

Ministry of  
Education and Science  
Republic of Latvia

OPEN ACCESS

FAIR DATA

CITIZEN SCIENCE

REPRODUCABILITY

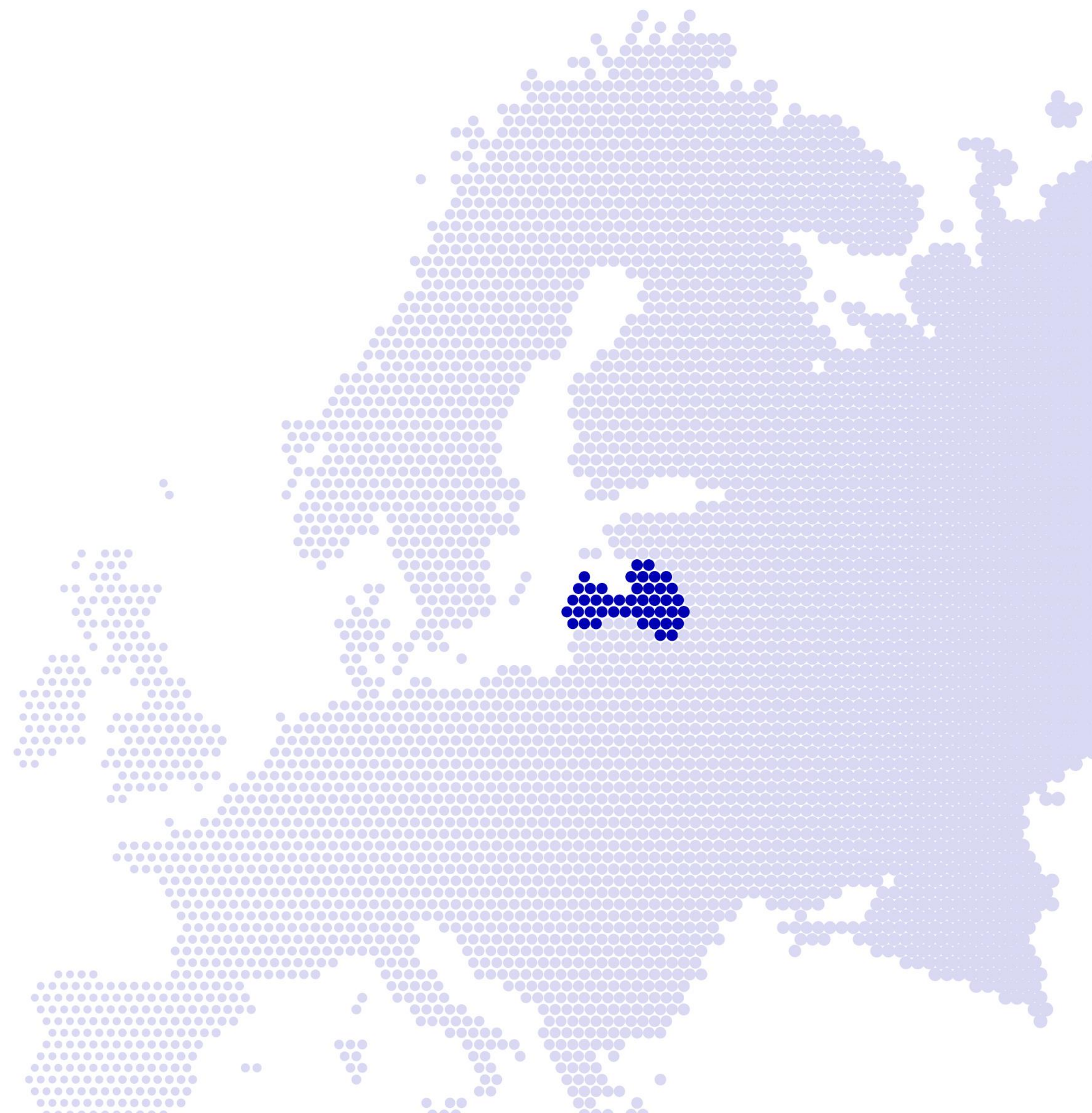
OPEN SCIENCE

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RIS3 Expert

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researchLatvia<sup>★</sup>  
Value Through Knowledge





# WHAT IS OPEN SCIENCE?

Open  
Access

FAIR  
Data

Citizen Science

Reproducibility

Evaluation

Incentives

Tools

...



“Open Science represents a **new approach** to the scientific process based on **cooperative work** and new ways of **diffusing knowledge** by using digital technologies and new collaborative tools. The idea captures a systemic change to the way science and research have been carried out for the last fifty years: shifting from the standard practices of publishing research results in scientific publications towards **sharing** and using all available knowledge at an earlier stage in the research process”.



“the practice of making research publications and data freely available”

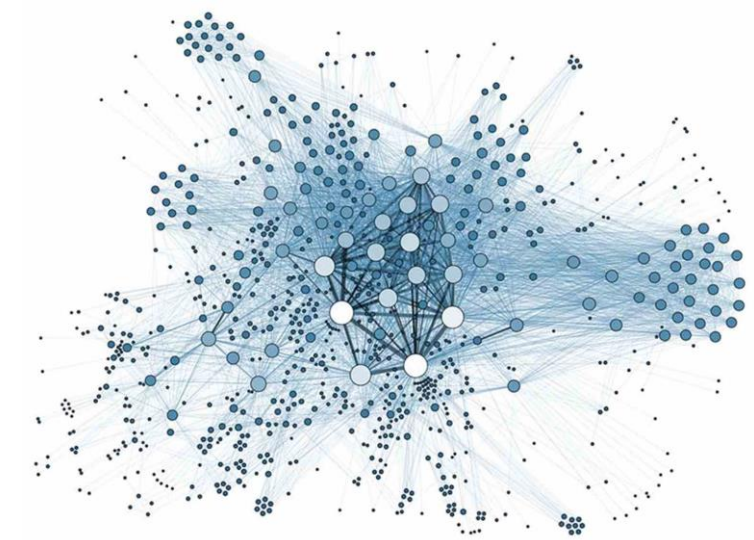
# WHY OPEN SCIENCE?



