Credit: Swiss National Science Foundation

International trends for open access and open science

Kathleen Shearer, Executive Director, COAR (Confederation of Open Access Repositories)

COAR
Confederation of Open Access Repositories

Working for a sustainable, global knowledge commons based on a network of open access digital repositories

Who is COAR?
- Over 100 members and partners from 35 countries in 5 continents
- Universities, libraries, government agencies, open access organizations, not-for-profit organizations, and platform developers
- Diverse perspectives that share a common vision

Major Activities

International voice
Raising the visibility of repository networks as key infrastructure for open science

Alignment and interoperability
Building a global knowledge commons through harmonization of standards and practices

Cultivating relationships
Supporting an international community of practice for repositories and open access

Building capacity
Advancing skills and competencies for repository and research data management

Adopting value-added services
Promoting the use of web-friendly technologies and new functionalities for repositories

Contacts Us
http:// www.coar-repositories.org
Email: office@coar-repositories.org
Phone: + 49 551 39 22215
Fax: + 49 551 39 5222
Facebook: COAReV
Twitter: @COAR_eV

How to participate?
- Organizations can join COAR for €500 Euros per year (about $600 US)
- Join as a single, consortial, or special member or partner
- Download the membership application (https://www.coar-repositories.org/about/join/become-a-member)

What is Open Access/Open Science?

- Open access is free and immediate access to research publications

- Open science is free and immediate access to data and other types of research outputs

Why Open Access / Open Science?

OPEN SCIENCE

OPEN ACCESS

OPEN EDUCATIONAL RESOURCES

OPEN SOURCE

EQUITY, DIVERSITY, INCLUSION

OPEN DATA

CITIZEN SCIENCE

What do we mean when we talk about Open Science?

Image courtesy of Robin Champieux

☑ more discoveries

☑ more innovation

☑ better science

☑ better education

☑ economic development

☑ social improvements

International Trends

Policy

Open Access Policies

Funders by Country

Sherpa-Romeo – March 5, 2019
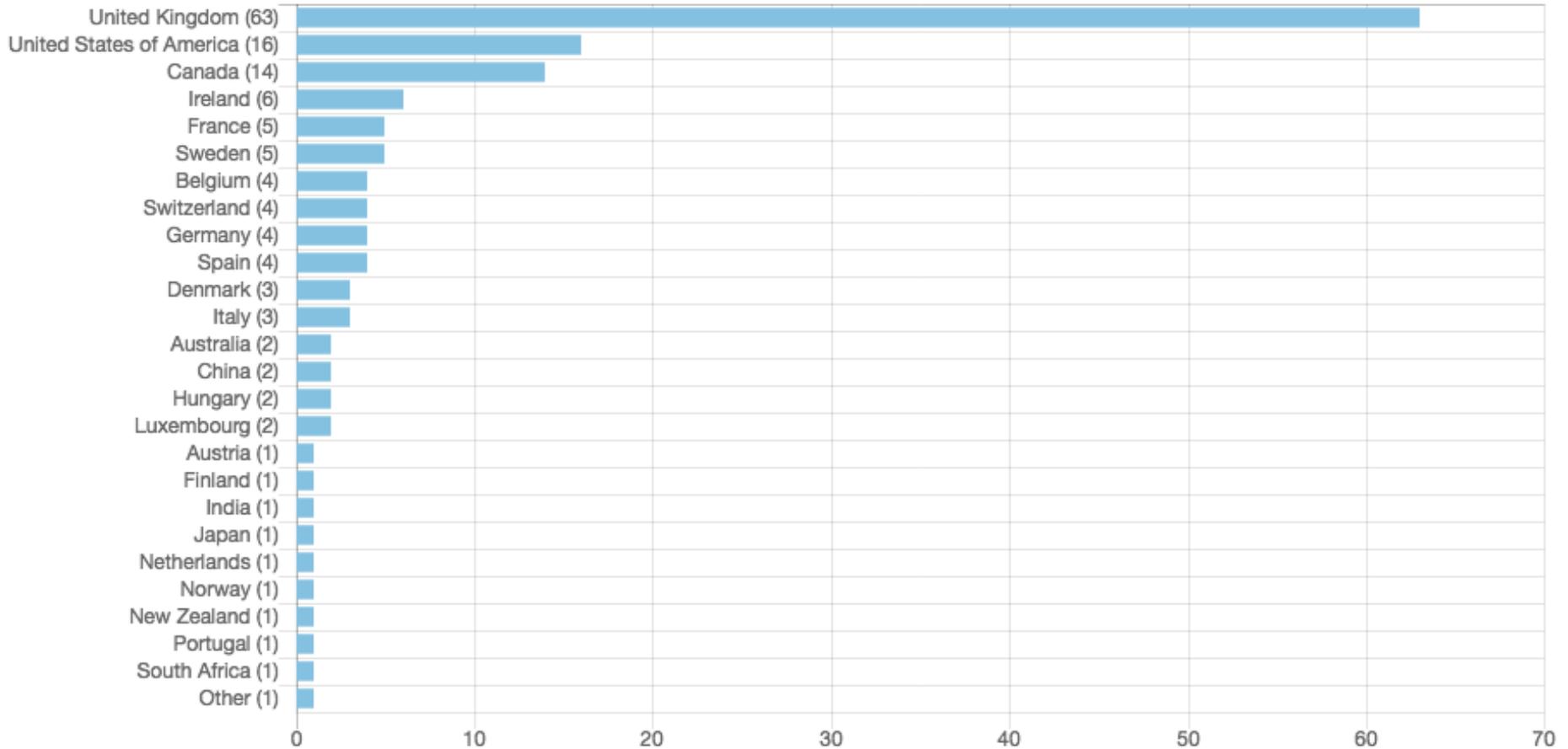
Latin America: <u>Argentina</u>, <u>Mexico</u> and <u>Peru</u> all have laws requiring open access to government funded research

Acceso abierto en México: Reformas y adiciones a la ley

👤 Saul Equihua   📅 22 mayo, 2014   💬 6 comentarios

El pasado martes 20 de mayo de 2014, México a dado un gran paso al adicionar y reformar la Ley de Ciencia y Tecnología, la Ley General de Educación y la Ley Orgánica del Consejo Nacional de Ciencia y Tecnología, para promover el Acceso Abierto.

Mismas que derivan de una iniciativa de Ley para México sobre Acceso Abierto resultantes de investigación financiada con fondos públicos(1) y que fue promovida por la Senadora Ana Lilia Herrera e instituciones como la Universidad Autónoma del Estado de México.

Institucional   Senadores   Comisiones   Noticias

PODER EJECUTIVO

PRESIDENCIA DEL CONSEJO DE MINISTROS

Aprueban el Reglamento de la Ley Nº 30035, Ley que regula el Repositorio Nacional Digital de Ciencia, Tecnología e Innovación de Acceso Abierto

DECRETO SUPREMO Nº 006-2015-PCM

EL PRESIDENTE DE LA REPÚBLICA

CONSIDERANDO:

Que, mediante Ley Nº 30035, se establece normativo del Repositorio Nacional Digital de Tecnología e Innovación de Acceso Abierto;
Que, el Repositorio Nacional Digital de Tecnología e innovación de Acceso Abierto, acceso, difusión y desarrollo del conocimiento

Artículo 3.- Vigencia
El presente Decreto a partir del día siguiente Oficial El Peruano.

