Ministry of
Education and Science
Republic of Latvia

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Value Through Knowledge

OPEN ACCESS
FAIR DATA
CITIZEN SCIENCE
REPRODUCABILITY
OPEN SCIENCE

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WHAT IS OPEN SCIENCE?

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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?

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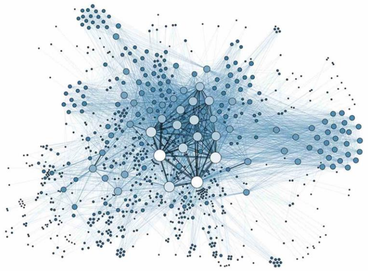
OECD FOSTER

- 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.



European Commission

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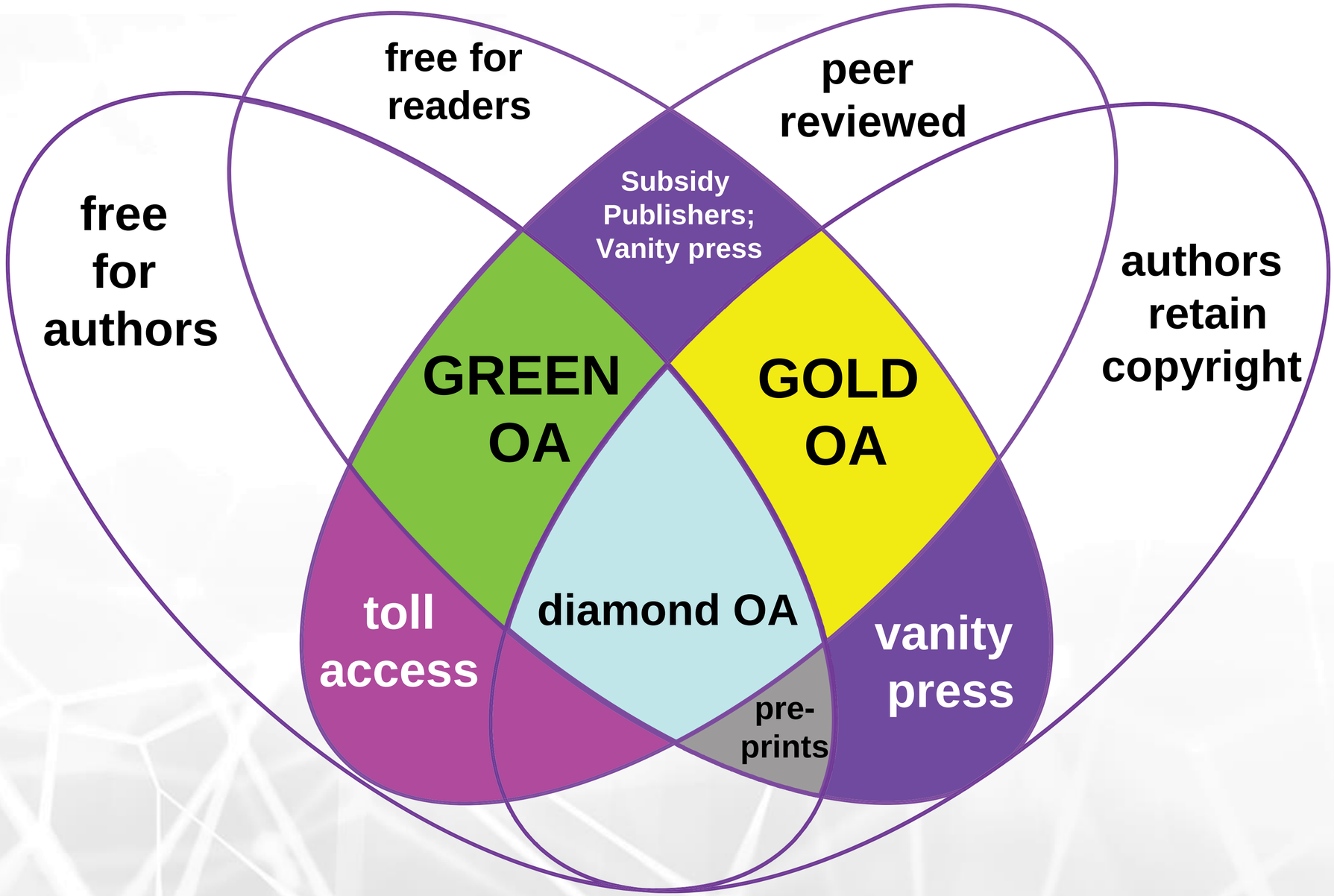