- Efficiency
- Quality and integrity
- Economic benefits
- Innovation and knowledge transfer
- Public disclosure and engagement
- Global benefits

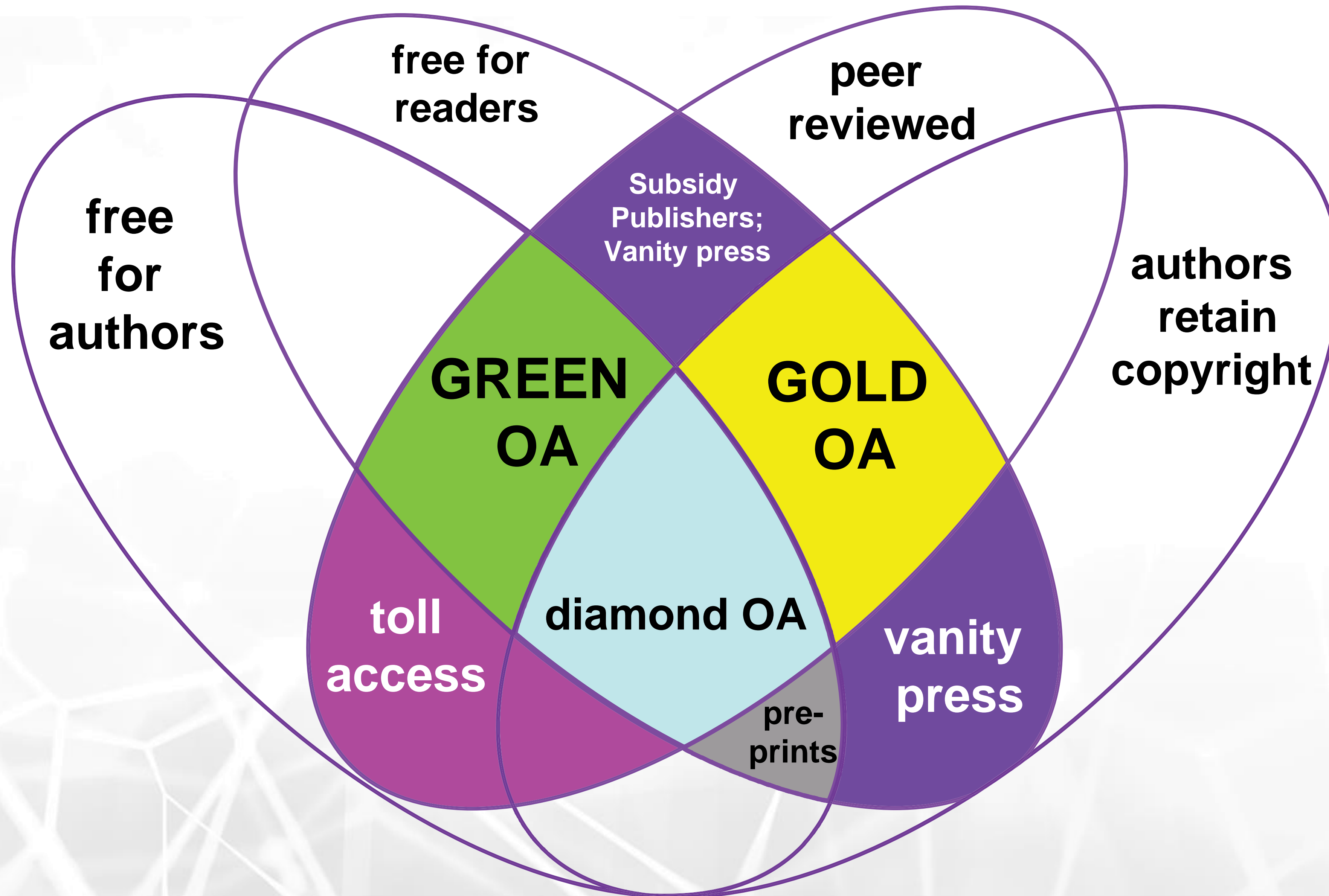
## Why do we need Open Science?

- *Open Science has the potential to increase:*
  - **Quality** and **efficiency** of R&I, if all the produced results are shared, made reusable, and if their reproducibility is improved;
  - **Creativity**, through collective intelligence and cross-disciplinary research that does not require laborious data wrangling;
  - **Trust** in the science system, engaging both researchers and citizens.



