OPEN SCIENCE: PROGRESS AND OPPORTUNITIES

ASKFOOD WEBINAR SERIES

OPEN SCIENCE: CHALLENGES AND OPPORTUNITIES TO PROMOTE KNOWLEDGE-BASED INNOVATION OF THE FOOD SYSTEM

Dr. Lidia Borrell-Damián

Secretary General

Science Europe

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37 Member Organisations in 27 countries

SCIENCE EUROPE

European association representing the interests of major public research performing (RPOs) and research funding organisations (RFOs) that foster excellent, ground-breaking research in Europe.

Map of Science Europe Member Organisations

Science Europe advocates science and the scientific community to help build the European Research Area and shape the global scientific agenda.

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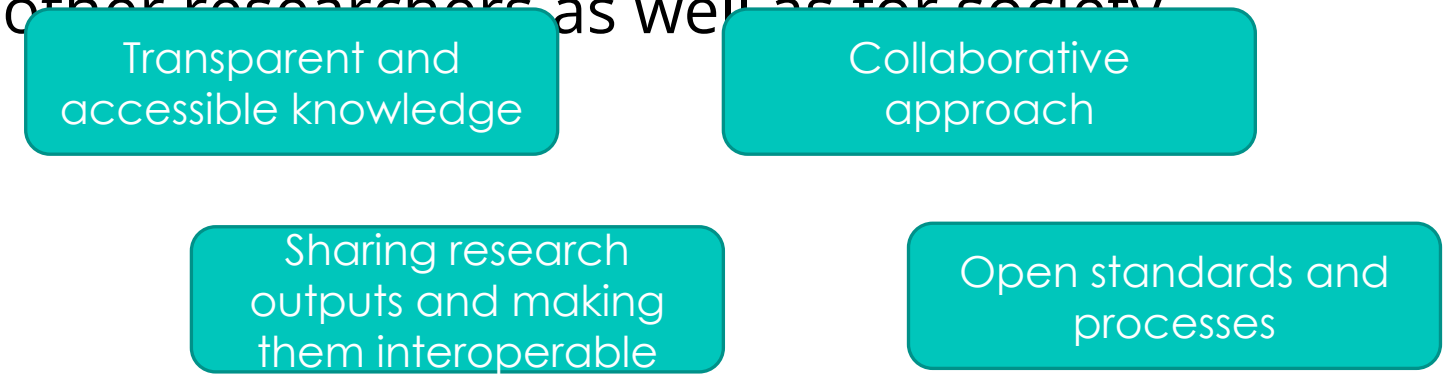
- ***"Food systems as a whole need, thus, both to revise the scenarios in which research and industry were investing in the pre-covid era to define new boundaries and new targets in order to continue boosting innovation and favour the Great Food Transformation.***
- ***Within this framework a new paradigm needs to be developed within all actors and decision makers by strengthening interactions and building a new ecosystem among all the stakeholders and involving policymakers and all food-related communities (e.g. nutrition, agriculture, food, health, environment, water, climate, education, employment, trade) that prioritize actions towards a more sustainable and resilient food system while promoting a responsible innovation."*****(1)**

(1) https://www.askfood.eu/content/beyond-covid-19-webinars

OPEN SCIENCE

- Open Science is making research and research outputs accessible
for other researchers as well as for society



- Open Science aims to increase the efficiency and reproducibility of science, making science more reliable and responsive to societal challenges.

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COMPONENTS OF OPEN SCIENCE

A practical classification

“Horizontal”:

- Access to research outputs, activities, tools and knowledge
- Research Recognition Systems
- Research Infrastructures and supporting infrastructures
- Policy and legislation
- Investment and finance

“Vertical”:

- Research publications and data
- Research integrity
- Research culture
- Research careers
- Peer review/research assessment
- Transparency of the research process
- Interdisciplinarity
- Equality, diversity and inclusion (beyond gender balance)
- Public engagement
- Citizens Science

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WHAT DOES SCIENCE EUROPE DO TO PROMOTE OPEN SCIENCE?