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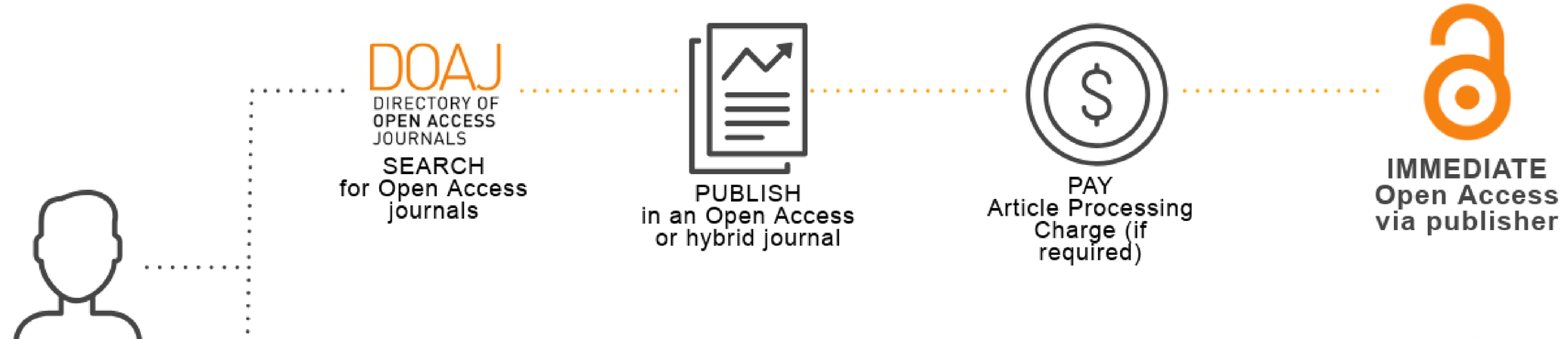
GOLD ROUTE



GREEN ROUTE

THE UNIVERSITY OF WAIKATO
Te Whare Wānanga o Waikato

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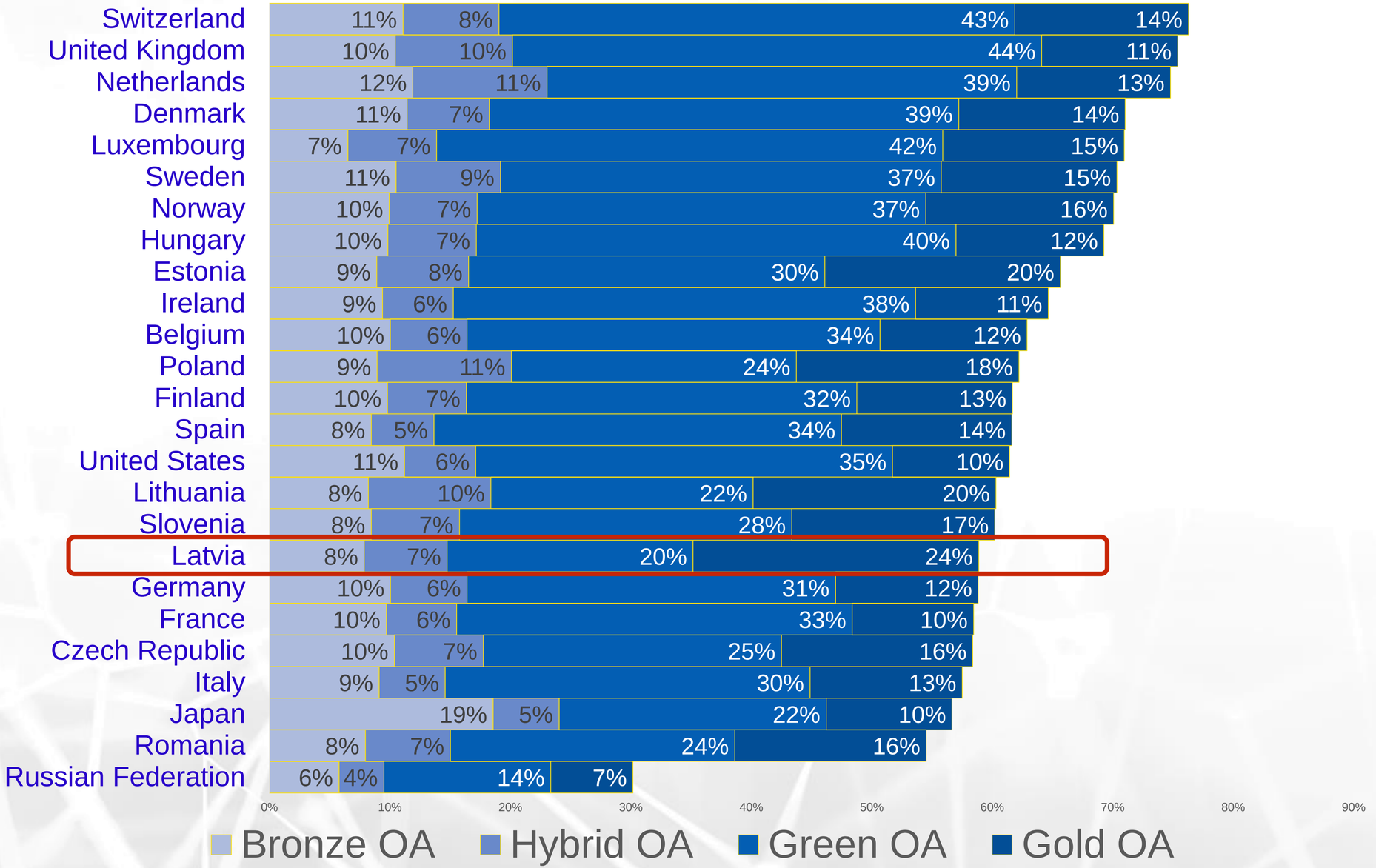
Percentage of Open Access publications in total publications