Artículo 4.- Refrend
El presente Decreto Presidenta del Consejo d

Dado en la Casa de C días del mes de enero d

OLLANTA HUMALA T
Presidente Constituc

ANA JARA VELÁSQU
Presidenta del Conse

SENADO
ARGENTINA

f   𝕏   ◯   ▶   @

Actividad Legislativa	Participación Ciudadana	Transparencia

Home / Actividad Legislativa / Búsqueda de Proyectos / Datos del Expediente   A+ A− | 🖨 | ↩ | ✂ |

NÚMERO DE EXPEDIENTE 26/12

N°	Origen	Tipo	Extracto
26/12	Cámara De Diputados	Proyecto De Ley	PROYECTO DE LEY EN REVISION ESTABLECIENDO LA OBLIGATORIEDAD DE DESARROLLAR REPOSITORIOS DIGITALES DE ACCESO ABIERTO, PROPIOS O COMPARTIDOS, POR PARTE DE LOS ORGANISMOS E INSTITUCIONES PUBLICAS QUE COMPONEN EL SISTEMA NACIONAL DE CIENCIA, TECNOLOGIA E INNOVACION.

Texto Original   Texto Definitivo   Trámite Legislativo   Etapa Diputados

Europe: Plan S
immediate open access by 2020 with no embargoes

cOAlition S

cOAlition S

**Making
Open Access
a reality
by 2020**

A DECLARATION OF COMMITMENT
BY PUBLIC RESEARCH FUNDERS

http://scieur.org/coalition-s

"By 2020 scientific publications that result from research funded by public grants provided by participating national and European research councils and funding bodies, must be published in compliant Open Access Journals or on compliant Open Access Platforms."

Plan S Signatories

- Austrian Science Fund
- Academy of Finland
- French National Research Agency
- Science Foundation Ireland
- National Institute for Nuclear Physics (Italy)
- National Research Fund (Luxembourg)
- Netherlands Organisation for Scientific Research
- Research Council of Norway
- National Science Centre Poland
- Slovenian Research Agency
- Swedish Research Council for Health, Working Life and Welfare
- Swedish Research Council for Sustainable Development
- UK Research and Innovation UKRI
- European Commission

Local vs. global

Science is global!

At the Heart of Global Research and Education Networking
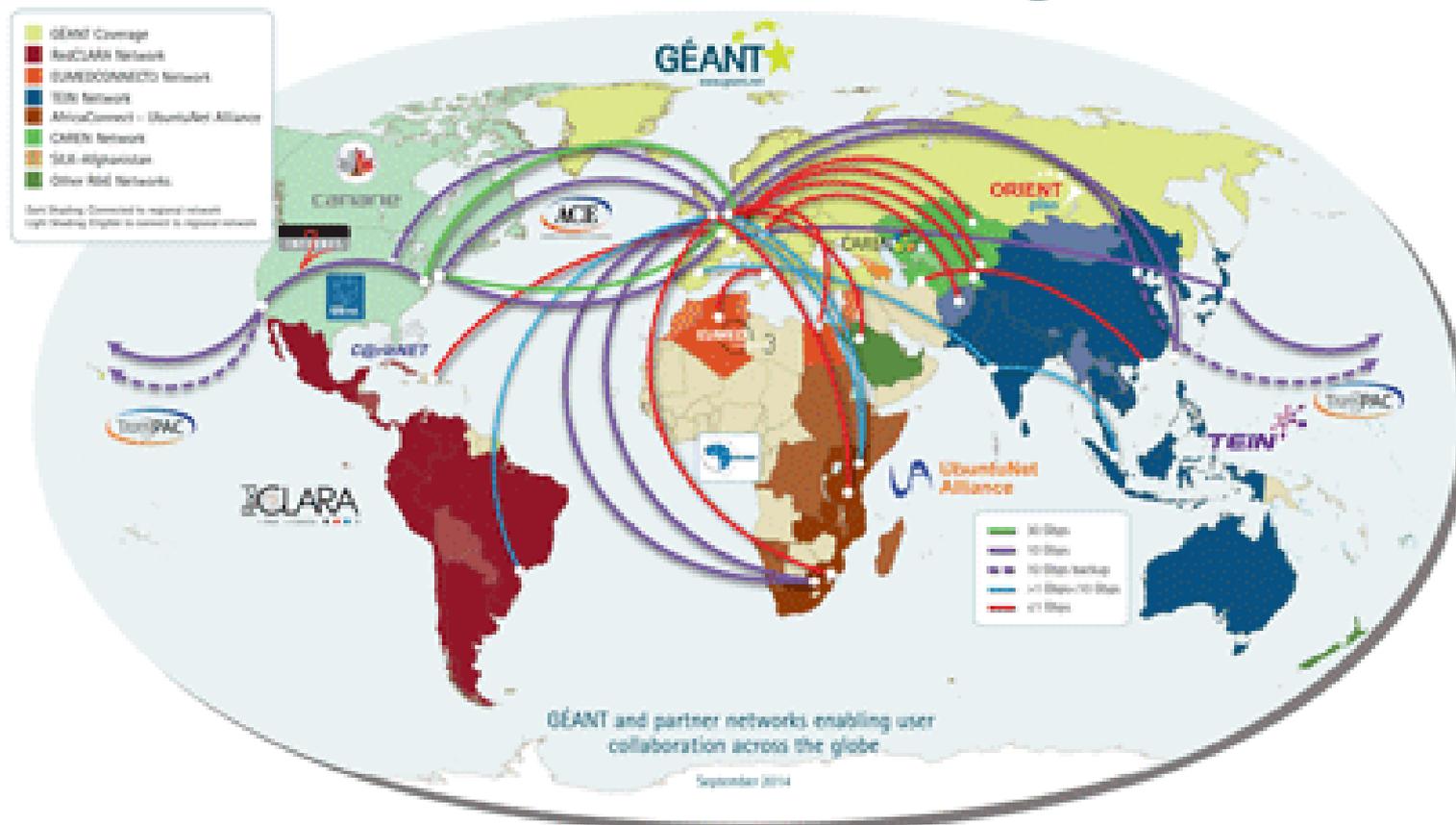
Climate change: "Between 2008 and 2014, more than 25 million people per year were uprooted because of rapid-onset disasters such as floods and storms." (International Displacement Monitoring Center)

But, science is also local!

virology blog
About viruses and viral disease
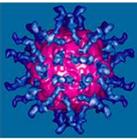
Science publishing has a Zika problem
19 MAY 2016
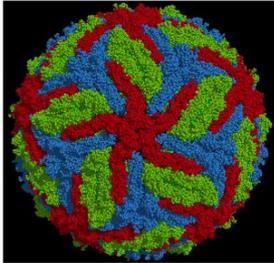
Science publishing has a problem. I agree with Nobel Laureate Randy Schekman, who wrote that prestigious science journals like Cell, Nature, and Science – which he calls 'luxury journals' – are damaging science. The succession of articles on Zika virus nicely illustrates this problem.

