

# *Global Biodiversity Information Facility*

Executive Secretary Joe Miller – GBIF Secretariat  
Dag Endresen - GBIF Norway, University of Oslo



Illustration: GBIF data portal

FAO Plant Treaty GLIS SAC meeting, Rome | 8-9 May 2023



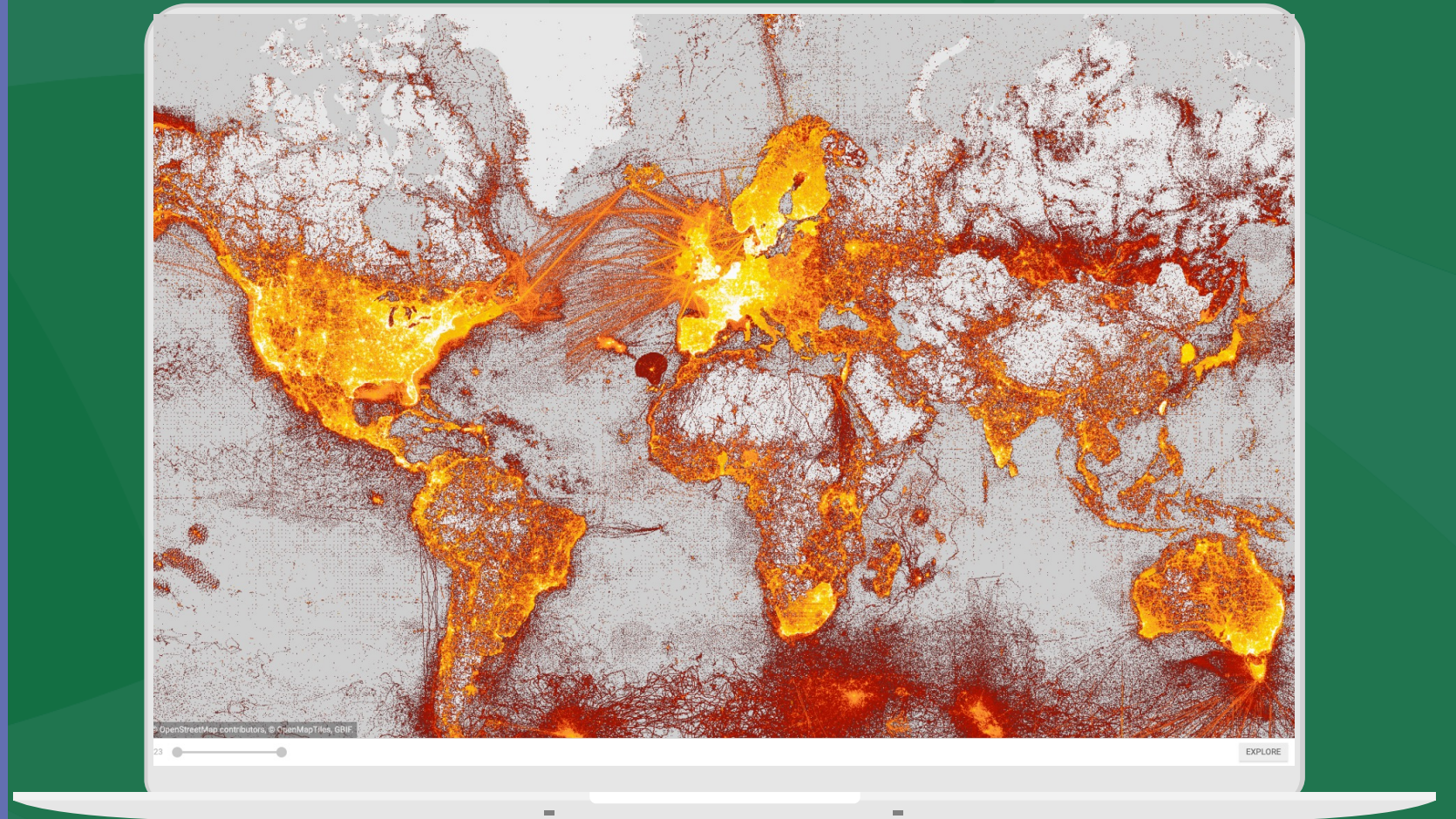
# WHAT IS GBIF?