Reference date: 2009-2018

Scopus/Unpaywall data Source: EC Open Science monitor

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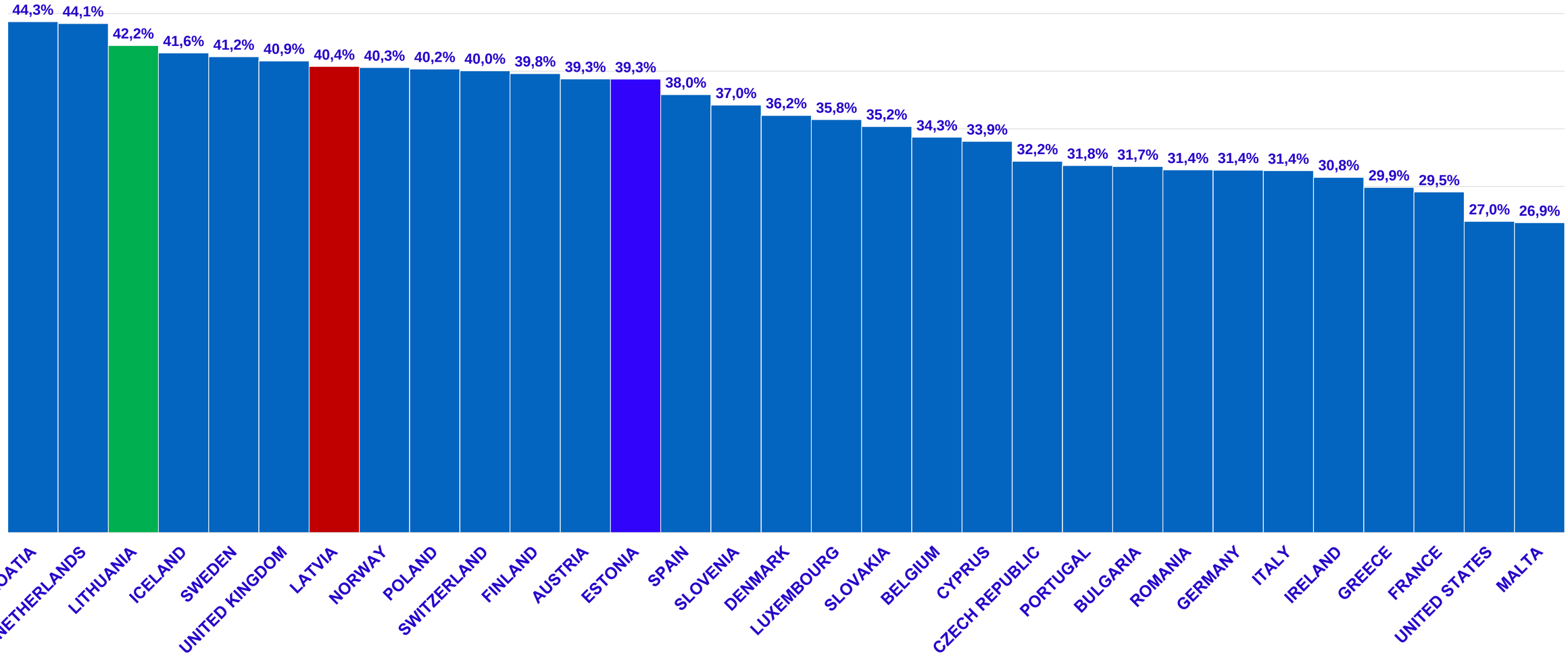
Percentage of Open Access publications in total publications (2018)