The big three in science publishing – Science, Nature, and Cell – have published many papers on Zika virus since the

Nepalese research outputs - with Major Clusters

Number of publications: 3,011   Years: 2004-2013

Canadian Journal Of Native Studies

The *Canadian Journal of Native Studies* is a highly recognized journal in the field of Native Studies. It began as a publication of the Society for the Advancement of Native Studies which is no longer in operation and whose founder; Sam Corrigan; was the Chief Editor from 1981-2008. it comes out on a bi-annual basis, and publishes original research which is refereed by peer review.

As a general focus, the journal publishes anthropological, historical, sociological, political, legal, education and cultural issues affecting First Nations people. Although the majority of articles deal with Indigenous peoples in Canada, it also publishes articles dealing with Indigenous peoples world-wide.

Hokkaido University, Sapporo, Japan

Word maps created using VosViewer, a *free software* (Leiden University) , Vaby Eck & Waltman (2010)

Commercial vs. Academy-owned
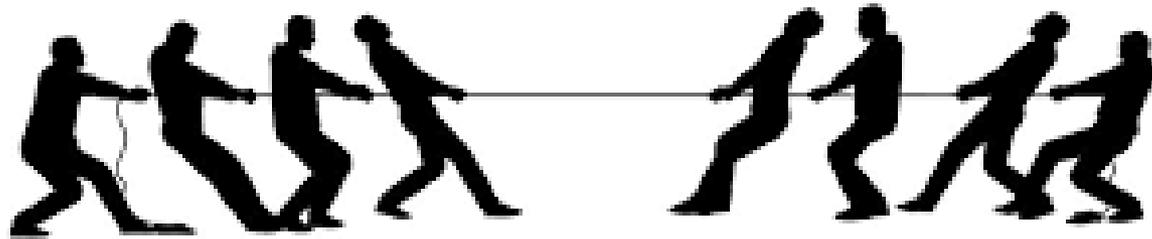
The access problem

TABLE 1: AVERAGE 2017 PRICE FOR SCIENTIFIC DISCIPLINES

DISCIPLINE	AVERAGE PRICE PER TITLE	DISCIPLINE	AVERAGE PRICE PER TITLE
Chemistry	$4,773	Botany	$2,053
Physics	4,369	Zoology	1,988
Engineering	3,408	Math & Computer Science	1,971
Biology	2,917	Geography	1,742
Food Science	2,567	Health Sciences	1,736
Geology	2,381	Agriculture	1,666
Technology	2,234	General Science	1,556
Astronomy	2,071		

SOURCE: LJ PERIODICALS PRICE SURVEY 2017

Bid deals lock-ins

Global results of the analysis

	Out of 50,000 journals
Used journals	16,816
Cited journals	9,075
Journals mentioned by our community in the survey	8,060
subtotal	**26,843 unique titles used/cited/mentioned**
«essential titles» (80%)	4,852
Additional titles (from validation by departments)	1,041
subtotal	**5,893 unique essential titles**
2,940 titles with quantitative approach	**2,953 titles from community consultation**

4

Slide from Stéphanie Gagnon, Université de Montréal Libraries (and thanks to Richard Dumont)

Elsevier's profits swell to more than £900 million

But 'risks' of open access and a shift away from subscription model could halt growth, publisher's financial results reveal

February 20, 2018

By David Matthews
Twitter: @DavidMJourno

> 1.2 billion US

Hand holding £20 notes

Source: iStock

theguardian

The long read

Is the staggeringly profitable business of scientific publishing bad for science?

YES!

The flip? The European Strategy

Sweden stands up for open access – cancels agreement with Elsevier

Pressmeddelande · Maj 16, 2018 08:45 CEST

Large science publisher Elsevier does not meet the requirements of S and research institutes.

Talks collapse as Germany rejects 'unacceptable' Elsevier offer

Publisher says it remains 'committed' to striking a deal, but question mark hangs over institutions' continuing access

Norway and Elsevier Agree on Pilot National Licence for Research Access and Publishing

SIST ENDRET: 23.04.2019   DEL: (in)(f)(✉)(✓)

Negotiating team from Unit: (f.l.) Katrine Weisteen Bjerde, Nils Andenæs, Tore Nilsen and Nina Karlstrøm.

Kathleen Shear

Open access via Article Processing Charges?

Figure 9: Average APC

Jisc 2016: Average APC cost was about £1745 (~$2400 US)

The widespread dissemination of research outputs contributes to all 17 sustainable development goals

But our system for sharing and disseminating research must also be sustainable

FOAA
Fair Open Access Alliance

The Fair Open Access Principles

1. The journal has a transparent ownership structure, and is controlled by and responsive to the scholarly community.

2. Authors of articles in the journal retain copyright.

3. All articles are published open access and an explicit open access licence is used.

4. Submission and publication is not conditional in any way on the payment of a fee from the author or its employing institution, or on membership of an institution or society.

5. Any fees paid on behalf of the journal to publishers are low, transparent, and in proportion to the work carried out.

Published on May 9, 2016

Joint COAR-UNESCO Statement on Open Access

Open access is a global trend, with policies and practices rapidly being adopted around the world. As the world enters a new era of sustainable development, openness and inclusiveness in scientific research will become increasingly critical. While most governments agree on the underlying principles of open access, there is significant diversity in the way countries have approached its implementation. These differences reflect a range of perspectives, values, and priorities of the different regions. Clearly, there is no "one-size-fits-all" solution to implementing open access.

Beyond the journal

PHILOSOPHICAL TRANSACTIONS.

Giving some

ACCOUNT

OF THE

Present Undertakings, Studies and Labours

OF THE

INGENIOUS,

In many

Considerable Parts of the World.

VOL. XXII. For the Years 1700 and 1701.

LONDON,

Printed for *S. Smith* and *B. Walford*, Printers to the *Royal Society*, at the *Prince's Arms* in St *Paul's* Church-yard. MDCCII.

PHILOSOPHICAL TRANSACTIONS OF THE ROYAL SOCIETY A

The promises of gravitational-wave astronomy

Discussion meeting issue organised and edited by Iain Martin, Nils Andersson, Carole Mundell and James Hough

Unbundling the scholarly journal

5 functions of scholarly publishing:

1. Registration
2. Certification
3. Awareness
4. Archiving
5. Rewarding
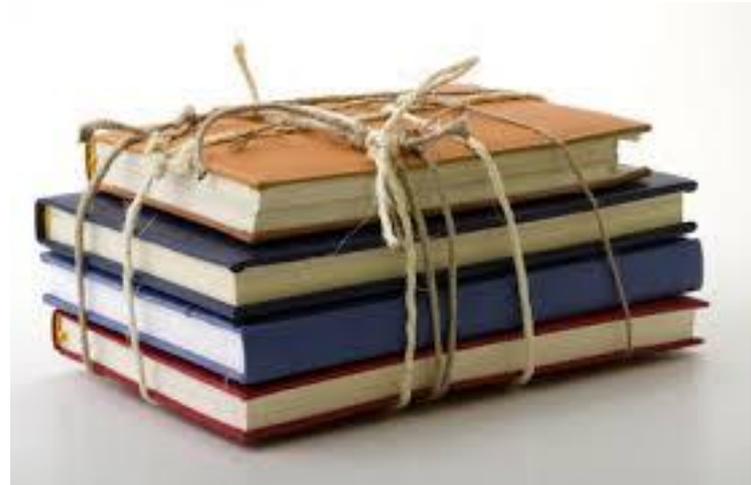
Innovations in scholarly publishing