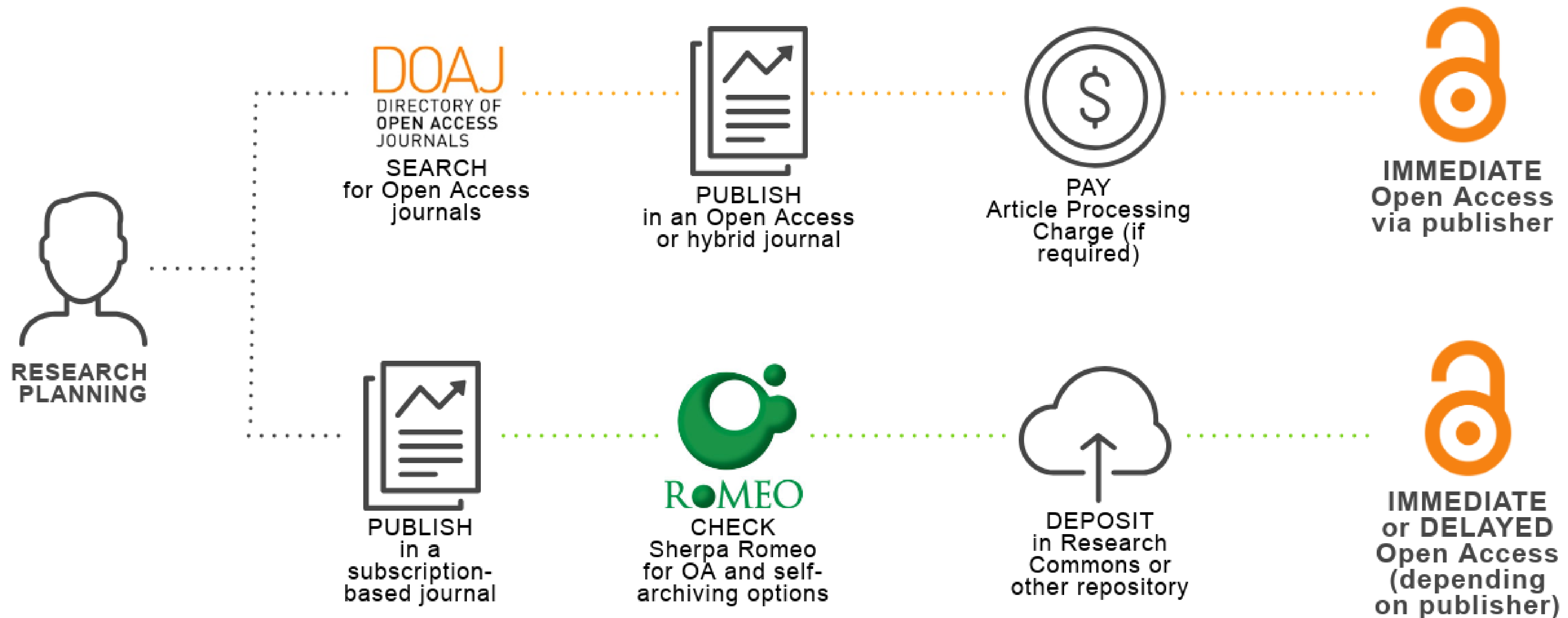


# OPEN ACCESS



# OPEN ACCESS

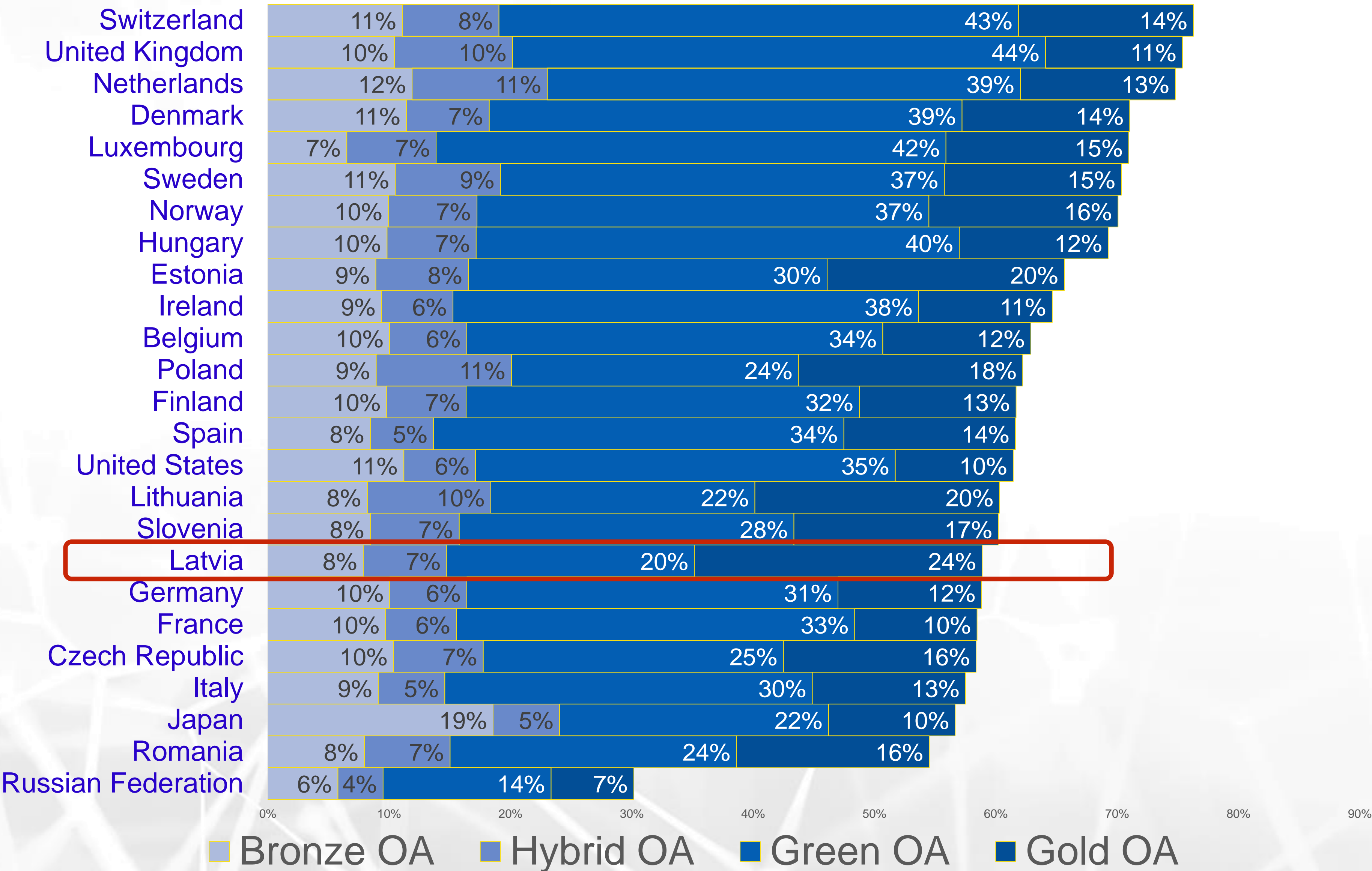
## GOLD ROUTE



## GREEN ROUTE

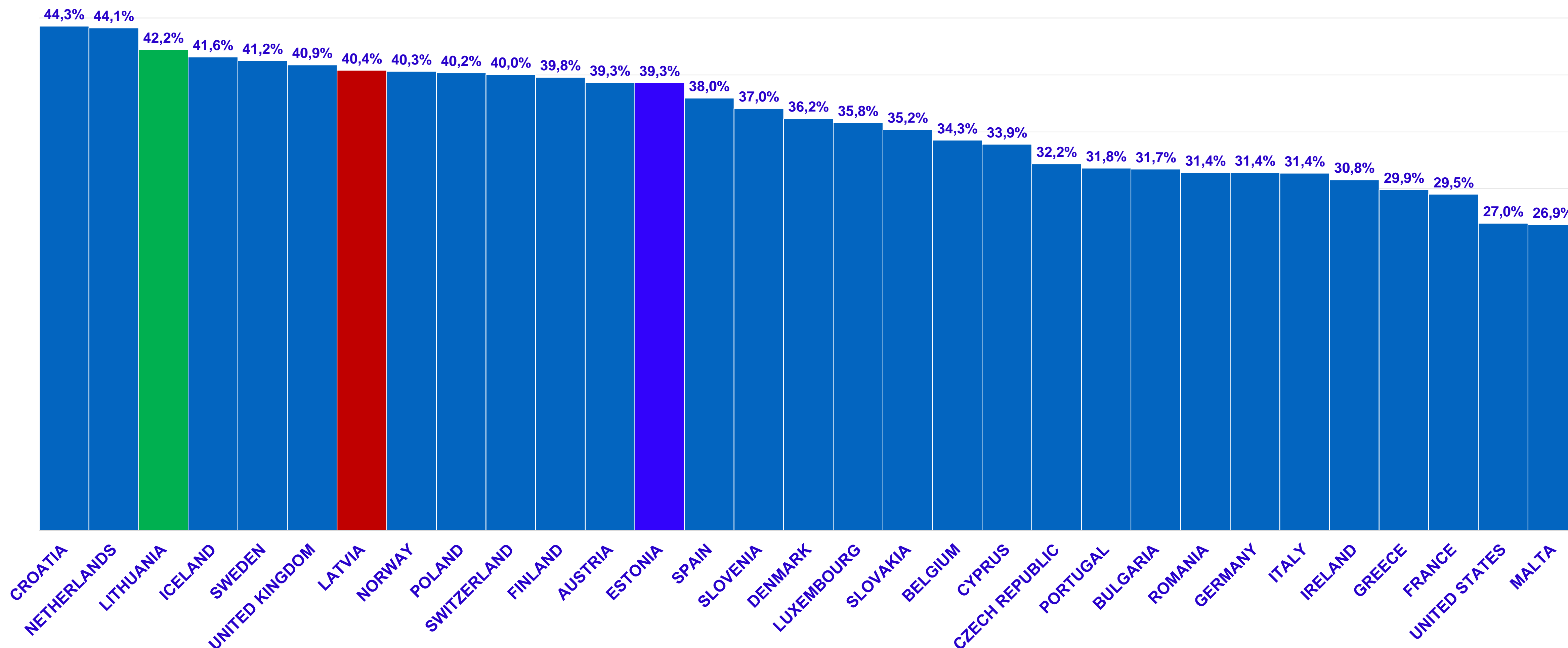
# OPEN ACCESS

## Percentage of Open Access publications in total publications



# OPEN ACCESS

## Percentage