Source: Web of Science, InCites Dataset + ESCI

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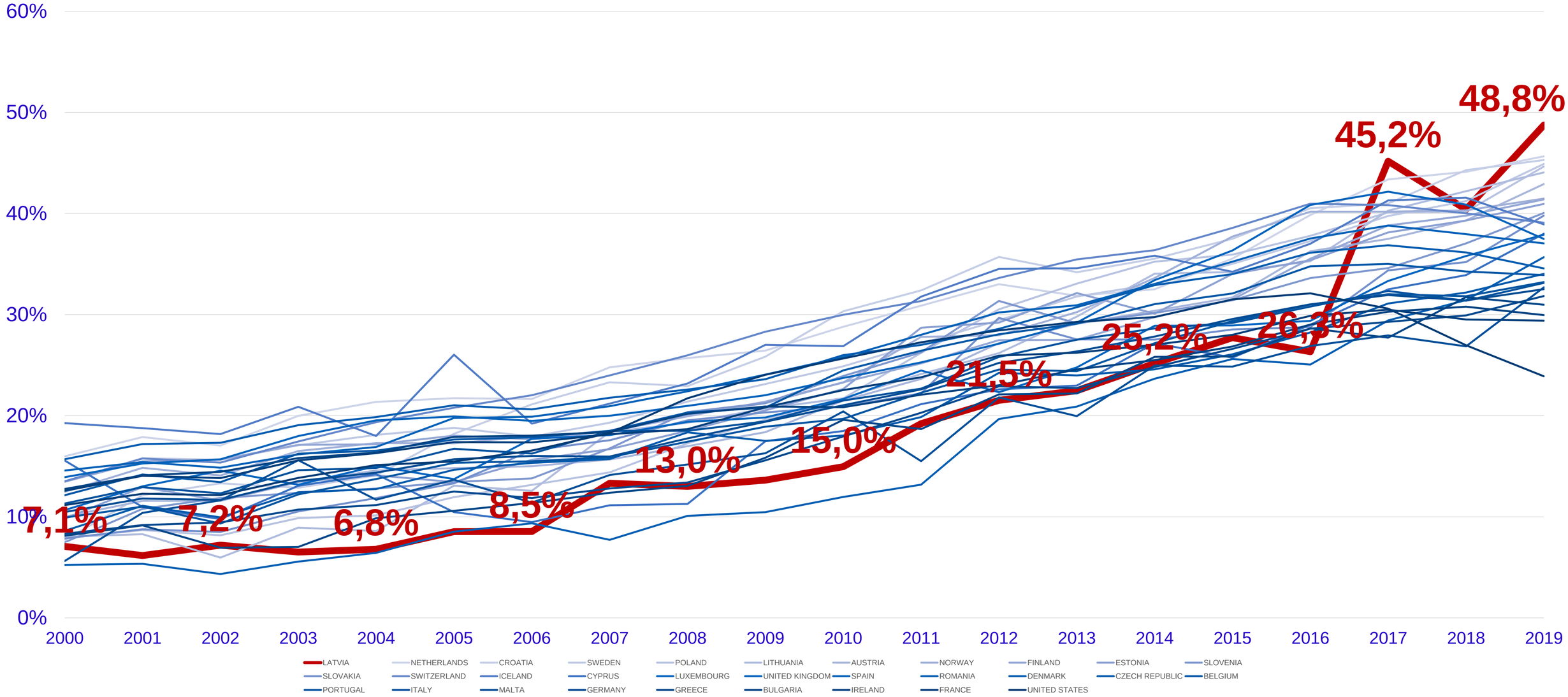
Percentage of Open Access publications in total publications