Figure 1 - PubFAIR high level architecture
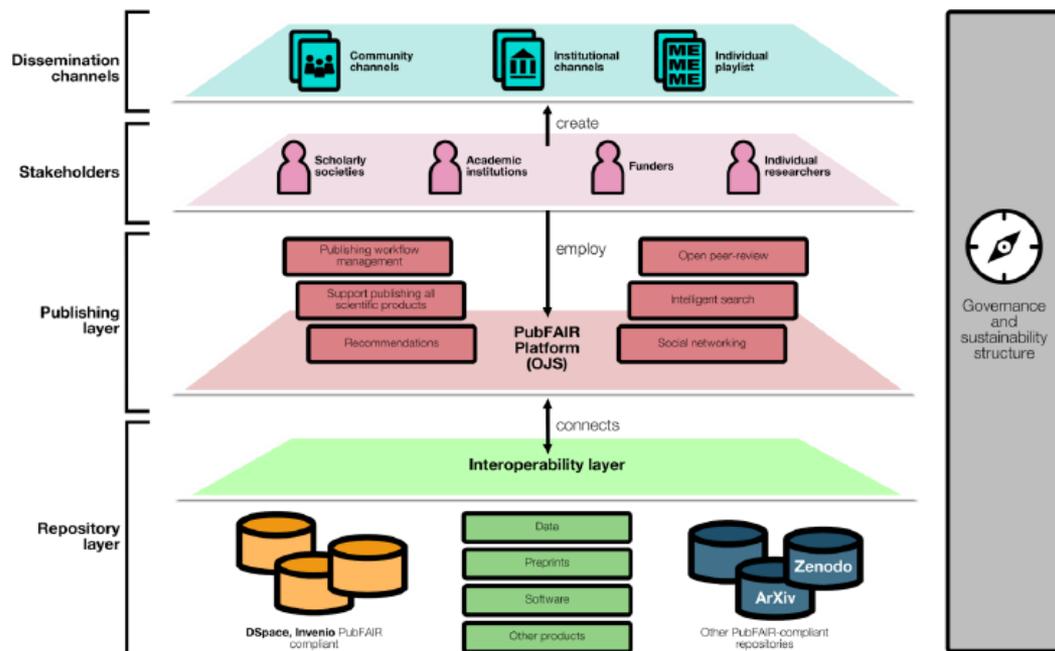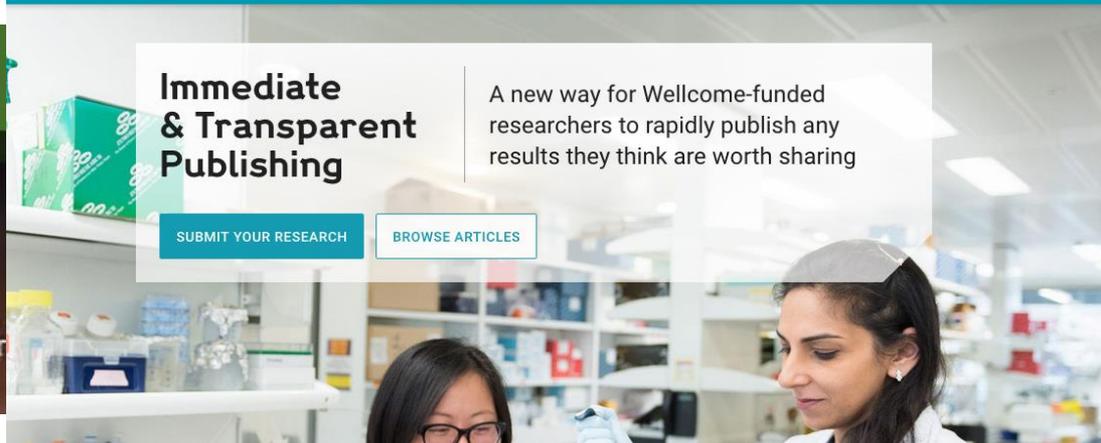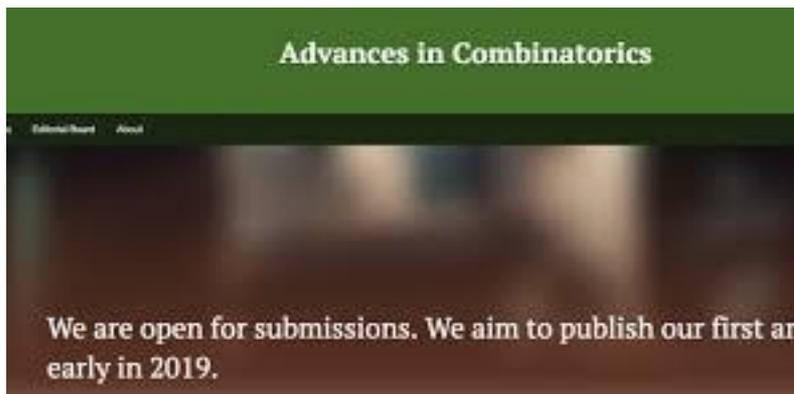
Research data as a first class citizen

Data as first class research outputs

CHALLENGE

Wider access to scientific facts and knowledge helps researchers, innovators and the public find and re-use data, and check research results:

offers better value for EU research funds

a public benefit

encourages research across scientific fields

essential for solving today's complex societal challenges

SOLUTION

Horizon 2020 already mandates open access to **all scientific publications**

From 2017, **research data** is **open by default,** with possibilities to **opt out**

Addressing the Incentive System

The way we assess research contributions is too heavily dependent on publishing in the international journals

ARWU — ACADEMIC RANKING OF WORLD UNIVERSITIES SINCE 2003

http://www.shanghairanking.com/

ARWU is an influential ranking list of world universities compiled by Shanghai Jiao Tong University (SJTU).

Each year, the top 500 universities in the world are ranked based on a set of criteria:

Criteria	Indicator	Weight
Quality of Education	Alumni of an institution winning Nobel Prizes and Fields Medals	10%
Quality of Faculty	Staff of an institution winning Nobel Prizes and Fields Medals	20%
	Highly cited researchers in 21 broad subject categories	20%
Research Output	Papers published in Nature and Science (not for institutions specialized in humanities and social sciences)	20%
	Papers indexed in Science Citation Index-expanded and Social Science Citation Index	20%
Per Capita Performance	Per capita academic performance of an institution	10%
Total	-	100%

From ARWU website: http://www.shanghairanking.com/ARWU-Methodology-2017.html

Peer review and scientific publishing

Nobel winner declares boycott of top science journals

Randy Schekman says his lab will no longer send papers to Nature, Cell and Science as they distort scientific process

Ian Sample, science correspondent

🐦 @iansample

Monday 9 December 2013 19.42 GMT

"The pressure to publish in "luxury" journals encourages researchers to cut corners and pursue trendy fields of science instead of doing more important work."