of Open Access publications in total publications (2018)

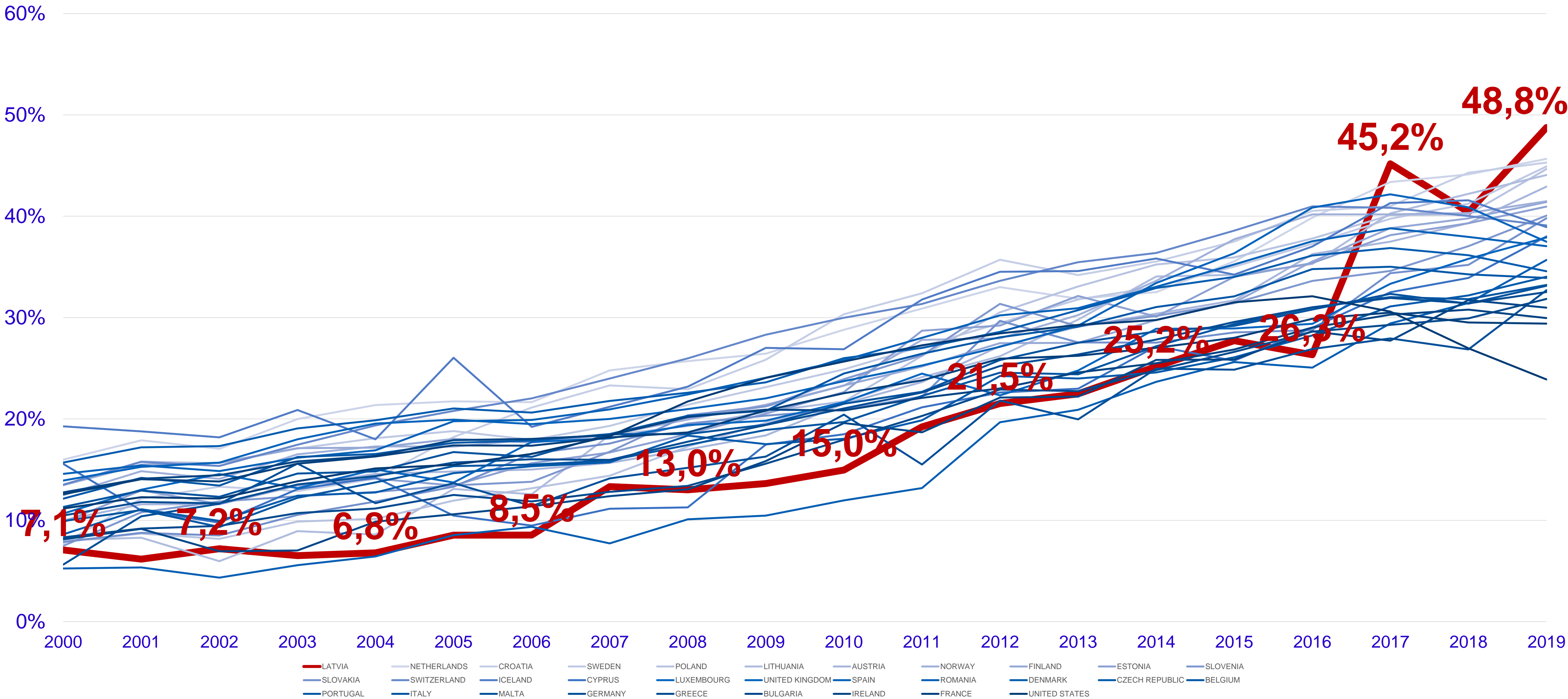


Source: Web of Science, InCites Dataset + ESCI



# OPEN ACCESS

Percentage of Open Access publications in total publications

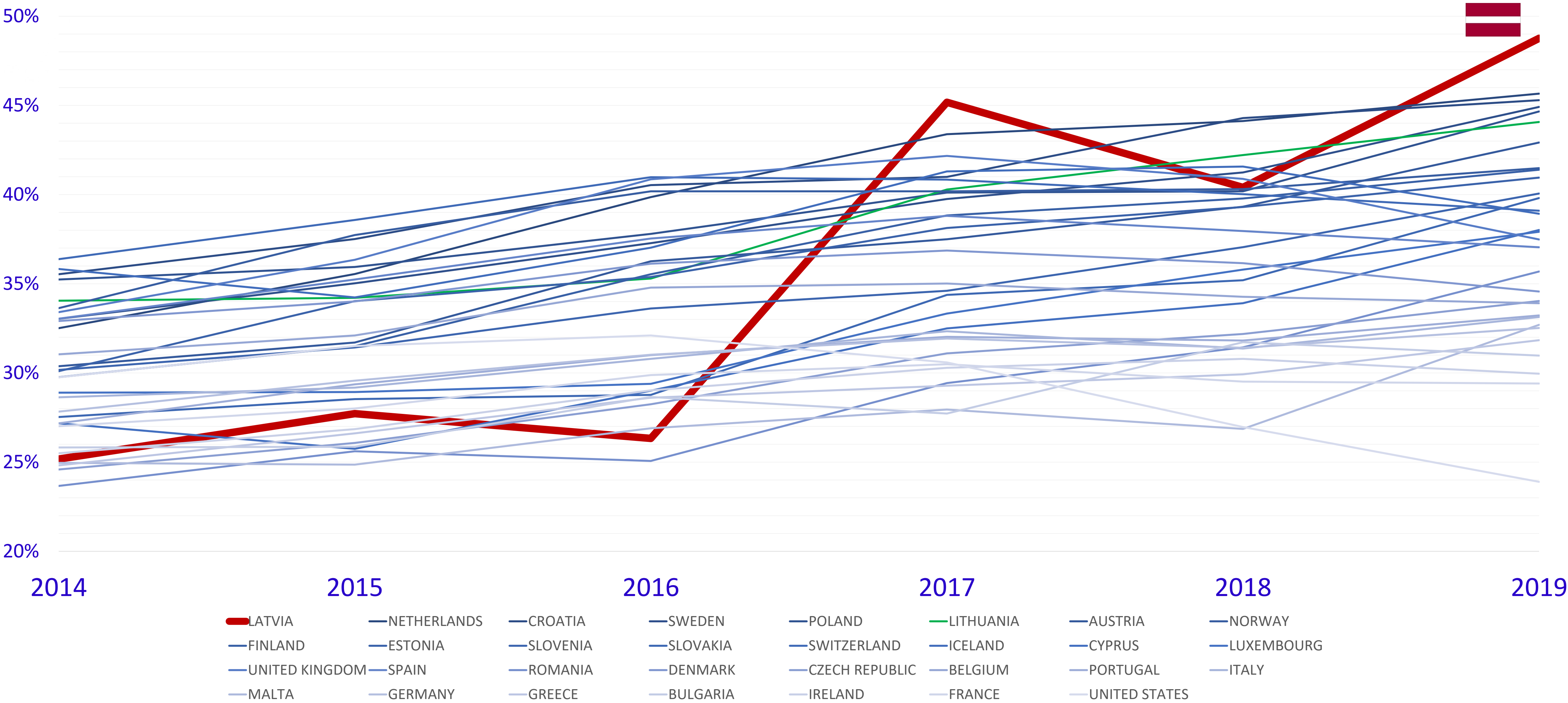


Source: Web of Science, InCites Dataset + ESCI



# OPEN ACCESS

Percentage of Open Access publications in total publications



Source: Web of Science, InCites Dataset + ESCI

F<sub>indable</sub> A<sub>ccessible</sub> I<sub>nteroperable</sub> R<sub>eusable</sub>



FAIR does not  
equal “Open”!



In practice...