Source: Web of Science, InCites Dataset + ESCI

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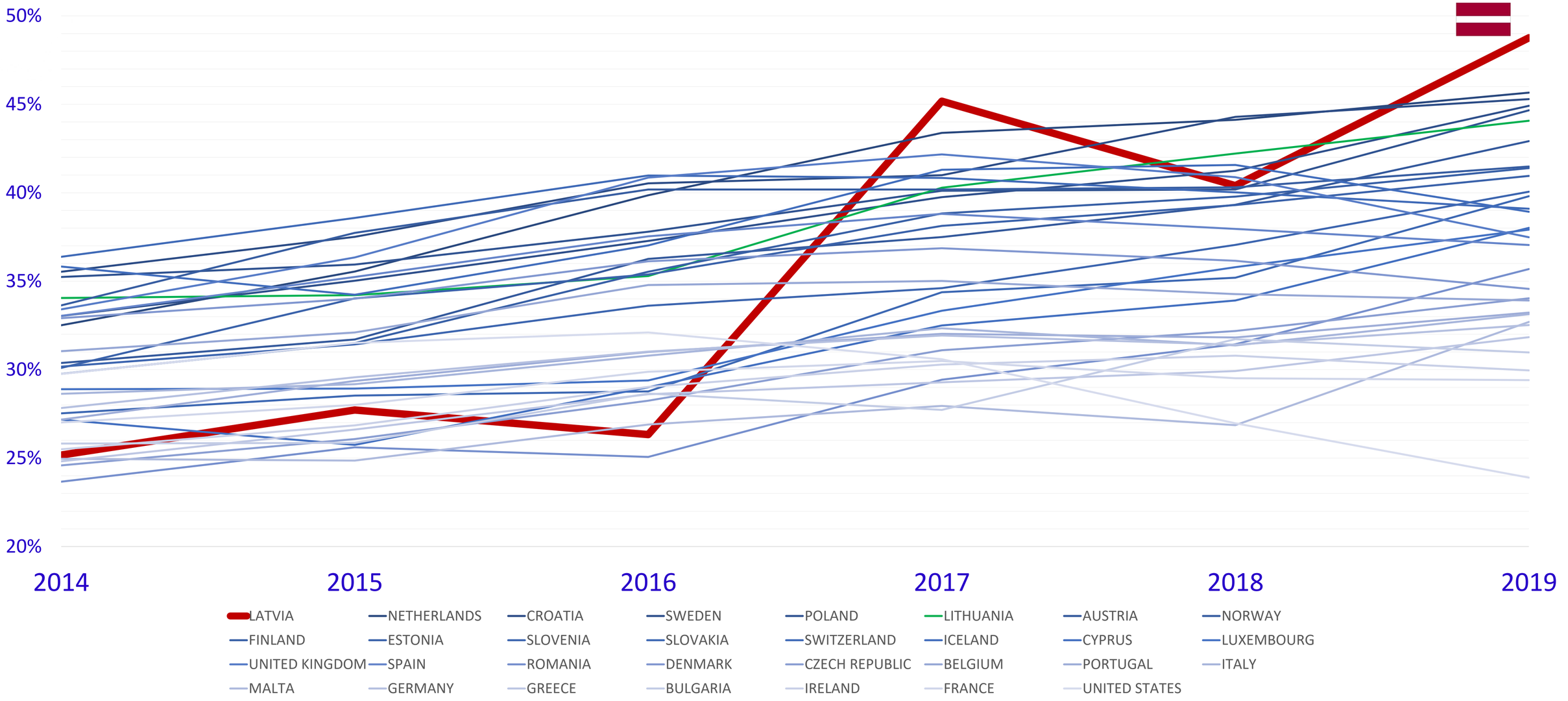
Percentage of Open Access publications in total publications



Source: Web of Science, InCites Dataset + ESCI

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Findable Accessible Interoperable Reusable

FAIR does not equal "Open"!

In practice…

EUROPEAN OPEN SCIENCE CLOUD

REPOSITORIES

FAIR DATA

EUROPEAN OPEN SCIENCE CLOUD

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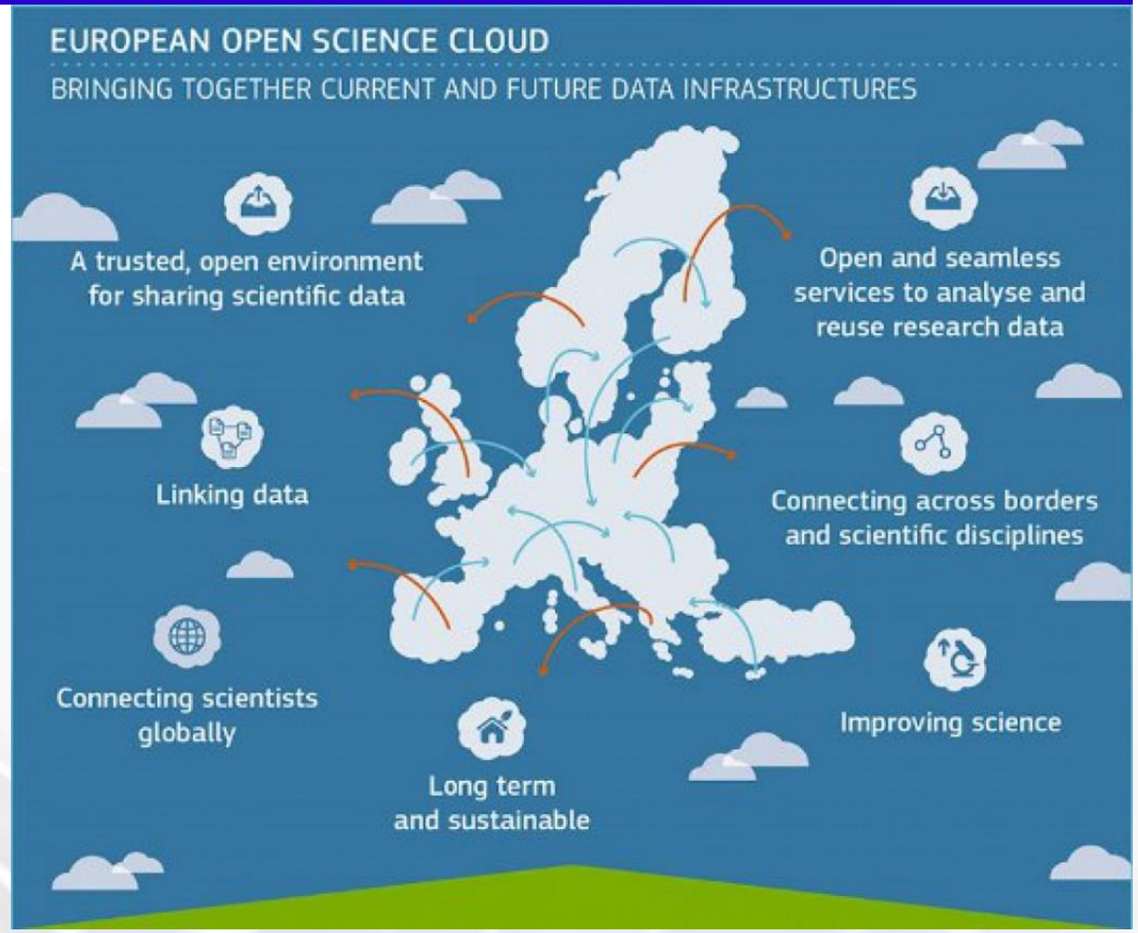
European Commission