(Randy Schekman, University of California, Berkeley)

DORA

Follow us on twitter
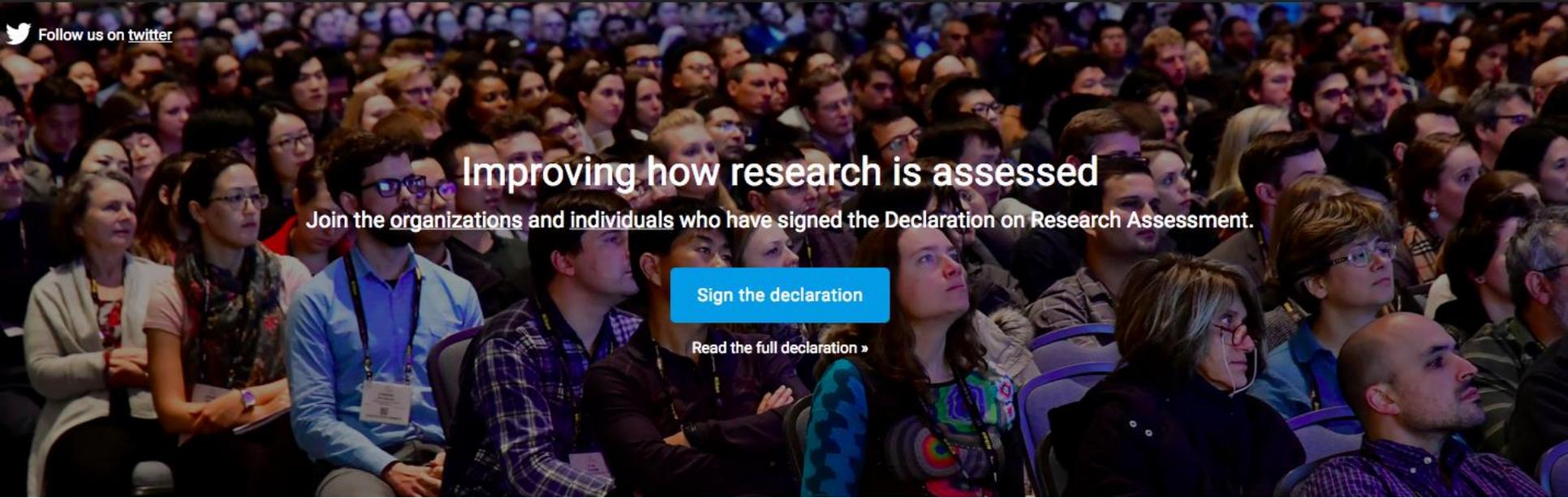
Improving how research is assessed

Join the organizations and individuals who have signed the Declaration on Research Assessment.

Sign the declaration

Read the full declaration »

Declaration on Research Assessment (DORA)

General Recommendation

1. Do not use journal-based metrics, such as Journal Impact Factors, as a surrogate measure of the quality of individual research articles, to assess an individual scientist's contributions, or in hiring, promotion, or funding decisions.

Five prerequisites for a sustainable knowledge commons

1 Strengthen local institution-based services that preserve and provide access to diverse and valuable research products

2 Connect local services to national, regional and global networks through the adoption of interoperable standards and practices

3 Begin to redistribute funds towards services that add value to the networks, such as peer review

4 Improve the processes used to evaluate research contributions to include a wider range of qualitative and quantitative metrics and indicators

5 Adopt the principles and governance that will ensure the commons reflects the needs of the global research community

COAR
Confederation of Open Access Repositories

Supporting regional activities and international alignment

Thank you and questions

Examples of Regional Collaborations

If you want to go fast, go alone. If you want to go far, go together. ~African Proverb
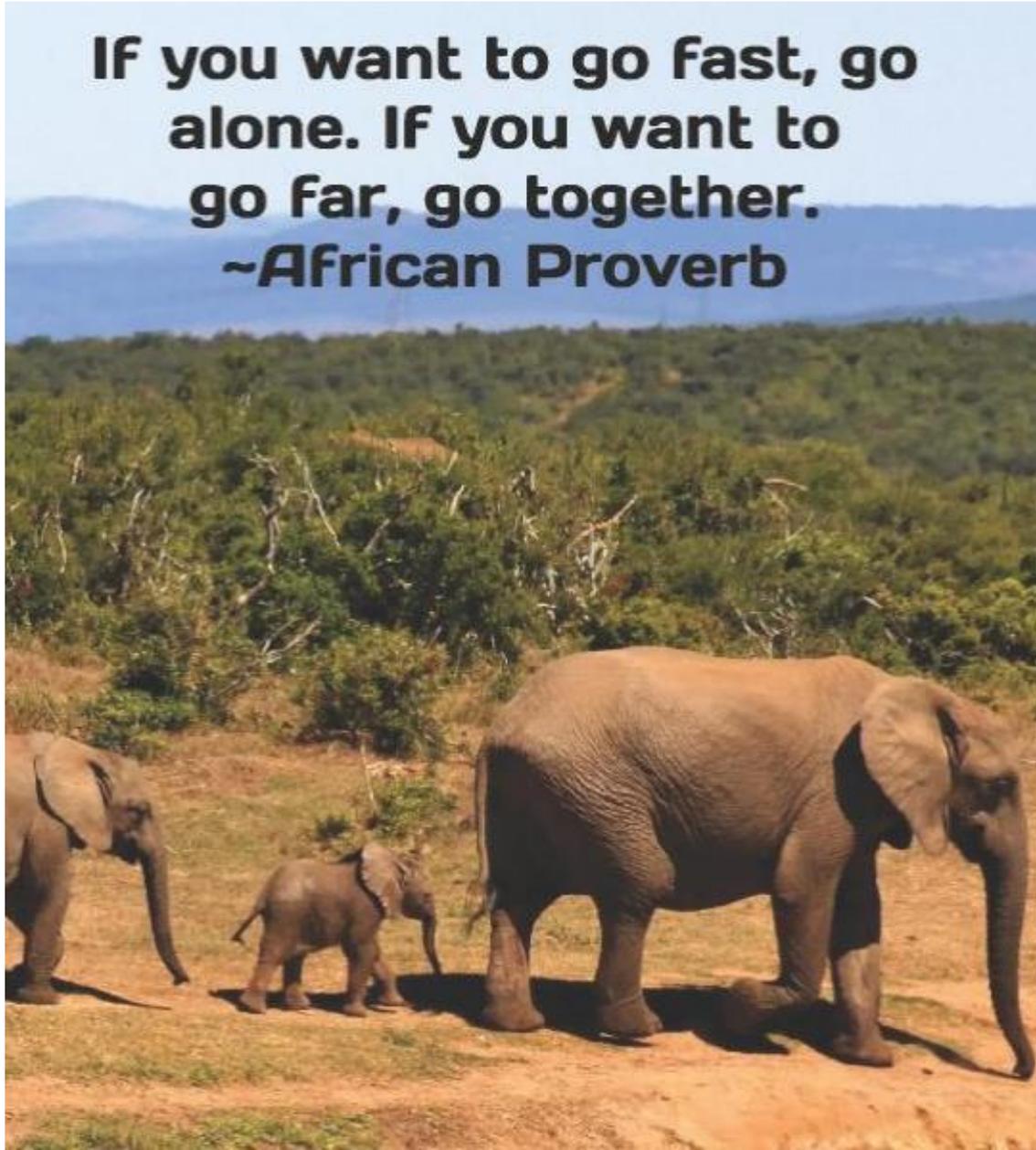
# Model for a regional discovery service

Members (Council).