- Science Europe is committed to fostering Open Science.
- Many of Science Europe priorities contribute to Open Science, such as:
  - Open Access to research publications
  - Data sharing and research data management
  - EU Legislation (Copyright, General Data Protection Regulation, Digital Services Act)
  - Coordination of policies (Generation of Open Access Principles 2013; Plan S principles, 2018)
  - Research Assessment
  - Research Culture
  - Research Ethics and Integrity

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OPEN ACCESS TO RESEARCH PUBLICATIONS

- Science Europe Member Organisations are all committed to ensuring that the results of publicly funded research are freely available.

- Common principles towards OA
- Development of OA policies within SE Member Organisations (OA mandate for funded/affiliated researchers)
- Advocacy towards OA
- Exchange of best practices on policies and tools supporting OA
- Joining forces with other stakeholders working towards OA and with the European Commission

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RESEARCH DATA MANAGEMENT

- Sharing and re-use of research data are essential to verify research findings and foster new researc
- Science Europe promotes data sharing by:

Promoting the alignment of research data management policies and practices across research stakeholders in Europe

Supporting researchers with clear guidance on how to plan the management of their data from the very beginning and throughout the research process

Providing guidance to reviewers of data management plans and institutional data stewards

- **SE RDM Guide** recommended in the Framework Programme

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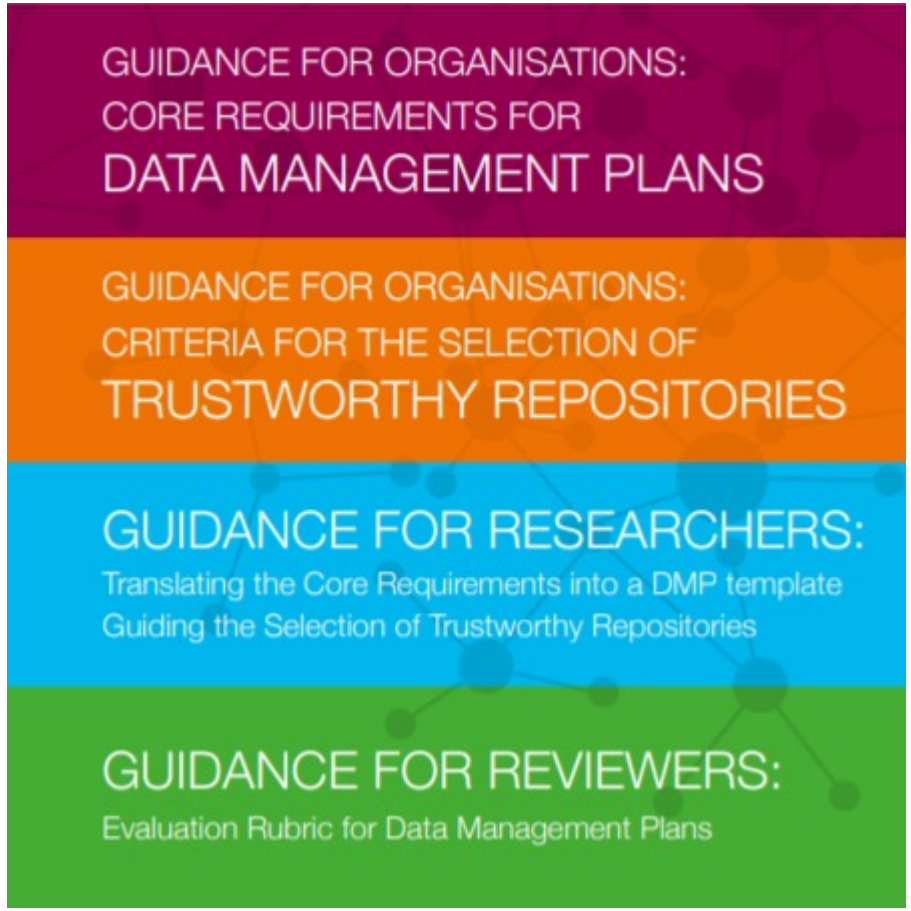
Practical Guide to the International Alignment of Research Data Management - Extended Edition (January 2021)

(link embedded in the image)

(first edition January 2019)