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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ESFRI

ENA
European Nucleotide Archive

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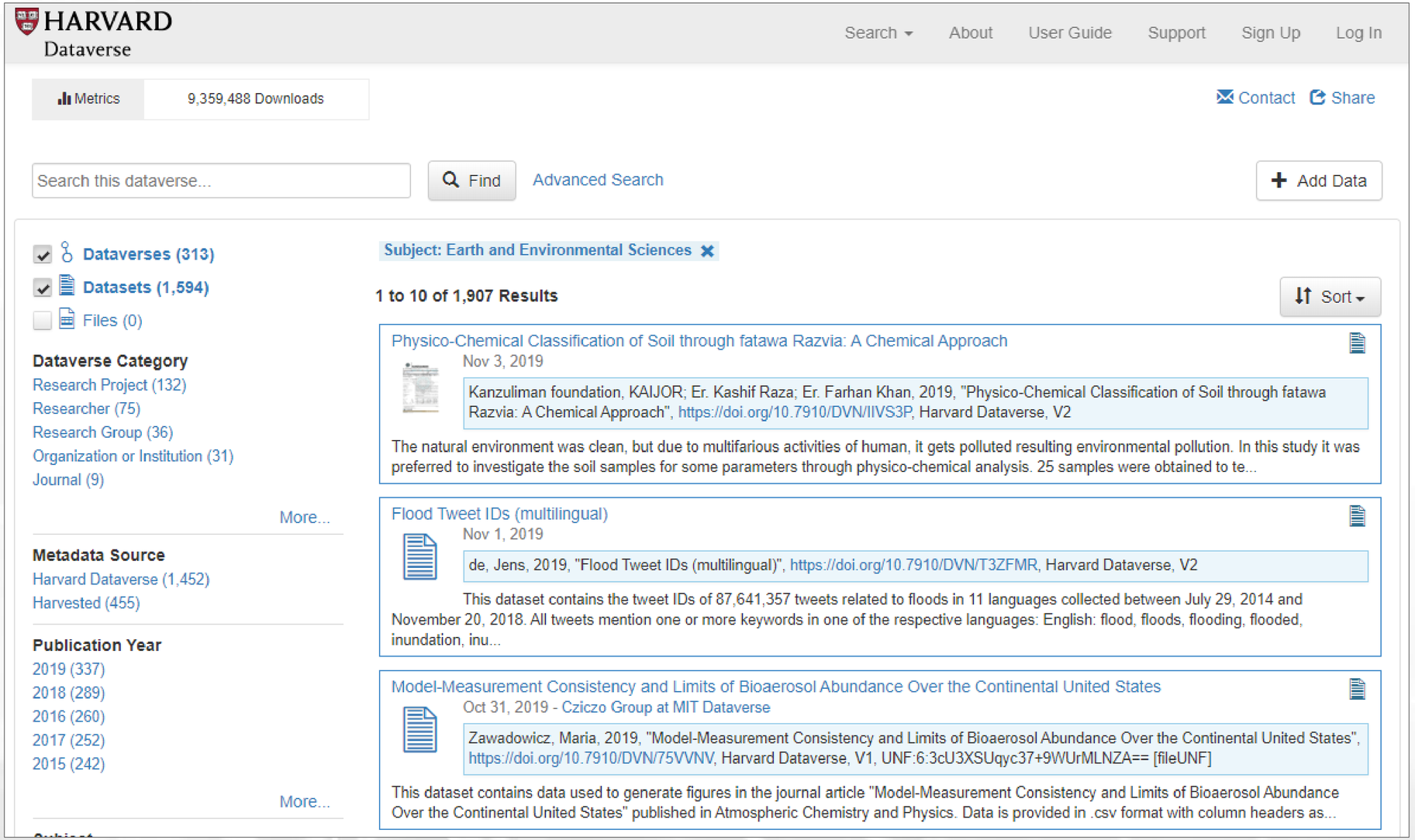
FAIR DATA



