



ELIXIR Europe

*Katharina F Heil, Programme Manager
Communities & Training*

Biodiversity, Food Security and
Pathogens support, ELIXIR Hub

Pro-Grace Synergies session
October 9th 2025

ELIXIR – what do we do

We build life science informatics **capacity** and infrastructure in Europe, connect and develop a **network** of experts and provide hundreds of high quality services and resources available to all



Databases



Training



Software tools



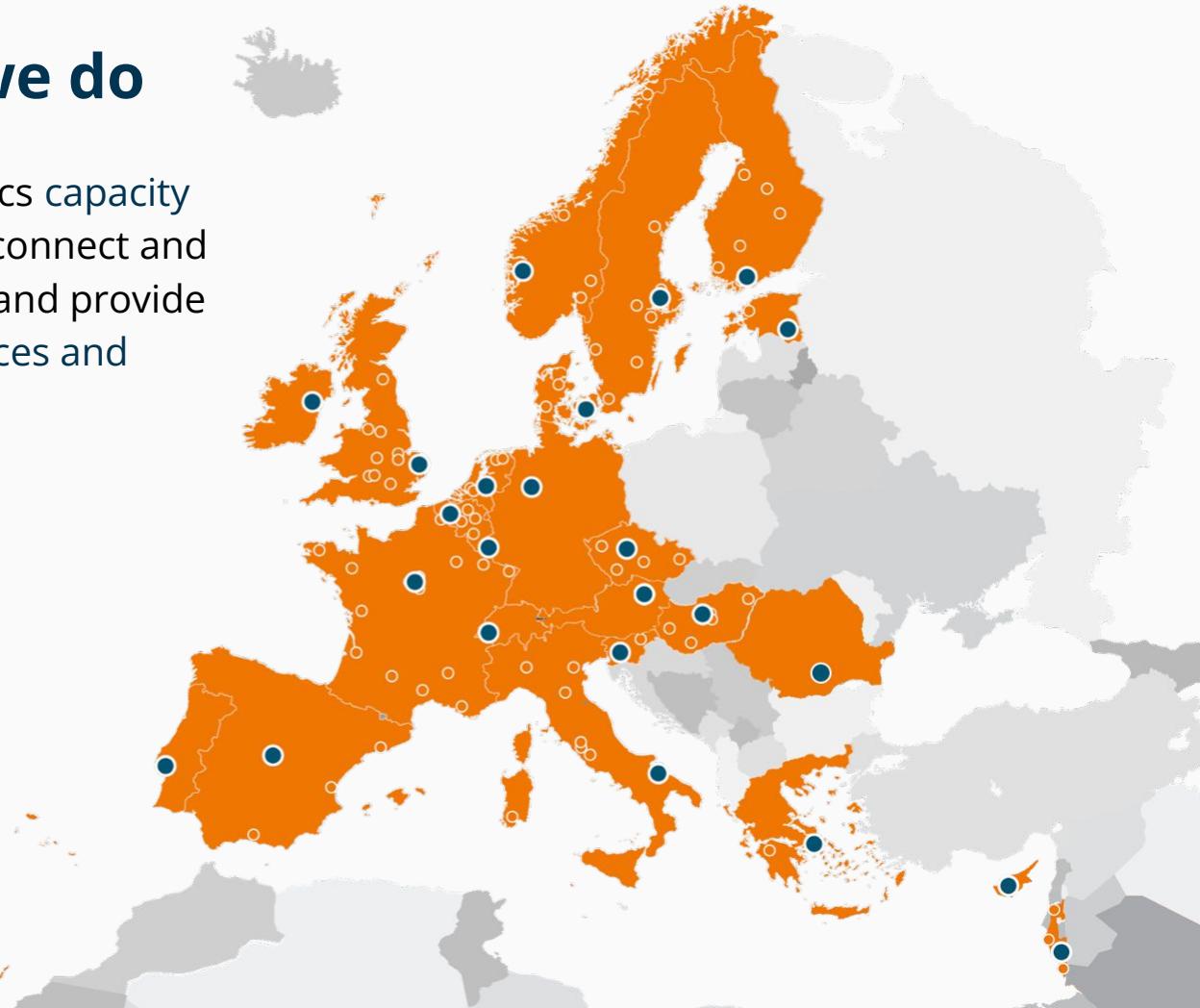
Data standards



Compute resources



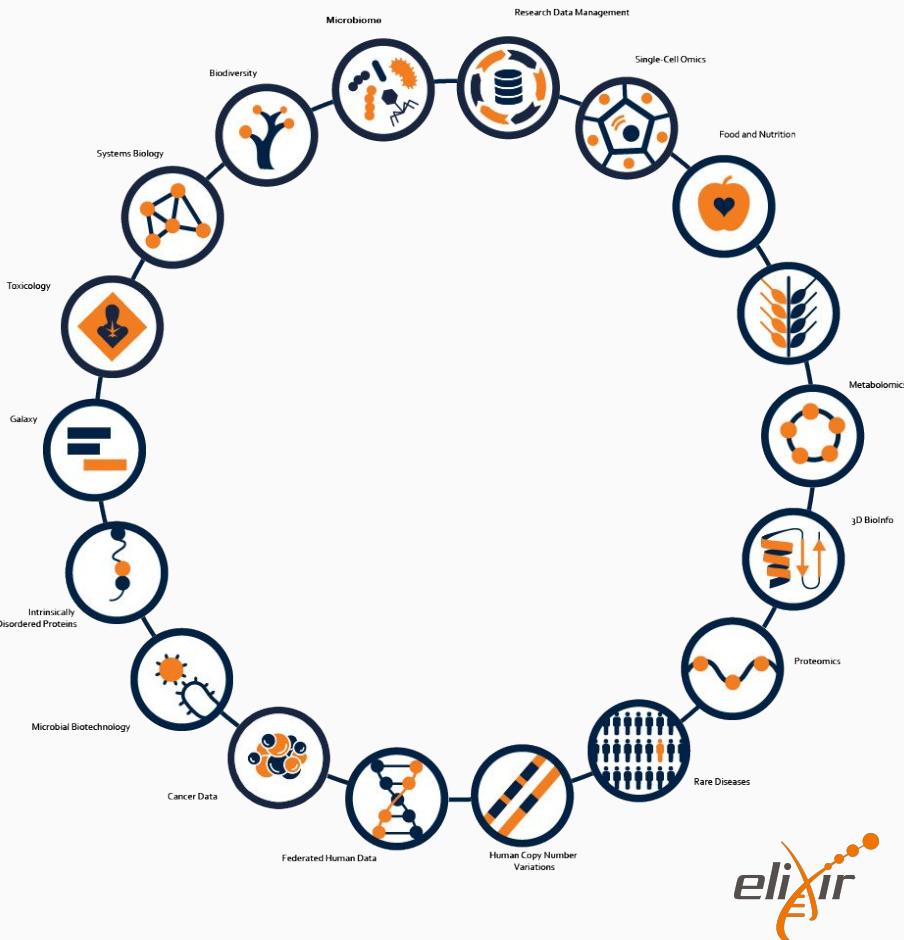
Scientific & technical experts



ELIXIR's areas of expertise

... of (most) interest to PRO-GRACE

- ELIXIR's Communities Portfolio
 - 18 Communities
 - **Plant Sciences**
 - **Biodiversity**
 - Metabolomics
 - Food & Nutrition
 - Research Data Management
 - Proteomics
 - ...



Together we accelerate the understanding of life

As a foundational **data** infrastructure, we serve science

Life scientists in academia and industry are key stakeholders

Together

We connect **national** infrastructures to mobilise data for life sciences in the European Research Area



Societal challenges... ...and data-driven solutions



ELIXIR Nodes run almost 500 services for life scientists & bioinformaticians

- Compute services – **cloud, compute, storage and access services**
- Data resources – **sustainable data resources within a scalable, connected ecosystem**
- Interoperability services – **standardisation, metadata and vocabularies**
- Tools – **accessible and benchmarked software tools conforming to information standards**
- Training services – **developing scientific and technical experts and users**
- Multi-Node services – **connecting expertise between ELIXIR national Nodes**



ELIXIR in the Biodiversity, Food Security and Pathogens space

- **Data brokering solutions:** tools & services supporting data producers to mobilise data
- **Resource interoperability:** technical solutions & common standards connecting data
- **Data discovery & analysis:** software, workflows, & reference datasets supporting researchers

Read more:

- BFSP work plan: 2024-2026: <https://zenodo.org/records/15130186>
- BFSP strategy: <https://zenodo.org/records/15133254>





Biodiversity Community

F1000Research

Search

BROWSE GATEWAYS & COLLECTIONS HOW TO PUBLISH ABOUT BLOG

[Home](#) » [Browse](#) » Recommendations for connecting molecular sequence and biodiversity...