Content:



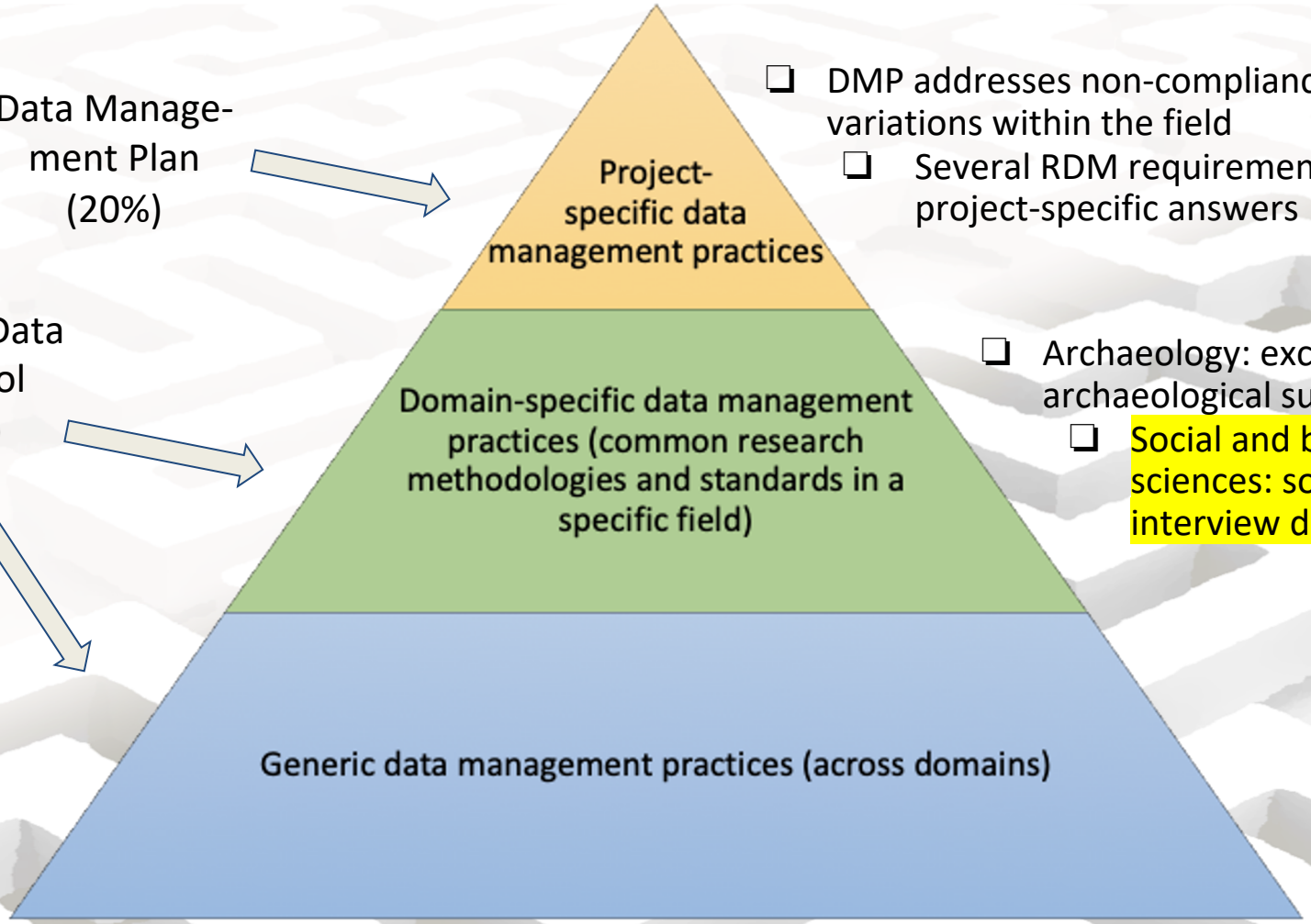
New 2021 !!

Why does a domain approach to data management make sense?

Thinking about food… why not to look at archaeology !?

