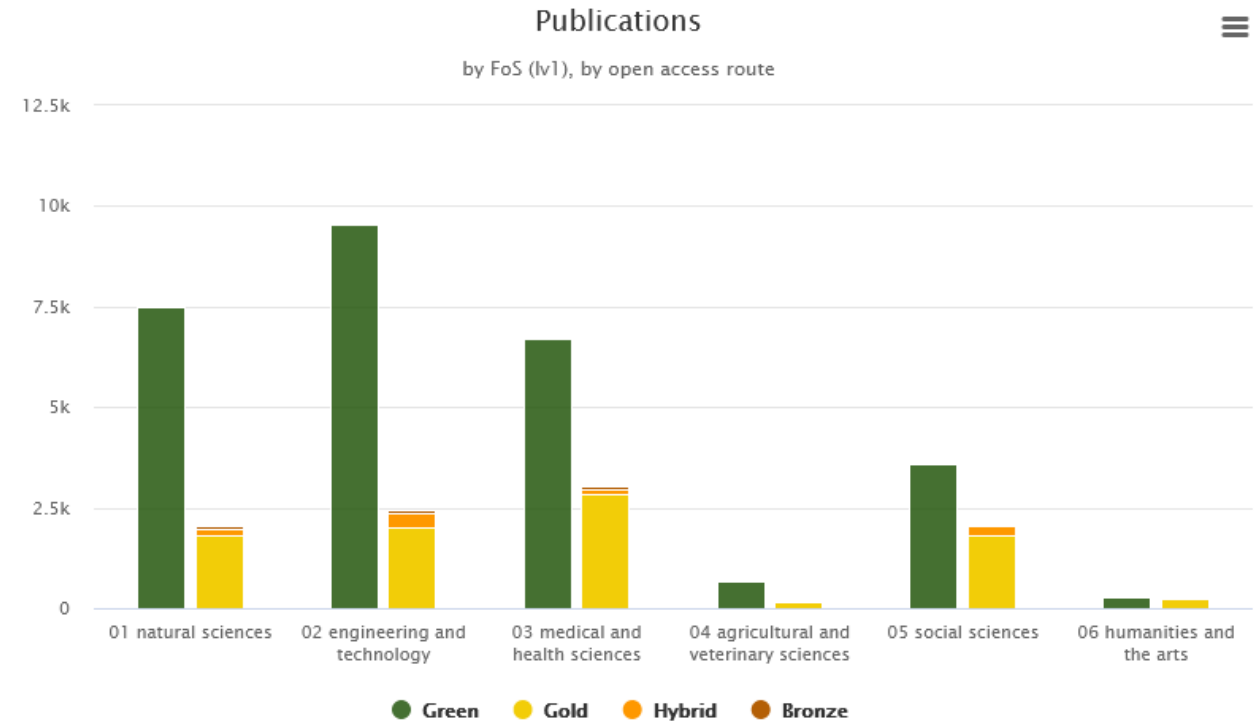
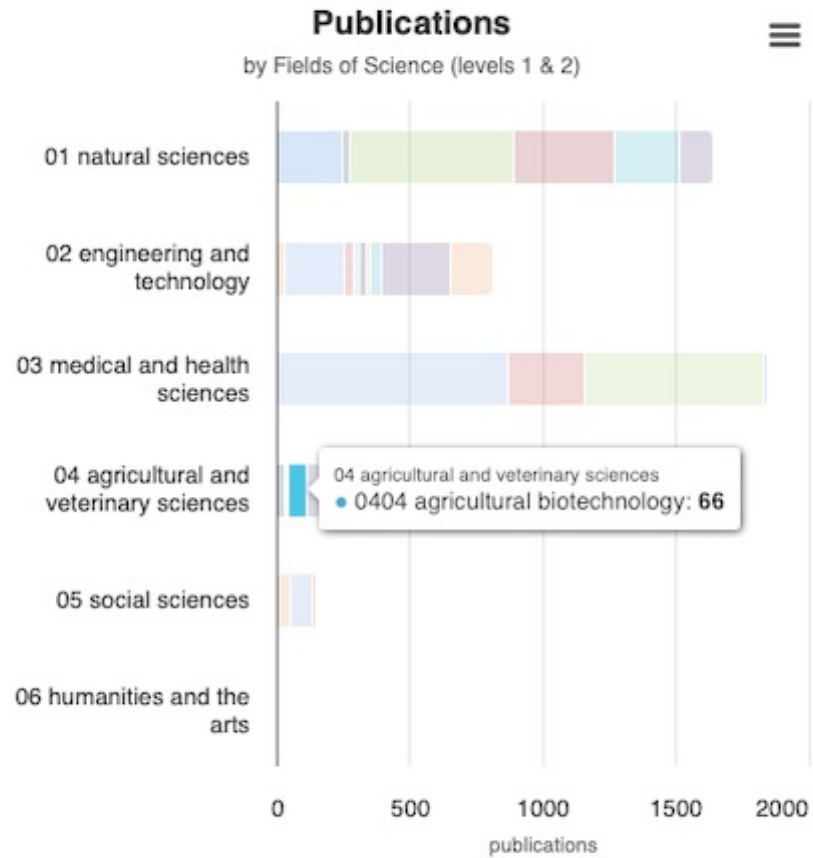