**Intergovernmental** network and research infrastructure

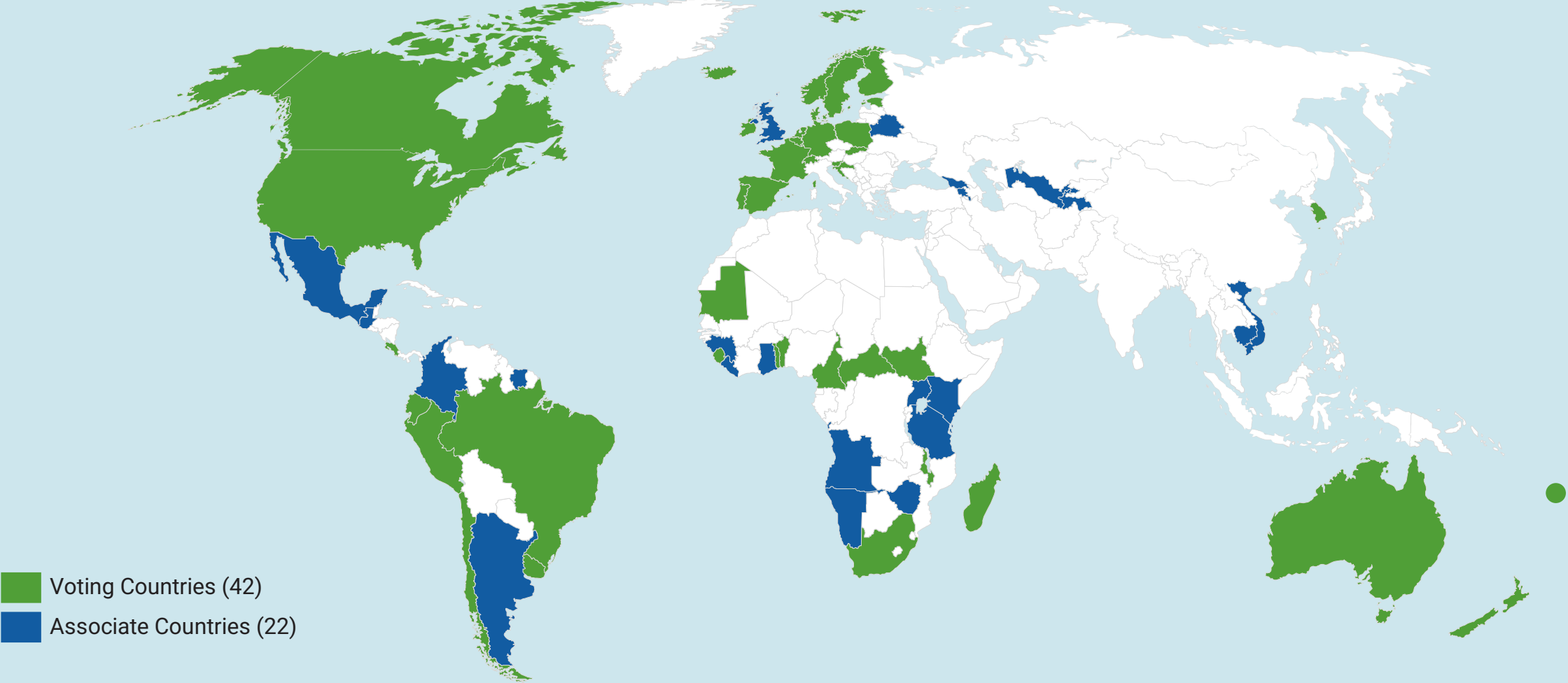
Provides anyone, anywhere, **free and open access to data** about all types of life on Earth