Data Manage-ment Plan (20%)

Domain Data Protocol (80%)



- DMP addresses non-compliance and variations within the field
  - Several RDM requirements demand project-specific answers

- Archaeology: excavation & archaeological survey data
  - Social and behavioral sciences: social survey & interview data

DATA SHARING AND INTEROPERABILITY AT EUROPEAN LEVEL: THE EUROPEAN OPEN SCIENCE CLOUD (EOSC)

- The EOSC:
  - Is an initiative started by the European Commission and developed together with research stakeholders
  - Aims at federating existing and future research data infrastructures to allow seamless access to data for researchers, promoting research data to be FAIR (findable, accessible, interoperable and re-usable)
  - Has been set up as a European Partnership within the Horizon Europe Framework Programme. The EOSC Association manages the Partnership in close collaboration with stakeholders including research funders, researchers associations, research performing organisations, universities, research infrastructures, data providers, scholarly publishers, etc.
  - Science Europe has been involved in EOSC's development since 2017, and contributes to its development supporting its members.

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SCIENCE EUROPE AND ITS MEMBERS IN EUROPEAN AND GLOBAL OA INITIATIVES

- Input to EU Framework Programme Policies: Horizon 2020, Horizon Europe
- Collaboration with other European R&I stakeholders : universities, publishers, funders, research infrastructures, etc. : Open Science Policy Platform
- 9 Science Europe members are signatories of OA 2020
- 13 Science Europe members were founding members of Plan S and cOAlition S

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Plan S : strong principles

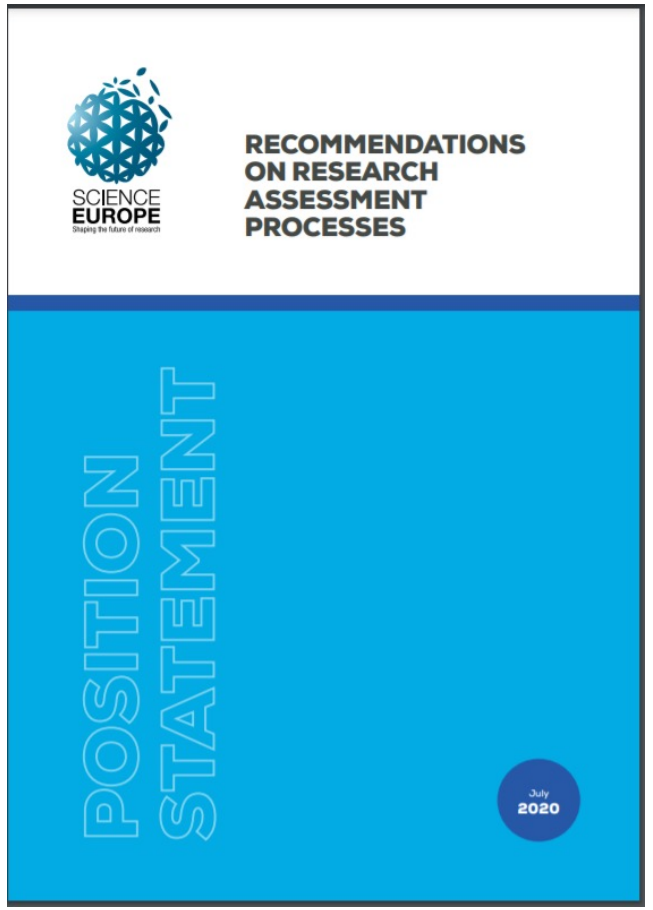
- Research results are a public good and should be immediately available so as to accelerate science
- **No more paywalled publications**
- Open Access must be **immediate**:
  no embargo periods
- Publication under a **CC-BY license** by default, **no copyright transfer** (*Principle 1*)
- No ‘hybrid’ model of publication, except as a transitional arrangement with a defined endpoint

Plan S : strong principles

- Pricing, contracts and publication fees should be transparent and reasonable (*Principle 5*)
- **Funders** commit to support such publication fees, individual researchers do not pay (*Principle 4*)
- **Multiple routes** to OA compliance (*Principle 5*)
- A commitment to assess research outputs based on their **intrinsic merit** and NOT their venue of publication or quantitative metrics, following e.g. DORA (*Principle 10*).