EUROPEAN OPEN  
SCIENCE CLOUD

# REPOSITORIES



# FAIR DATA

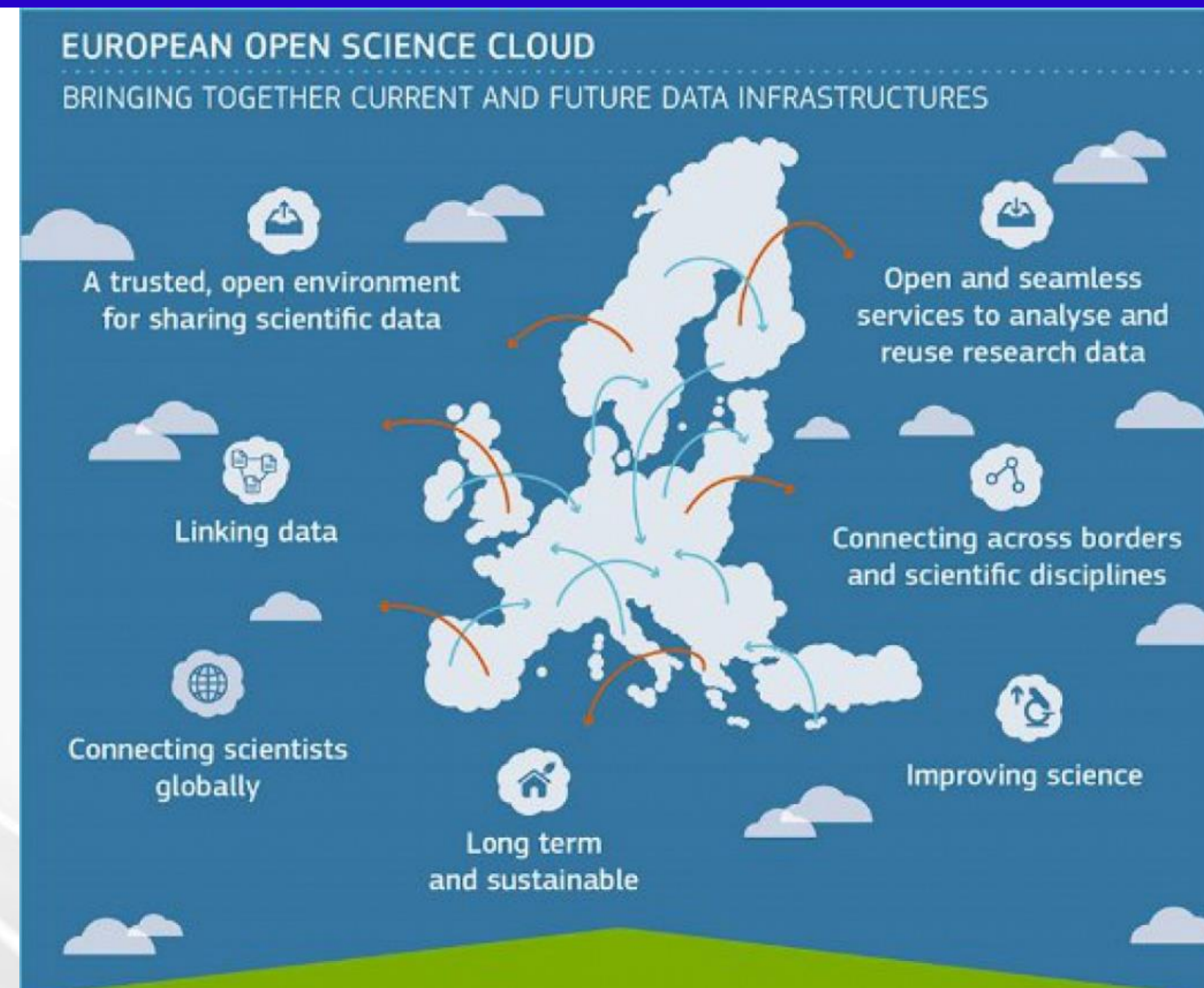


## EUROPEAN OPEN SCIENCE CLOUD

researchLatvia<sup>★</sup>  
Value Through Knowledge

Enabling the digital transformation of research: data-intensive, collaborative and cross-discipline

*EOSC will provide 2 million EU researchers and innovators an environment with services for data management, analysis and re-use across disciplines, increasing the creativity, productivity and reproducibility of research*





# Research data repository models for Latvia


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# FAIR DATA

 HARVARD  
Dataverse

Search ▾AboutUser GuideSupportSign UpLog In

 Metrics


9,359,488 Downloads


ContactShare


Search this dataverse...

FindAdvanced Search

+ Add Data

☒  Dataverses (313)

☒  Datasets (1,594)

☐  Files (0)

Dataverse Category

Research Project (132)

Researcher (75)

Research Group (36)

Organization or Institution (31)

Journal (9)

More...

Metadata Source

Harvard Dataverse (1,452)

Harvested (455)

Publication Year

2019 (337)

2018 (289)

2016 (260)

2017 (252)

2015 (242)

More...

Subject


Subject: Earth and Environmental Sciences ✕

1 to 10 of 1,907 Results

Sort ▾

Physico-Chemical Classification of Soil through fatawa Razvia: A Chemical Approach

Nov 3, 2019




Kanzuliman foundation, KAIJOR; Er. Kashif Raza; Er. Farhan Khan, 2019, "Physico-Chemical Classification of Soil through fatawa Razvia: A Chemical Approach", <https://doi.org/10.7910/DVN/IIVS3P>, Harvard Dataverse, V2

The natural environment was clean, but due to multifarious activities of human, it gets polluted resulting environmental pollution. In this study it was preferred to investigate the soil samples for some parameters through physico-chemical analysis. 25 samples were obtained to te...

Flood Tweet IDs (multilingual)

Nov 1, 2019




de, Jens, 2019, "Flood Tweet IDs (multilingual)", <https://doi.org/10.7910/DVN/T3ZFMR>, Harvard Dataverse, V2

This dataset contains the tweet IDs of 87,641,357 tweets related to floods in 11 languages collected between July 29, 2014 and November 20, 2018. All tweets mention one or more keywords in one of the respective languages: English: flood, floods, flooding, flooded, inundation, inu...

Model-Measurement Consistency and Limits of Bioaerosol Abundance Over the Continental United States