## Most open FoS (level 2)

by number of gold OA publications



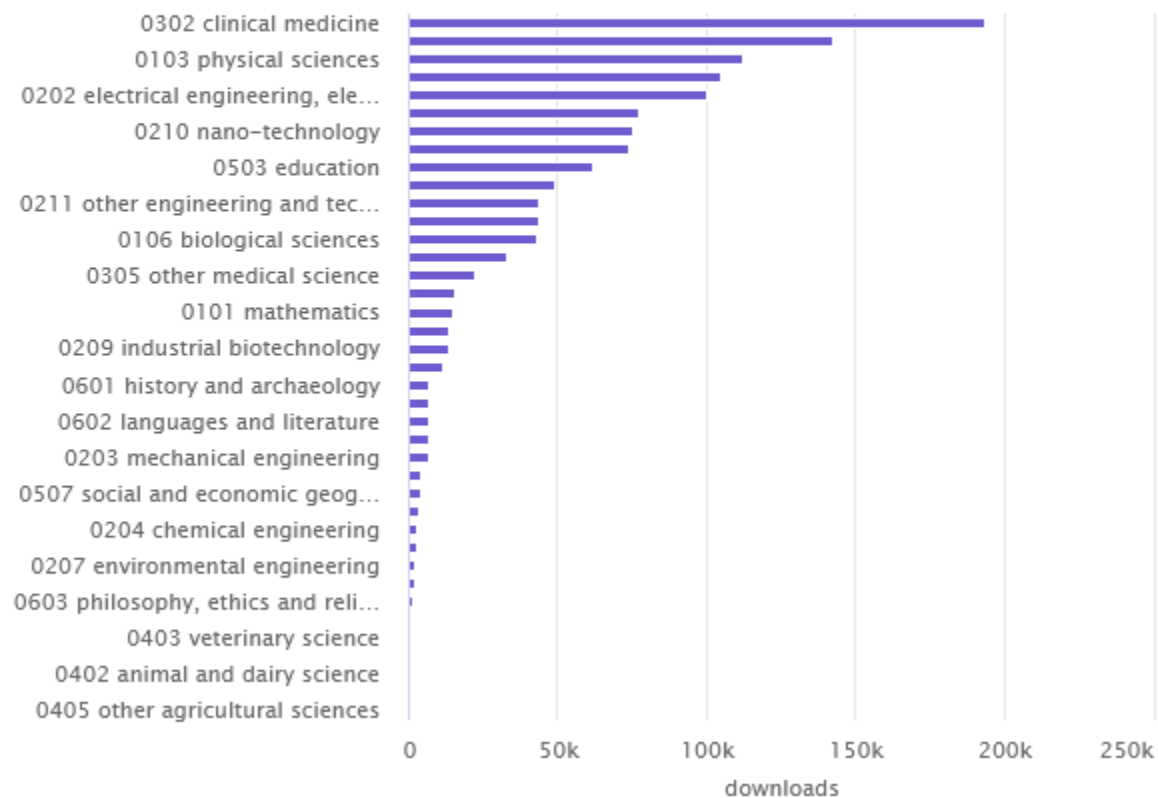
# INDICATORS BREAKDOWN BY FoS



# INDICATORS BREAKDOWN BY FoS

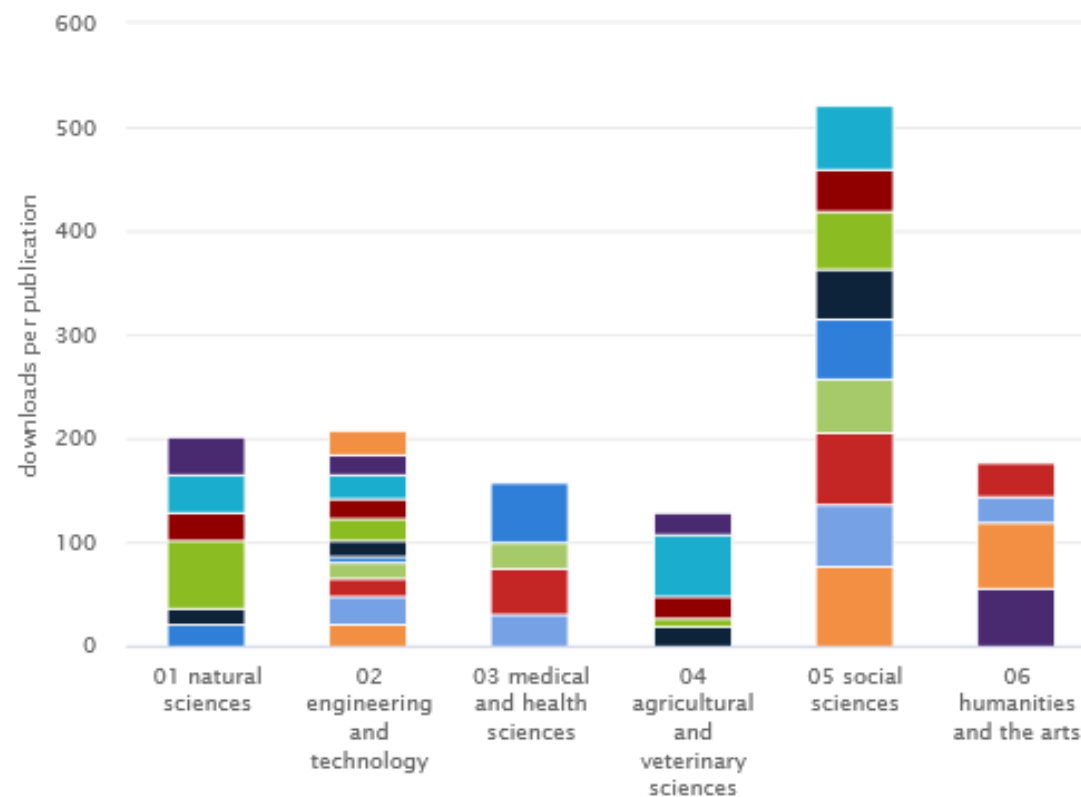