**Distributed** research data infrastructure based on **national participant NODES**

Secretariat in Copenhagen, Denmark

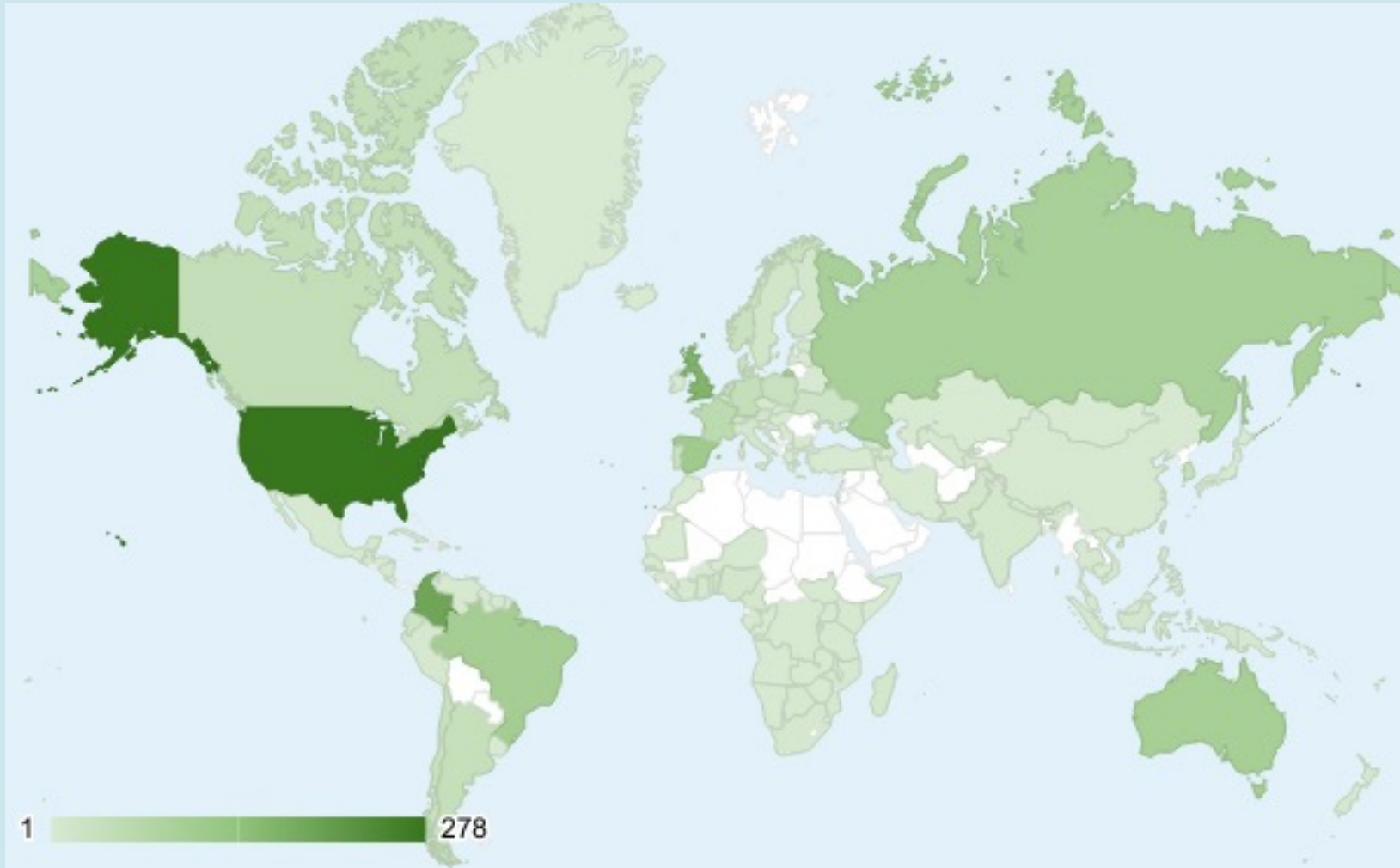


# GBIF PARTICIPANT COUNTRIES 5<sup>th</sup> May 2023



■ Voting Countries (42)  
■ Associate Countries (22)

# GBIF NETWORK OF DATA PUBLISHING INSTITUTIONS 8th May 2023



**134** countries/areas with institutions sharing data through GBIF

*Top 10 countries: number of data publishers*

1	United States	357
2	Colombia	200
3	United Kingdom	181
4	Spain	128
5	Russian Federation	128
6	Brazil	113
7	Australia	108
8	France	63
9	Canada	57
10	Netherlands	45
--	<i>Italy (observer)</i>	20



# PUBLISH PGRFA DATASETS WITH GBIF

**National GBIF nodes offer support** with professional data preparation and publication (data stewardship).

The GBIF community including the national GBIF nodes offer **training and capacity building** for open and FAIR data management.