RESEARCH ASSESSMENT FOR PROJECT SELECTION

- 2020 Recommendations on research assessment processes:
- “Organisations should consider broadening the spectrum of research outputs
and activities that are considered during the assessment of candidates,
research proposals, and/or research institutes.”
- Science Europe promotes to include researchers’ Open Science activities
in the criteria for research assessment.



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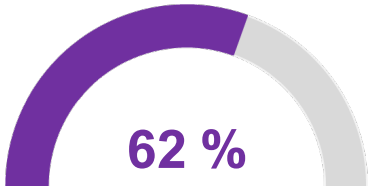
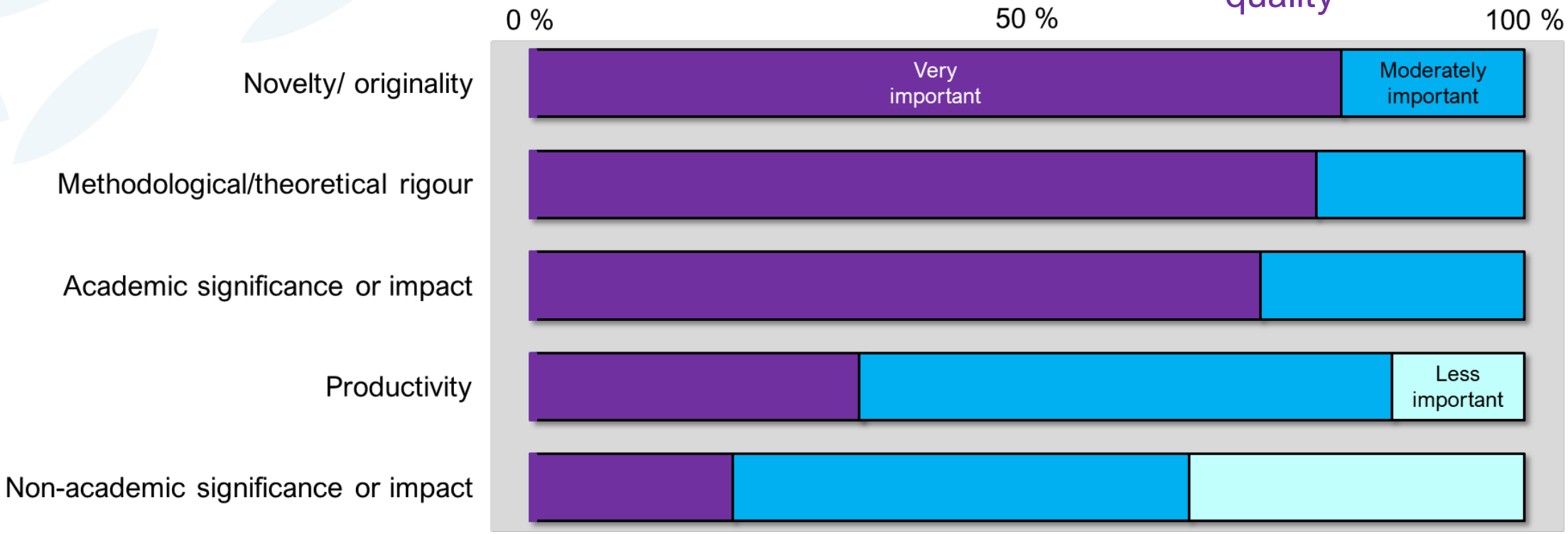
How do organisations understand research quality?

Novelty/originality
Methodological/Theoretical rigour
Academic Significance/Impact



of organisations do not have a formal definition of research quality



www.scieur.org/assessment

N = 39

Main Challenges that research organisations face during assessment processes

1. Research organisations describe the need for continued effort in **combating all forms of bias, discrimination, and unfair treatment**

2. Pressure exerted on assessment systems by limited funds and/or positions makes distinguishing and **ranking proposals/applicants of similar quality** (particularly around funding thresholds) more difficult.

3. The **cost and efficiency of assessment systems** is a major challenge (particularly for those that have moved towards more **qualitative assessments**).