DataverseNO
Dataverse Network Norway

The Dataverse Project
Created at IQSS at Harvard University

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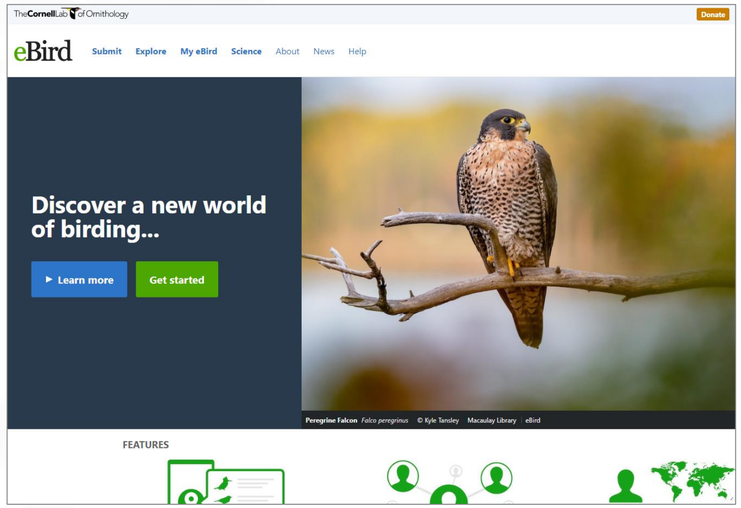
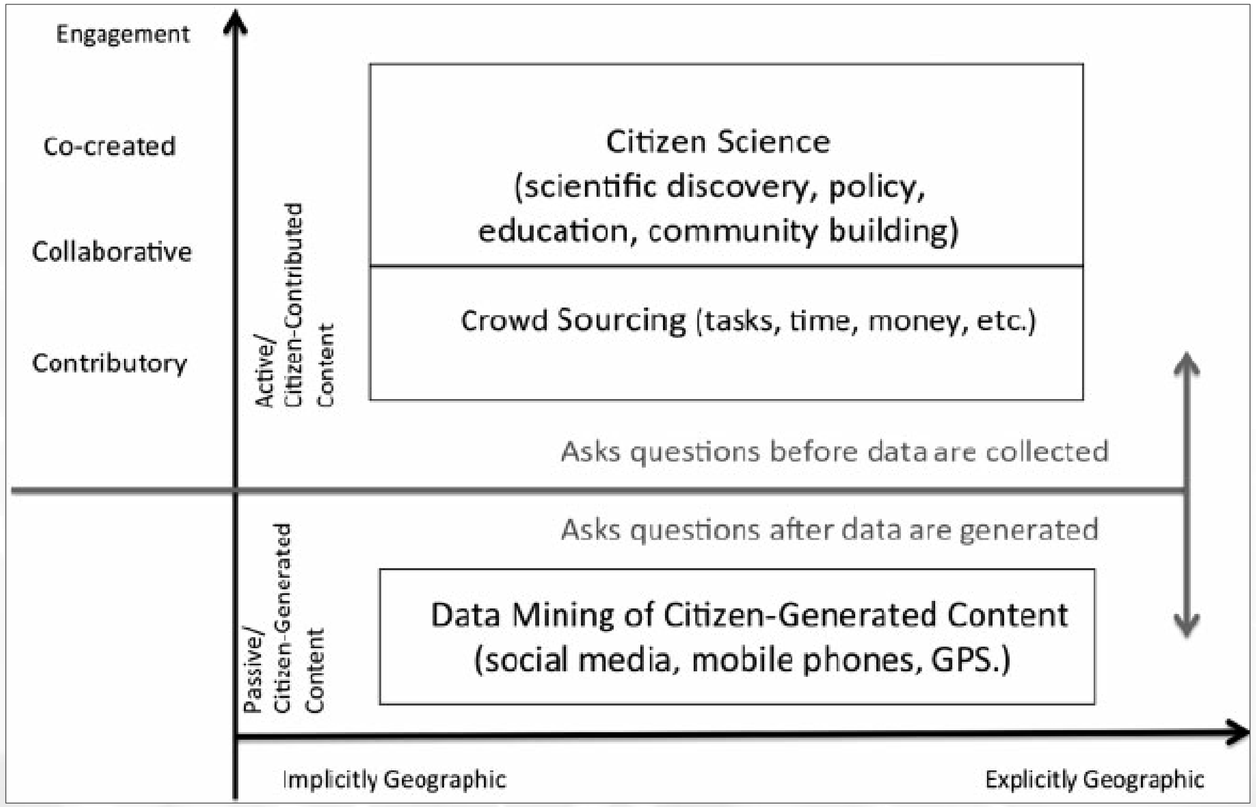


https://ebird.org/

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.