## Most downloaded FoS (level 2)

by number of publication downloads



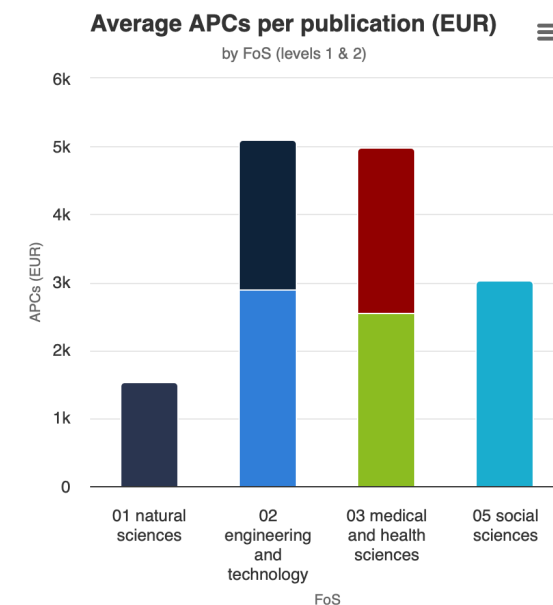
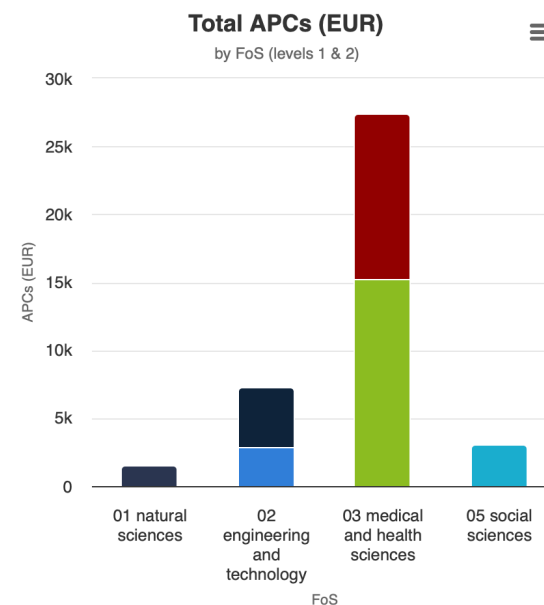
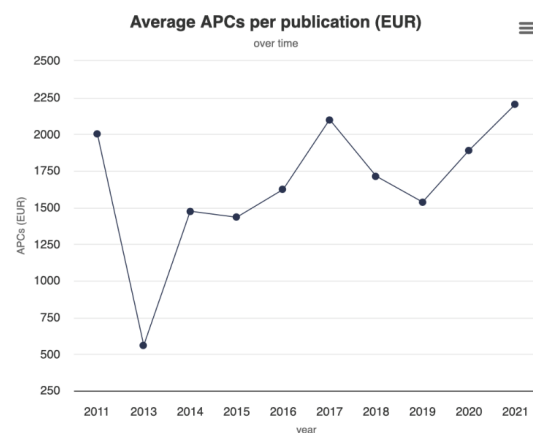
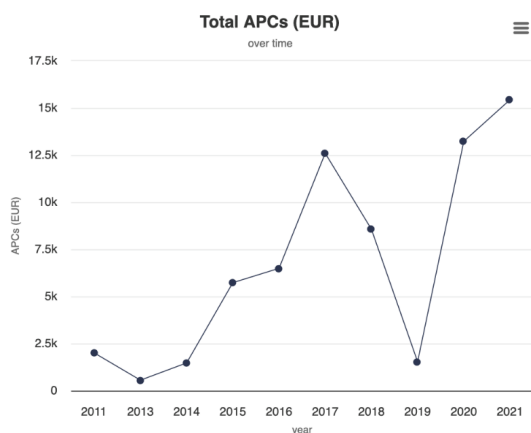
## Average Downloads per Publication