4. **Balancing the effort and time of both applicants and reviewers**.

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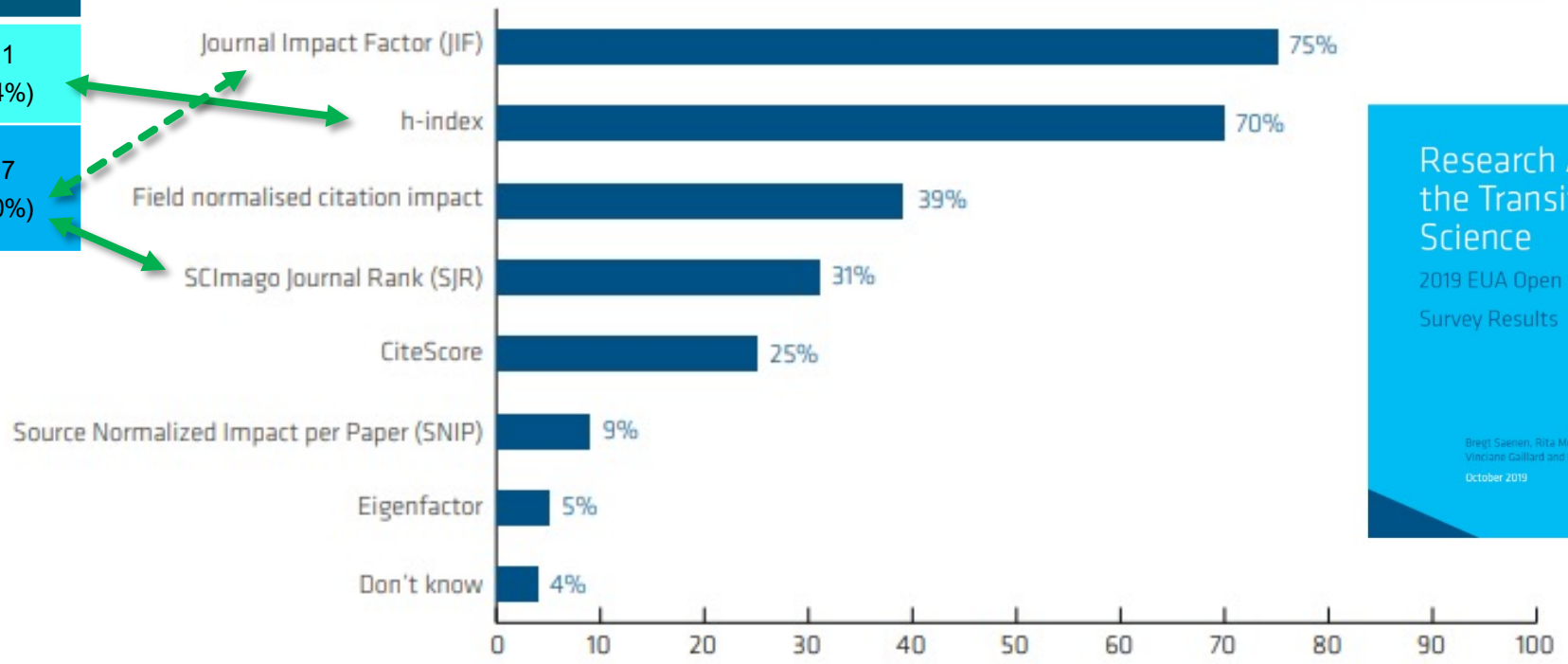
What indicators are used by the reviewers?
… and how important are they?

	Currently using
H-Index	11 (34%)
No. publications high-ranking journals	17 (50%)

Predominance of standard, countable indicators

Figure 11 – Publication metrics used for research careers

Based on survey question 8a, multiple-choice (cf. Annex 1). Number of respondents: 185/186



19 Databases such as Web of Science, Scopus, Google Scholar, etc. were not offered as answer options in favour of actual publication and citation metrics.