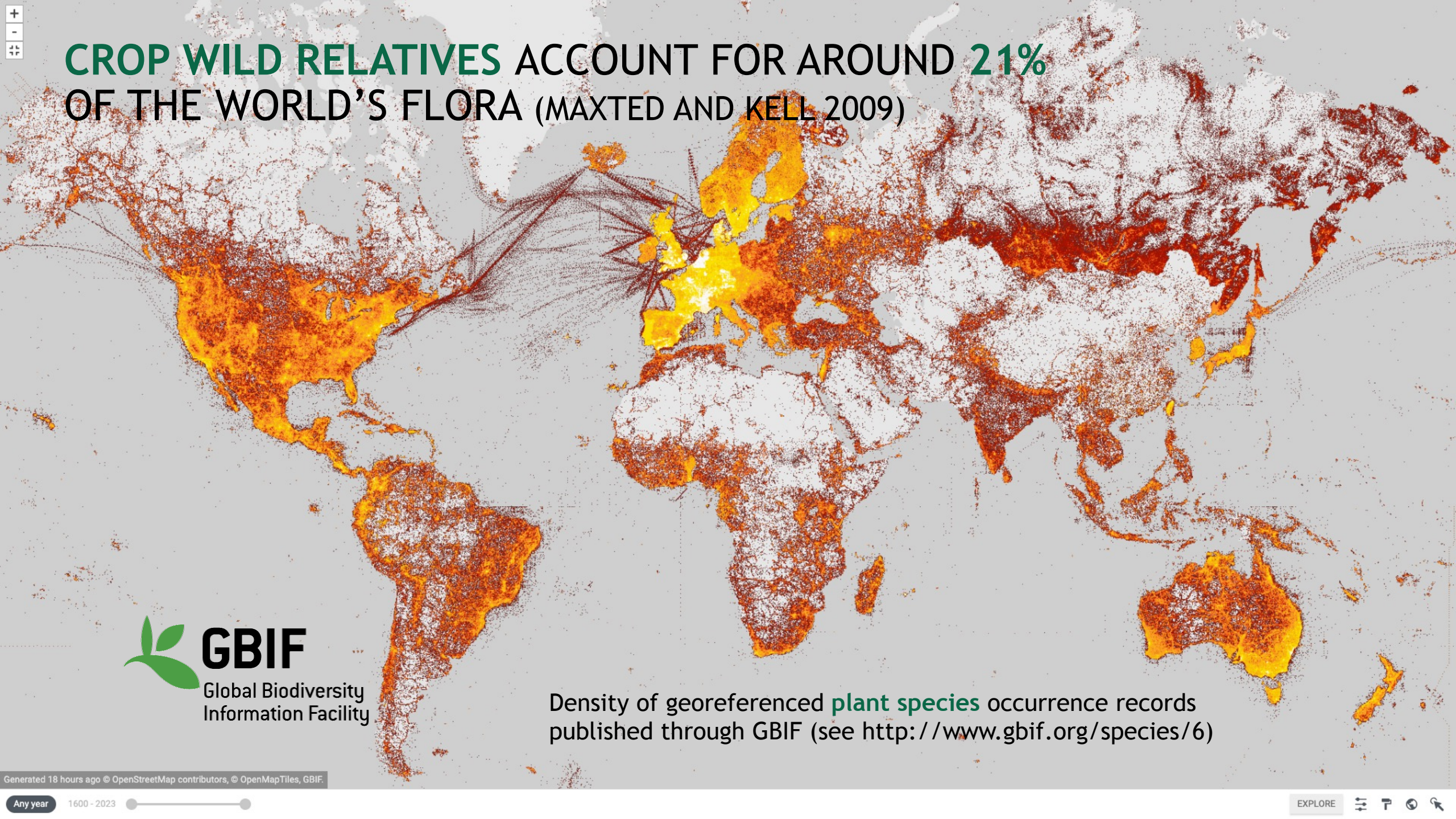
GBIF Nodes can support **national PGRFA focal** points with data services.

The Plant Treaty can collaborate with GBIF to **mobilize country membership** and data publication efforts.





**CROP WILD RELATIVES** ACCOUNT FOR AROUND **21%**  
OF THE WORLD'S FLORA (MAXTED AND KELL 2009)



Density of georeferenced **plant species** occurrence records published through GBIF (see <http://www.gbif.org/species/6>)



# IN SITU CWR DATA STREAMS ARE ALREADY FLOWING THROUGH GBIF

Many crop wild relatives conserved *in situ* are already an **integrated part of the GBIF** portal. (CWRs are an estimated 21% of the flora).