Transfer interoperable platform
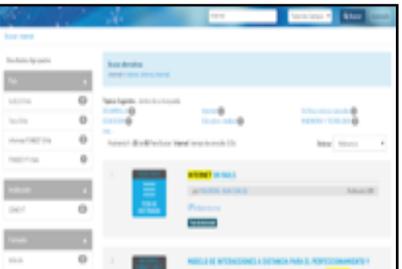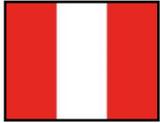
New 3.3 version

- Reporting errors for IRs.
- Simplified Administration.
- LR version is the same as nodes.
- It supports current and future guidelines.
- Potential data harvester.
- **In Process: México, Panamá, Portugal**

LR Aggregation Model

LAReferencia Aggregator Node
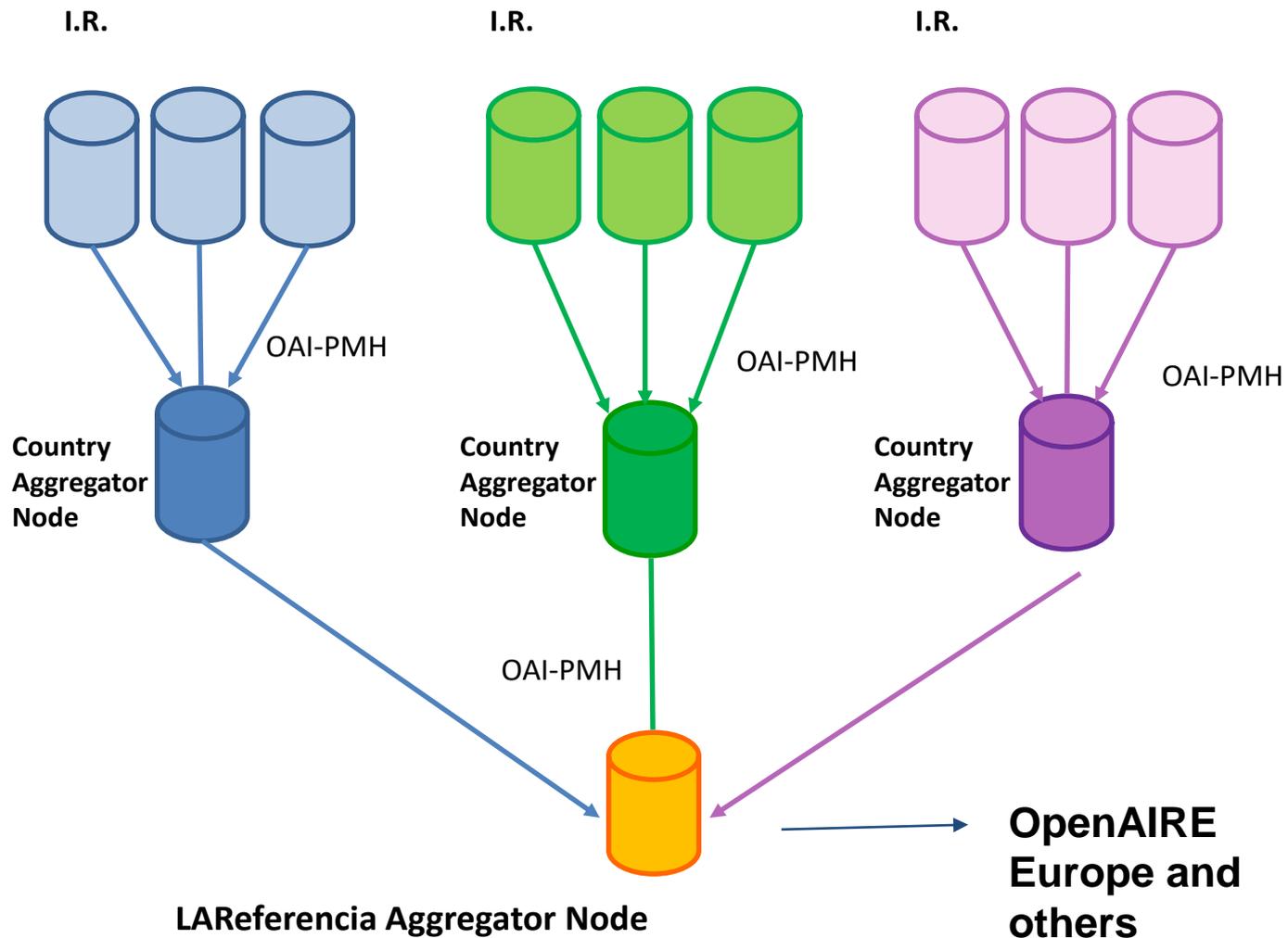
Repository Hosting in Japan

Implementation Rate of IRs in JAPAN

**Almost all national universities have their own IRs,
while the implementation rate of
other public/private universities hovers at**

20-30%

in 2012

Matters Surrounding IRs in Japan

- Ministry of education and research in Japan mandated the digitalization of doctoral dissertations and their dissemination over the network.
  - In 2013 when the above was stated, there still were about 200 universities which does not have IRs.
- There are more than 700 HEs in Japan

- The universities which have already owned their IRs were also struggling with how to update and maintain the system in the sustainable manner.

JAIRO Cloud

- Background
  - Limited resources and less technical knowledge hamper implementation of IR especially in small universities.
  - JAIRO Cloud provides a shared instance of IR system on the virtual server hosted by NII since April 2012.