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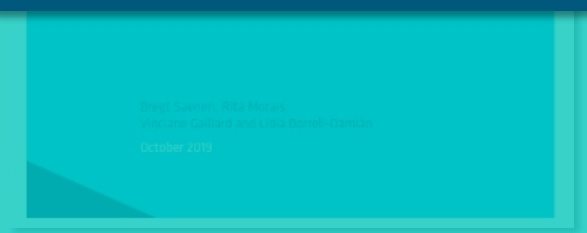
Current state of play

More collective action is needed to safeguard the sustainability and health of the system.

All stakeholders should be involved in the process of further change.

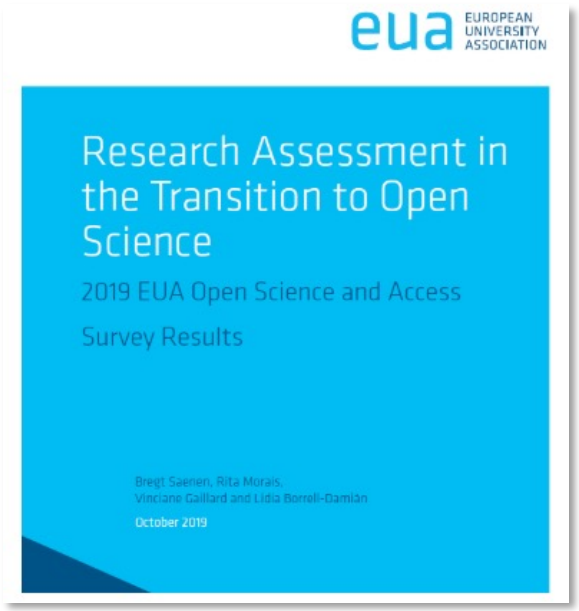
Reform should encourage mutual adaptation and shared responsibility, but maintain some degree of flexibility to account for the variety of approaches to assessment.

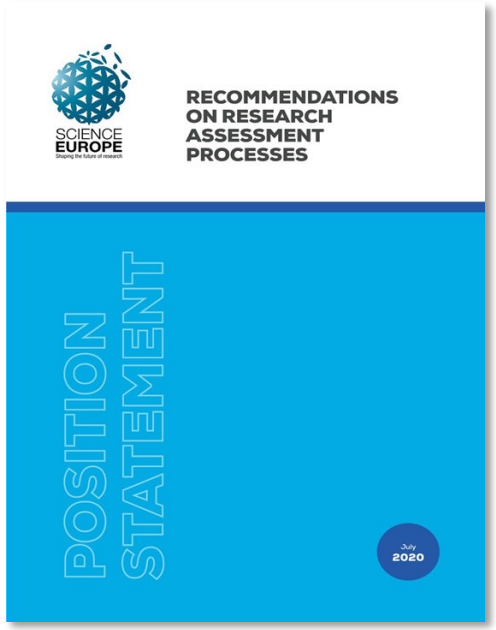


Science Europe and the European University Association Join Forces

Many commonalities are apparent in the findings and analyses of the two studies.

Assessment processes are well-established and focus heavily on published research output. Other activities are recognised to a varying extent, and open science practices are not widely incorporated into evaluation criteria.





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Next steps for Science Europe

Scoping Questionnaire on Research Culture and the values that underlie research systems.

Activity on the recognition systems of research (2021-2022)

To develop scenarios for possible recognition systems that reposition the values of quality research assessment systems centrally in the policies and practices of RFOs and RPOs.

To promote a broad ‘culture’ perspective across priority areas, linking topics of: team science, research integrity, transdisciplinarity to foster healthy and quality-driven research cultures across Europe.

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FINAL REMARKS ON OPEN SCIENCE: OPPORTUNITIES FOR THE FOOD SECTOR?

- Open Science is today the best way to ensure optimal use of research investments and their results. Surely, it requires investments and changes in the way research is conceived, performed and assessed.
- It benefits the research mission, enhancing its processes and transparency of the research activity.
- It fosters inter/intra/supra/multi/disciplinary.
- Research related to Covid-19 has demonstrated that it is possible to generalise Open Science to other fields.
- Concerted action by research and societal stakeholders is necessary to make Open Science the ‘new normal’ in research processes.

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