Oct 31, 2019 - Cziczo Group at MIT Dataverse

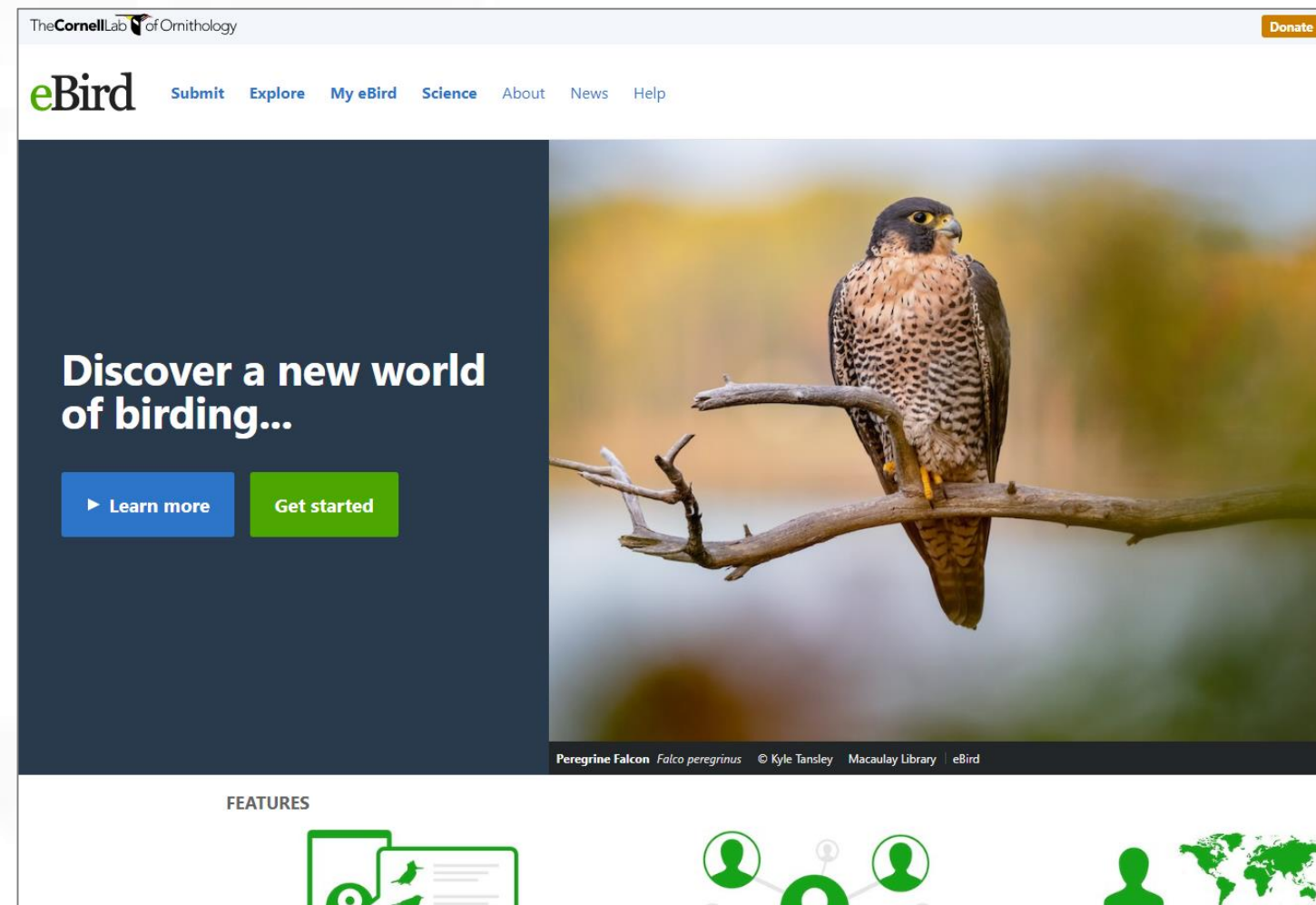


Zawadowicz, Maria, 2019, "Model-Measurement Consistency and Limits of Bioaerosol Abundance Over the Continental United States", <https://doi.org/10.7910/DVN/75VVNV>, Harvard Dataverse, V1, UNF:6:3cU3XSUqyc37+9WUrMLNZA== [fileUNF]

This dataset contains data used to generate figures in the journal article "Model-Measurement Consistency and Limits of Bioaerosol Abundance Over the Continental United States" published in Atmospheric Chemistry and Physics. Data is provided in .csv format with column headers as...



# CITIZEN SCIENCE



<https://ebird.org/>



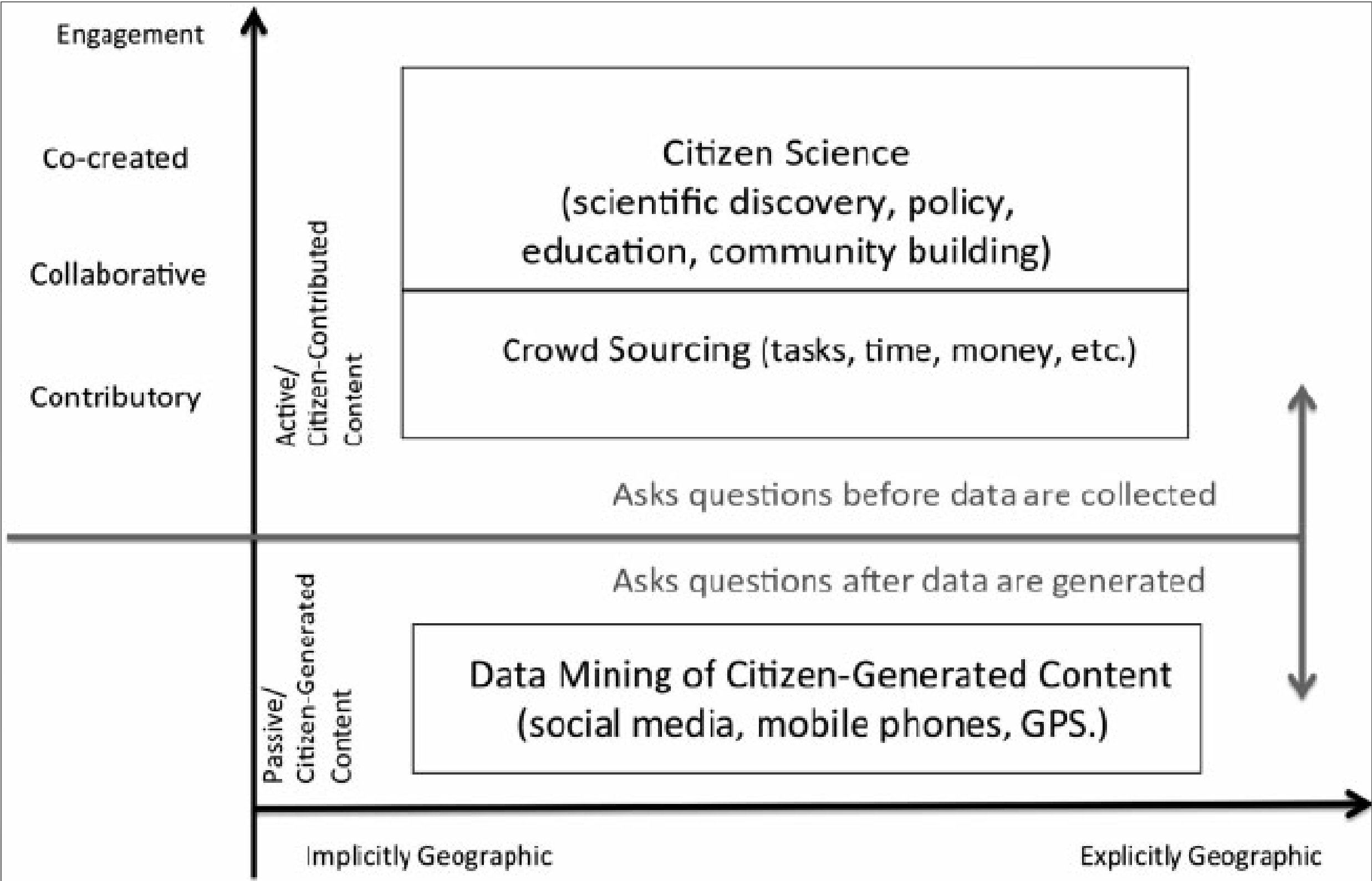
<https://www.zooniverse.org/>



<http://iesaisties.lv/>



# CITIZEN SCIENCE



Craglia, Max, and Lea Shanley. "Data democracy—increased supply of geospatial information and expanded participatory processes in the production of data." *International Journal of Digital Earth* 8, no. 9 (2015): 679-693.

	Cooper et al.	Wilderman	Bonney et al.	Contributory	Collaborative	Co-created
Stage of Inquiry						
Define question	✓	✓	✓			X
Gather information			✓			X
Develop hypotheses			✓			X
Design study	✓	✓	✓		(X)	X
Data collection	✓	✓	✓	X	X	X
Analyze samples		✓	✓		X	X
Analyze data	✓		✓	(X)	X	X
Interpret data	✓	✓	✓		(X)	X
Draw conclusions	✓		✓		(X)	X
Disseminate results			✓	(X)	(X)	X
Discuss results & ask new questions			✓			X

TABLE I  
VOLUNTEER INVOLVEMENT IN ENVIRONMENTAL SCIENCE TYPOLOGIES, WITH DEFINITIONS OF PARTICIPATORY SCIENCE MODELS. ✓ = INCLUDED IN MODEL; X = PUBLIC INCLUDED; (X) = PUBLIC SOMETIMES INCLUDED.