Stage of Inquiry	Cooper et al.	Wilderman	Bonney et al.	*Contributory*	*Collaborative*	*Co-created*
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.

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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

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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

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INTERNATIONAL CONTEXT

EUROPEAN OPEN SCIENCE CLOUD

OECD

OpenAIRE

Horizon Europe

UNESCO

EU2019.FI

Open Science Coordination in Europe

ERAC SWG OSI

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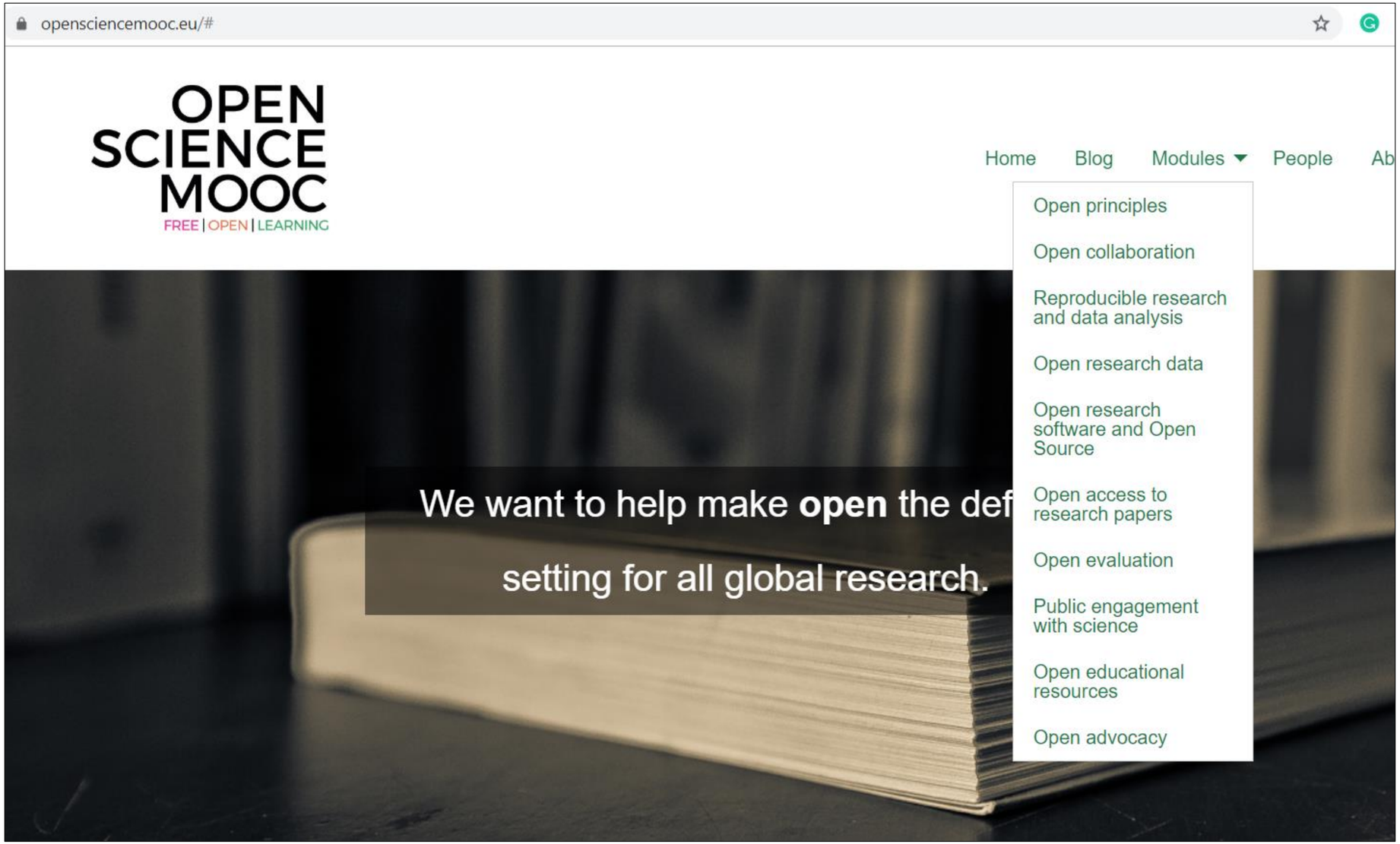

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Thank You!

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