The Plant Treaty, PGRFA-, and GBIF experts (including national nodes) can work together on the **implementation of the descriptors for CWR** conservation *in situ*.

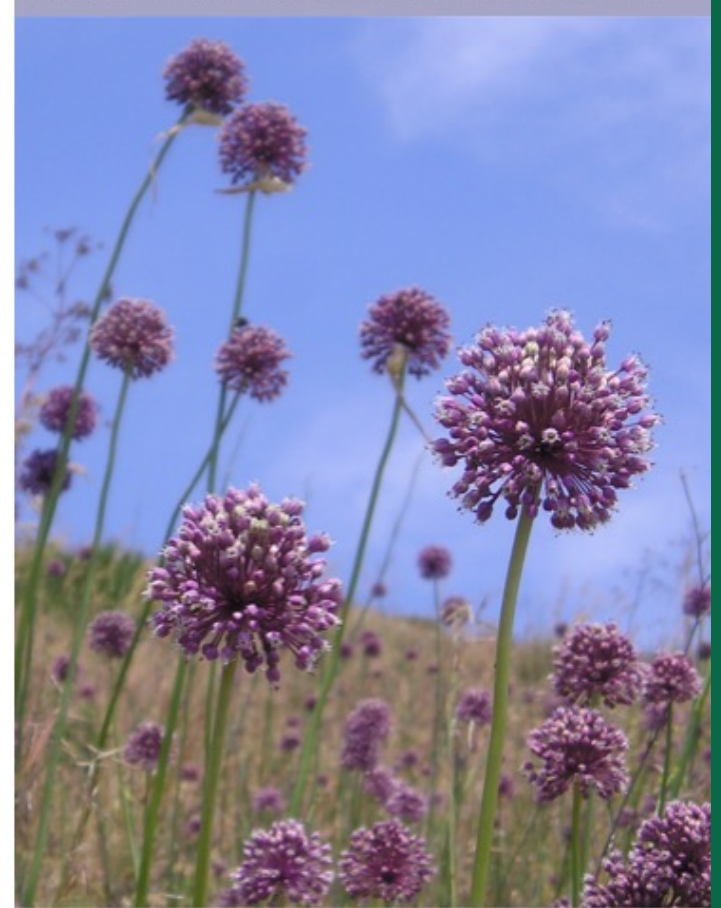
Including **harmonization with Darwin Core** and the development of extensions for data publishing services.

**Complementary strategic missions!!!**



## Core descriptors for *in situ* conservation of crop wild relatives v. 1

Imke Thormann, Adriana Alercia, Mohammad Ehsan Dulloo



# DIGITAL SEQUENCE INFORMATION / GENETIC SEQUENCE DATA

GBIF has developed data mobilisation guidelines for DNA-derived data available for reuse by GLIS.

Based on **Darwin Core** and **MlxS** data standards.

**DNA-detected biodiversity** information mobilization has high strategic priority in GBIF!

**Complementary strategic priorities!**

## Publishing DNA-derived data through biodiversity data platforms

Anders F. Andersson · Andrew Bissett · Anders G. Finstad · Frode Fossøy · Marie Grosjean · Michael Hope · Thomas S. Jeppesen · Urmas Kõljalg · Daniel Lundin · R. Henrik Nilsson · Maria Prager · Cecilie Svenningsen · Dmitry Schigel – Version 3027b16, 2022-08-05 14:26:56 UTC

This document is also available in [PDF format](#) and in other languages: [français](#).





## BIODIVERSITY DIGITAL TWIN (BIODT.EU)

GBIF and GBIF Norway participate in the Horizon Europe development of digital twins for biodiversity (2022-2025).

Including a *digital twin for the crop wild relative gene pool* of grasspea (*Lathyrus*).

Including a *digital twin for DNA-detected biodiversity* in poorly known habitats.

**The Plant Treaty and PGRFA researchers are very relevant target end-users and partners!**



## COLLECTION SPECIMENS AND GENEBANK ACCESSIONS

The **Multi-Crop Passport Descriptors (MCPD)** for genebank accessions conserved *ex situ* are already compliant with GBIF.