- Service Architecture
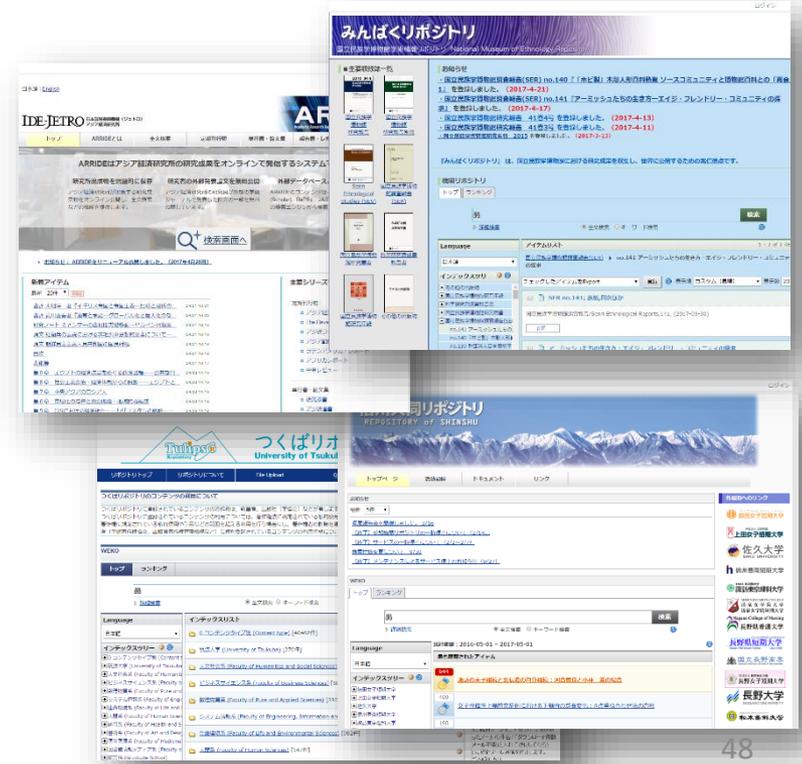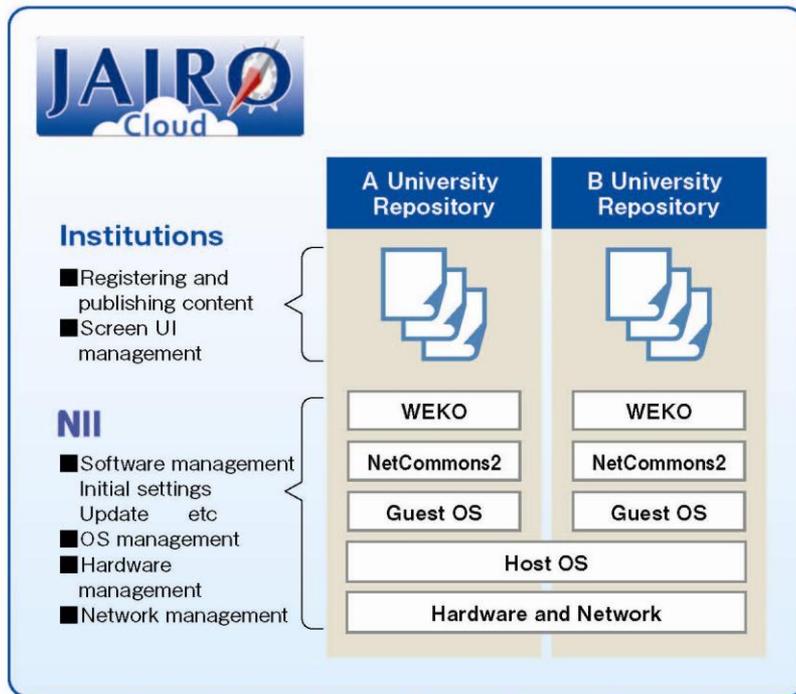
Number of Institutional Repository in Japan

829 IRs

Legend:
- by JAIRO Cloud: Pilot Operation
- by JAIRO Cloud: Production Operation
- by University On-premise System

Y-axis: Number of Repositories

X-axis: Year

Year	On-premise	Production	Pilot
Mar-05	2		
Mar-06	10		
Mar-07	58		
Mar-08	101		
Mar-09	144		
Mar-10	193		
Mar-11	228		
Mar-12	260		
Mar-13	284	73	
Mar-14	301	130	
Mar-15	316	210	
Mar-16	310	288	
Mar-17	285	396	
Mar-18	256	498	
Sep-18	241	527	61
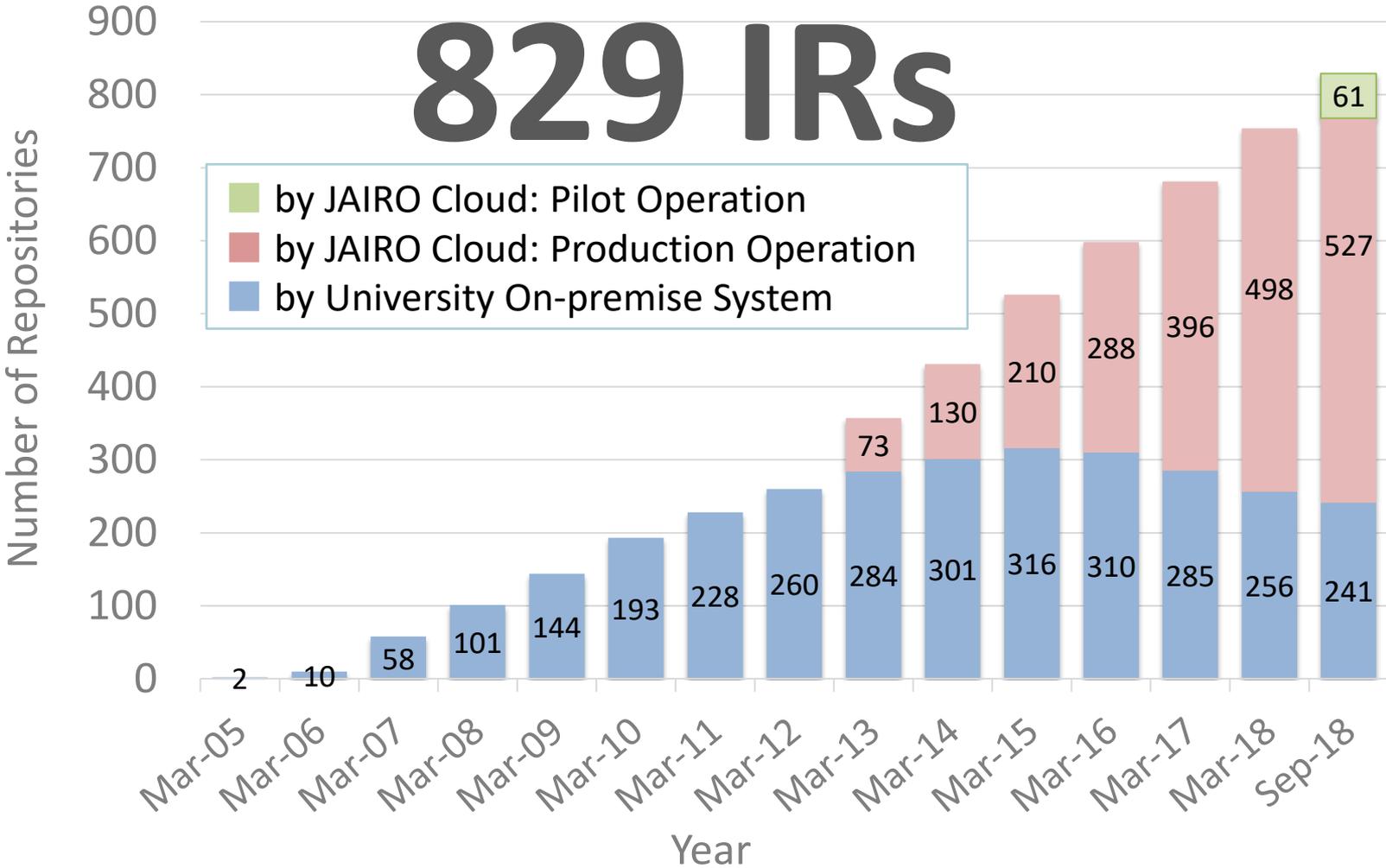
NII and WACREN Collaboration

Data Curation Network: A shared Staffing Model for Data Curation

DATA CURATION NETWORK

The Data Curation Network (DCN) addresses the challenge of scaling domain-specific data curation services by **collaboratively sharing expert data curation staff across a network of partner institutions** and data repositories beyond what any single institution might offer alone. The DCN will ensure that institutional repositories (IRs) and non-profit data repositories **can draw from a pool of expert data curators for a wide variety of data types** (e.g., GIS, tabular spreadsheets, statistical survey, video and audio, software code, etc.) and discipline-specific data sets (e.g., genomic sequence, chemical spectra, qualitative survey, etc.) while also providing normalized curation practices and professional development training.