Wiggins, Andrea and Kevin Crowston. "From Conservation to Crowdsourcing: A Typology of Citizen Science." 2011 44th Hawaii International Conference on System Sciences (2011): 1-10.

# STUDY / ROADMAP FOR OPEN SCIENCE

- Will provide the analytical basis for national open science policy
- Mapping OS stakeholders
- Mapping research data repositories
- Recommendations for national OA policy, San Francisco declaration, cost estimates
- Recommendations for optimal research data repository model
- Ideas for promoting citizen science
- Completion by April, 2020



# TO DO LIST

- **Study/Roadmap for Open Science**
  - **Updating Re3data**
  - **Connecting OS to RIS3**
  - **Supporting national RI compatibility with EOSC**
  - **Continued investigation about research data repository models**
  - **Contributions to new ERA priorities**
- 

# INTERNATIONAL CONTEXT



**EUROPEAN OPEN  
SCIENCE CLOUD**



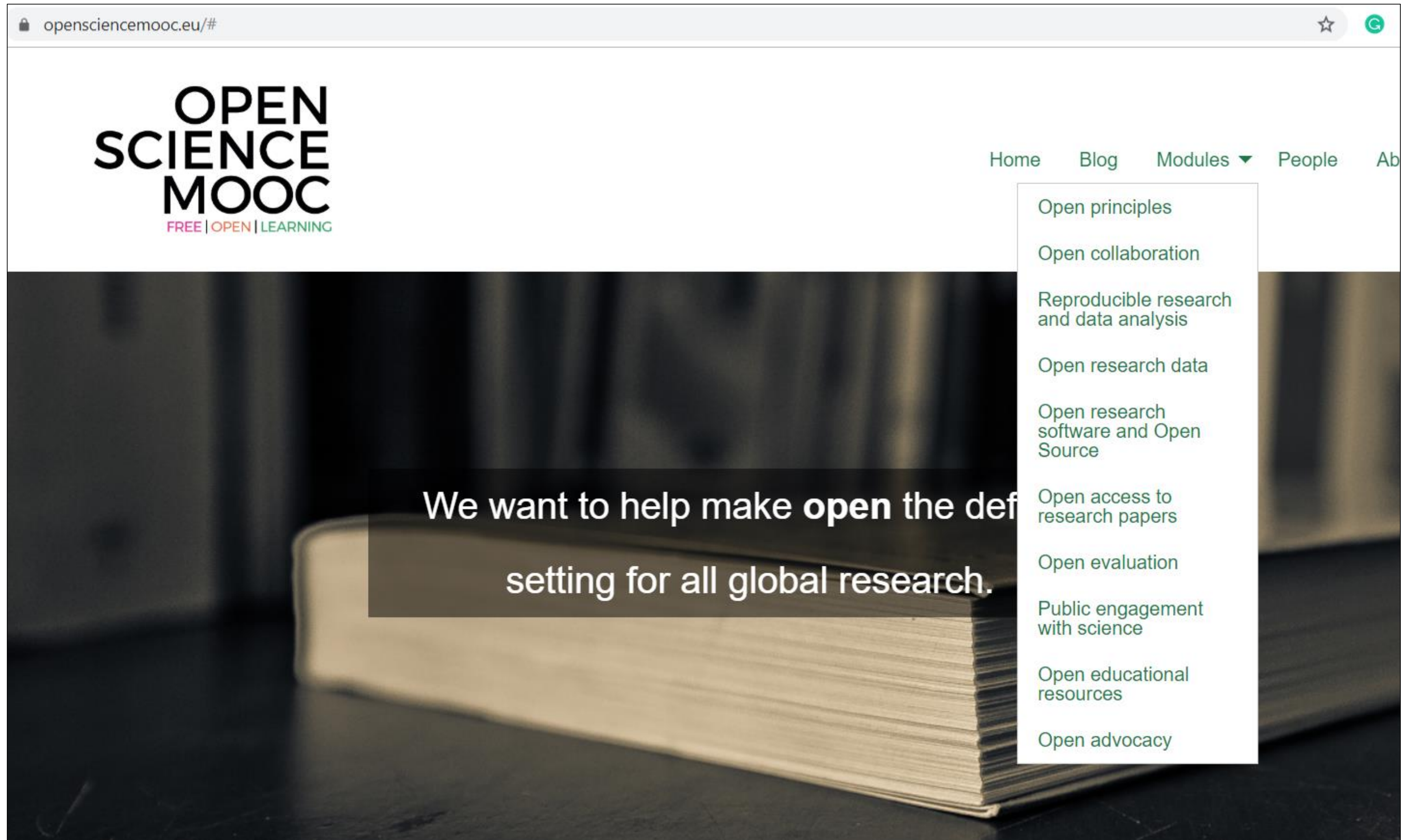
**Open Science Coordination in Europe**



**ERAC SWG OSI**



# LEARN MORE



The screenshot shows the homepage of the Open Science MOOC website. The browser address bar displays 'opensciencemooc.eu/#'. The website header features the 'OPEN SCIENCE MOOC' logo with the tagline 'FREE | OPEN | LEARNING' in pink, orange, and green. A navigation menu includes links for 'Home', 'Blog', 'Modules' (with a dropdown arrow), 'People', and 'About'. The 'Modules' dropdown menu is open, listing ten topics: 'Open principles', 'Open collaboration', 'Reproducible research and data analysis', 'Open research data', 'Open research software and Open Source', 'Open access to research papers', 'Open evaluation', 'Public engagement with science', 'Open educational resources', and 'Open advocacy'. The main content area has a background image of a stack of books and a dark overlay with the text: 'We want to help make **open** the default setting for all global research.'

opensciencemooc.eu/#

OPEN SCIENCE MOOC  
FREE | OPEN | LEARNING

Home Blog Modules ▾ People Ab

Open principles  
Open collaboration  
Reproducible research and data analysis  
Open research data  
Open research software and Open Source  
Open access to research papers  
Open evaluation  
Public engagement with science  
Open educational resources  
Open advocacy

We want to help make **open** the default setting for all global research.



# Thank You!

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