MCPD mapped to the **ABCD** data standard for implementation with the **BioCAsE** data publishing toolkit (Berhendsohn and Knüpffer 2006).

MCPD mapped to the Darwin Core data standard and the **Darwin Core germplasm extension** for implementation in the GBIF Integrated data Publishing Toolkit (**IPT**) (Endresen and Knüpffer 2012).



# Biodiversity Information Standards

TDWG





# Global Registry of Scientific Collections

*GRSciColl was established by CBOL at Smithsonian in 2013  
Hosting of GRSciColl was transferred from CBOL to GBIF in 2019  
May 2023: 8 133 institutions 7 045 scientific collections registered*

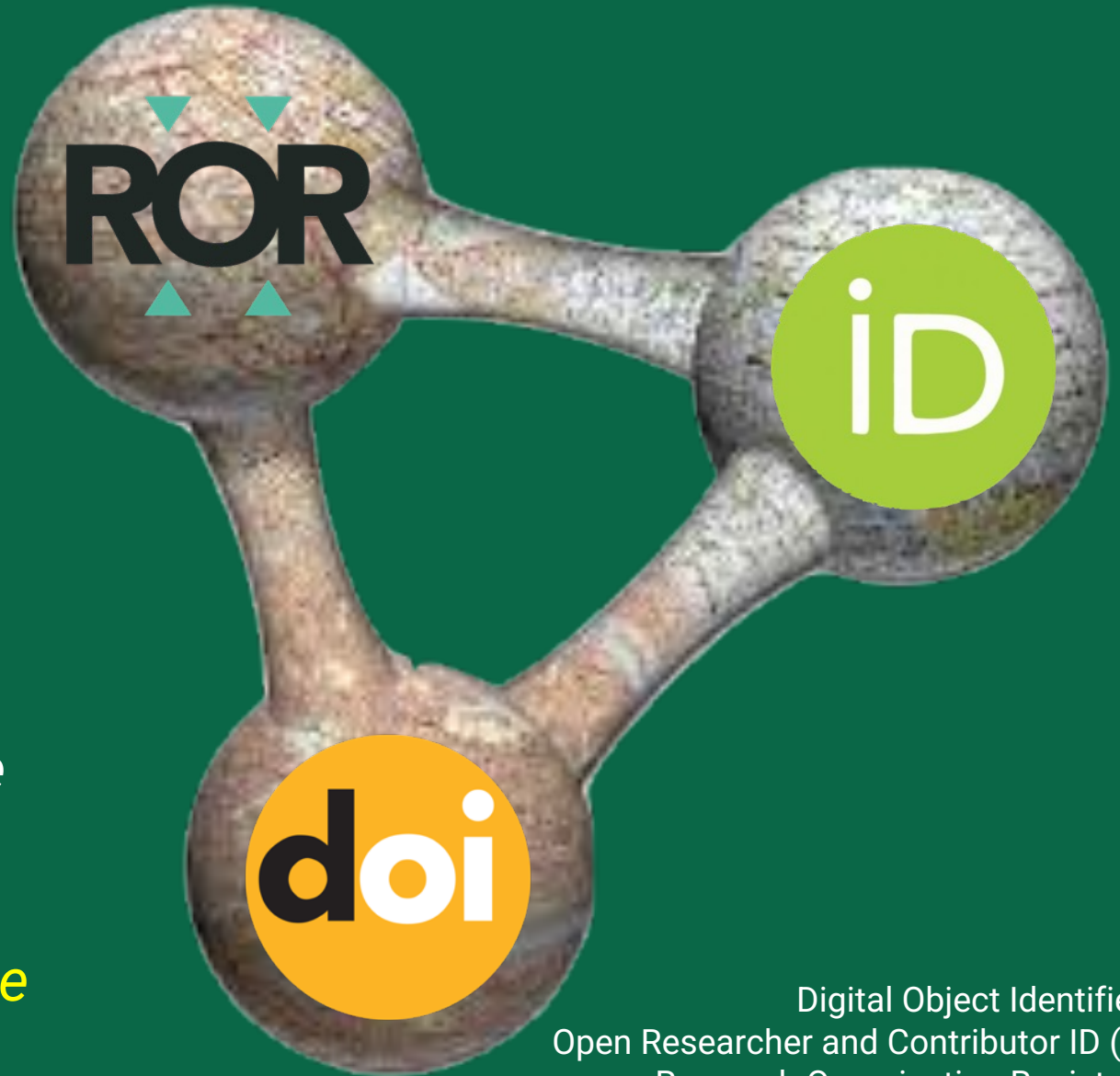
**ROR** for institutions

**ORCID** for people

**DOI** for datasets

**GRSciColl UUID** for collections  
(& e.g. DOIs for specimens)

*will enable the linking of collection specimens (including genebank accessions) to scientific literature and scientific actors (authors, curators, etc) → Integration of collections with the Web of Science metrics*