by FoS (levels 1 & 2)

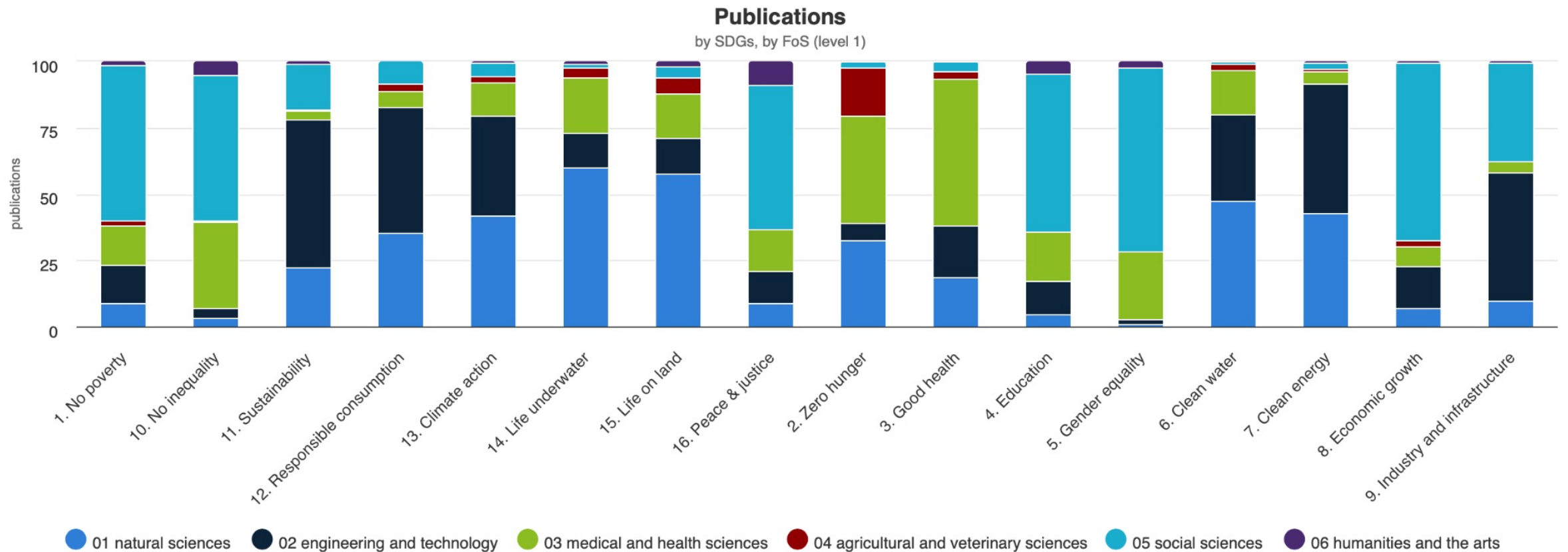


# NEW INDICATORS APCs

- The platform now incorporates OpenAPC data, providing a clearer view of financial aspects in Open Science, particularly regarding Article Processing Charges (APCs).



# COMBINED INDICATORS SDG & FoS




# UPCOMING INDICATORS

- **Plan S Compliance**
  - PlanS funder grant-supported output
  - Transformative agreements
  
- More information in the next Community call for Institutions
  - On May 21<sup>st</sup>
  - <https://www.openaire.eu/monitor-community-calls>

# DEMO



## NEXT STEPS

- To get started with a New Dashboard: <https://monitor.openaire.eu/get-started>
- Provide/update Funder project data
  - Use the  button (<https://monitor.openaire.eu/contact-us>)
    - By file (standard spreadsheet), via an API, your Website, or by Registering Projects with OFR
    - More info: <https://www.openaire.eu/funders-how-to-join-guide>
- Contact us if you identify any issues with the data quality of your Monitor
- Use linking functionality if needed

Thank you!  
*[harryd@athenarc.gr](mailto:harryd@athenarc.gr)*

<https://monitor.openaire.eu/contact-us>