DATA CURATION NETWORK

Local DCN Partner Institution Workflow

Uncurated Data
Presenting scale and expertise challenges to individual institutions

Ingest → Appraise and Select → DCN → Facilitate Access → Preserve Long-Term →

Curated Data
At scale and with great efficiency through shared Data Curation Network
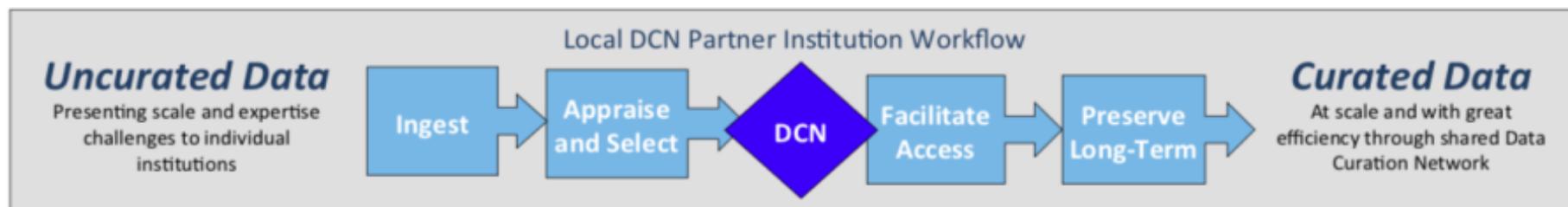
The Data Curation Network (DCN) serves as the "human layer" in the data repository stack and seamlessly connects local data sets to expert data curators via a cross-institutional shared staffing model. Our vision for a fully operational DCN is to:

1. provide expert data curation services for Network partners and (*forthcoming*) end users,
2. create and openly share data curation procedures and best practices,
3. support training and development opportunities for an emerging data curator professional community.

Collaborative approach to research data management

Network of Expertise

The Portage Network of Expertise is developing resources, expert advice, and practical help to assist with the management of research data at any stage throughout the data lifecycle. This expertise will be available in both English and French to anyone working in a Canadian university or research institution wanting to plan, manage, store, protect, share, and preserve digital research data.

Those providing assistance will be front-line support staff in libraries and data centres at Canadian universities, with the aim of building capacity and knowledge in these communities. In cases where an institution has no such support, help will be provided directly to a research team or individual researcher.

DMP Assistant

Sign In
If you have an existing account with DMP Assistant or previous version of DMP Builder.

Sign Up
New to DMP Assistant? Sign up today.

FRDR DFDR
FEDERATED RESEARCH DATA REPOSITORY
DÉPÔT FÉDÉRÉ DE DONNÉES DE RECHERCHE

Creating an integrated ecosystem

Developing Pan-Arab e-Infrastructure for Research and Education
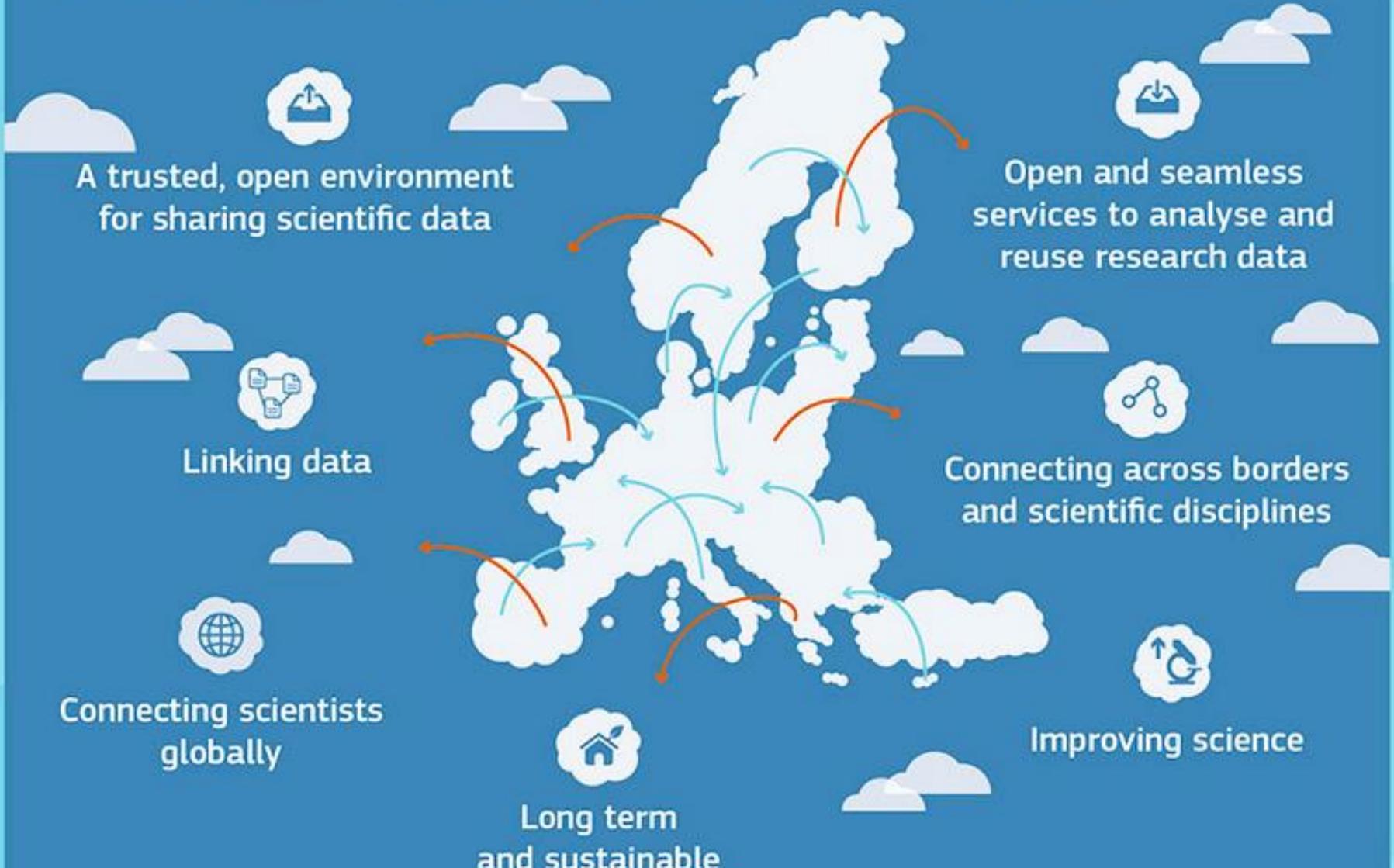
How can ASREN countries collaborate to help progress open science in the region?