Digital Object Identifier (DOI)  
Open Researcher and Contributor ID (ORCID)  
Research Organisation Registry (ROR)  
Universally Unique Identifier (UUID)



# THE FAO WIEWS ORGANIZATION TABLE *COULD* BE LINKED WITH GRSCICOLL

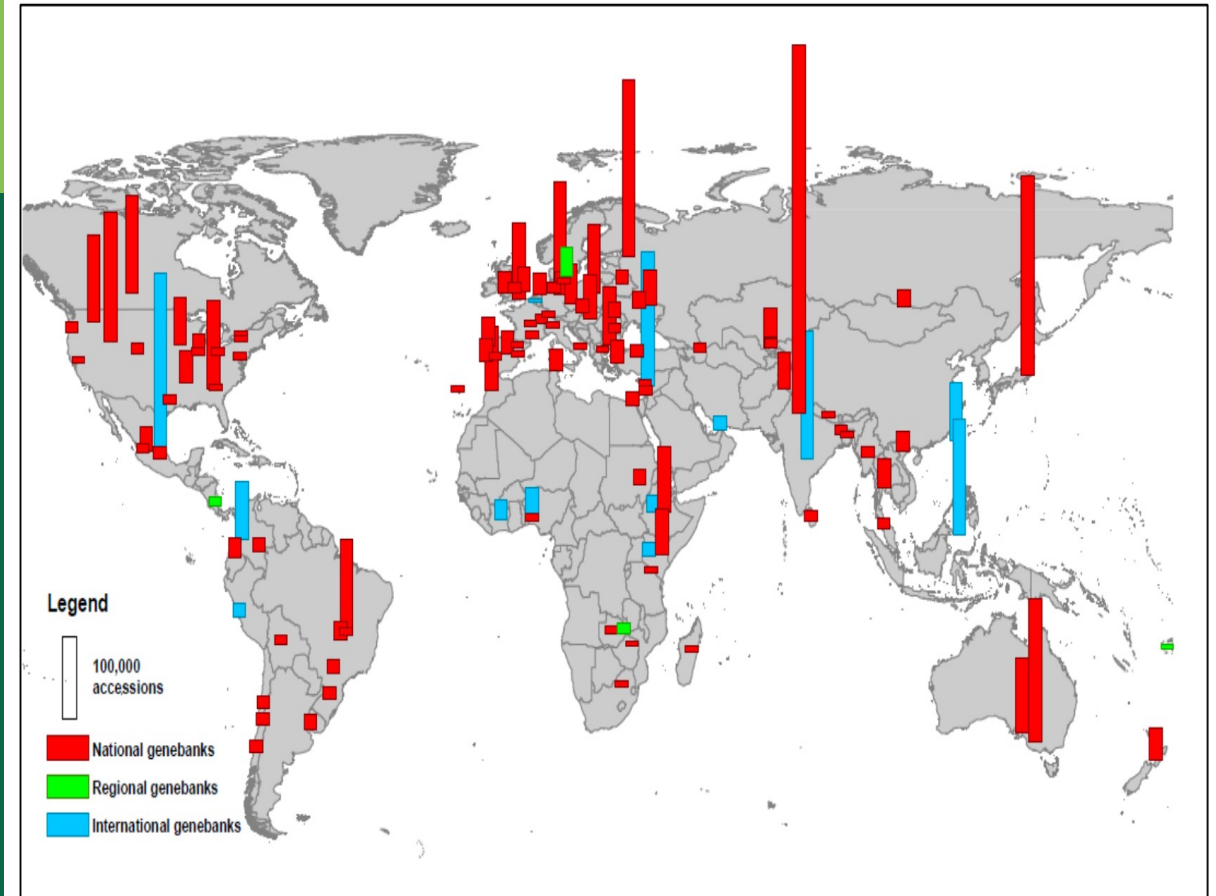
More than 17,000 organizations engaged in the conservation and sustainable use of PGRFA are registered by FAO and assigned a **WIEWS INSTCODE**.

Recommendation

**WIEWS INSTCODE** → ROR ID

**PGRFA collections** → GRSciColl (link systems)

Figure 3.1. Geographical distribution of national genebanks holding more than 6 000 accessions,<sup>38</sup> regional genebanks and international genebanks



# AGROBIODIVERSITY FITNESS FOR USE TASK GROUP

GBIF and Bioversity (2016) **task group** on GBIF data fitness for use in agrobiodiversity.

*New GBIF agrobiodiversity task group is in planning – to review the implementation of the recommendations (to be decided).*

*The Plant Treaty could join the formation of a new agrobiodiversity task group.*



## Final Report of the Task Group on GBIF Data Fitness for Use in Agrobiodiversity

*Final version 1.0 published on 15 February 2016*

### Authors (in alphabetical order)

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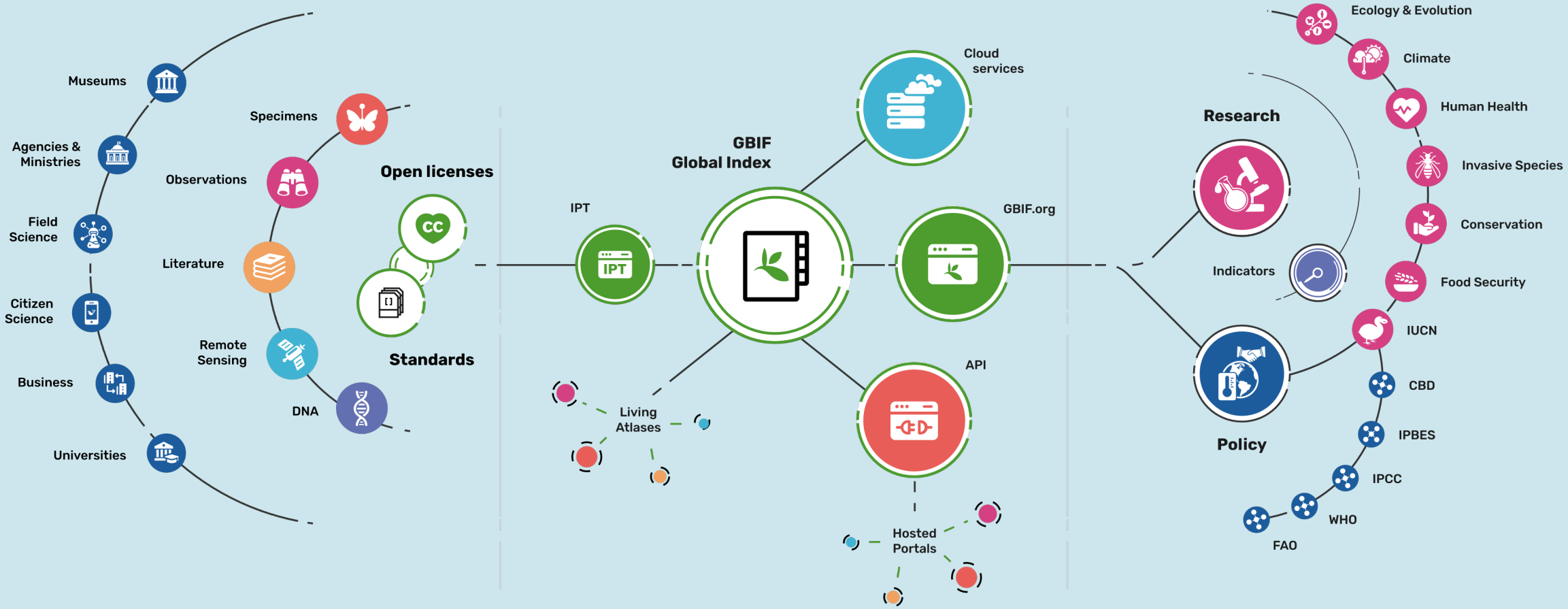


UNIVERSITY OF  
BIRMINGHAM





# PROVIDING BIODIVERSITY EVIDENCE FOR RESEARCH AND POLICY



# THANK YOU

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