OPINION ARTICLE

REVISED Recommendations for connecting molecular sequence and biodiversity research infrastructures through ELIXIR [version 2; peer review: 2 approved]

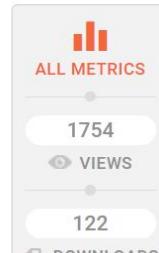
Robert M. Waterhouse¹, Anne-Françoise Adam-Blondon², Donat Agosti³, Petr Baldrian⁴, Bachir Balech  ⁵, Erwan Corre⁶, Robert P. Davey  ⁷, Henrik Lantz  ⁸, Graziano Pesole  ^{5,9}, Christian Quast¹⁰, Frank Oliver Glöckner  ^{11,12}, Niels Raes  ¹³, Anna Sandionigi  ¹⁴, Monica Santamaria  ⁵, Wouter Addink¹⁵, Jiri Vohradsky¹⁶, Amandine Nunes-Jorge  ¹⁰, Nils Peder Willassen¹⁷,  Jerry Lanfear  ¹⁸

 [Author details](#)



This article is included in the [ELIXIR](#) gateway.

 [Check for updates](#)



[Home](#) » [Browse](#) » The ELIXIR Biodiversity Community: Understanding short- and long-term...

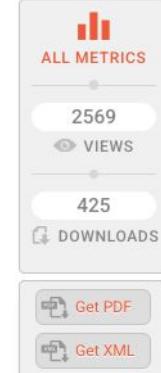
OPINION ARTICLE

REVISED The ELIXIR Biodiversity Community: Understanding short- and long-term changes in biodiversity [version 2; peer review: 3 approved]

 Robert M. Waterhouse  ¹, Anne-Françoise Adam-Blondon², Bachir Balech  ³, Endre Barta  ⁴, Physilia Ying Shi Chua  ⁵, Valeria Di Cola⁶, Katharina F. Heil  ⁵, Graham M. Hughes  ⁷, Lars S. Jermiin  ^{8,9}, Matúš Kalaš  ¹⁰, Jerry Lanfear  ⁵, Evangelos Pafilis¹¹, Patricia M. Palagi  ⁶, Aristotelis C. Papageorgiou¹², Joana Paupério  ¹³, Fotis Psomopoulos  ¹⁴, Niels Raes  ¹⁵, Josephine Burgin¹³, Toni Gabaldón  ^{16,17}

 [Author details](#)

 [Check for updates](#)



Plant Sciences Community



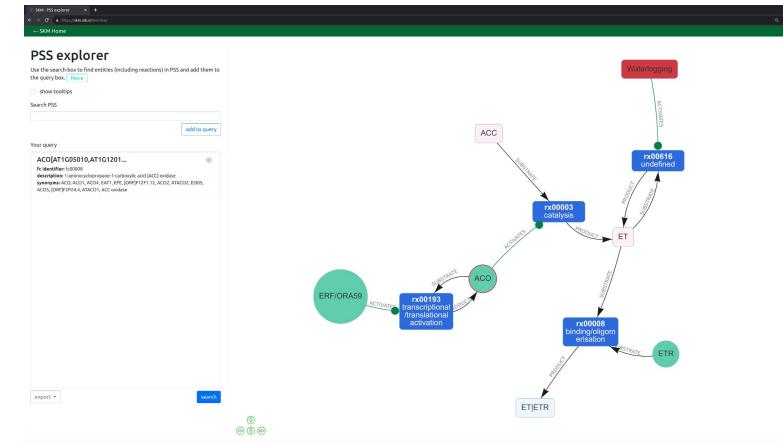
Some key services

- Data standards
 - Co-leading & building
 - Interoperability with ISA & ROCrate, integration in Fairdom-Seek
- Guidelines
 - Plant genomic/genetic brokering @ ENA-EVA
 - [RDMKit](#), used beyond ELIXIR
- Trainings
 - data management & standard
 - ELIXIR, nodes, EMPHASIS, NARO
- Knowledge graphs
 - genomic, omics
 - system biology
- Data portal ([FAIDARE](#))



More information:

<https://elixir-europe.org/communities/plant-sciences>



RDMkit

Data management menu

Your domain

Plant sciences ↗ ! ⚡

↗ On this page

Introduction

Data management challenges in plant sciences

The plant science domain includes studying the adaptation of plants to their environment, ranging from improving crop yield or resistance to environmental conditions, to understanding plant-pest interactions and ecosystem dynamics. Data integration and reuse are facilitators for understanding the plant genome and its function.

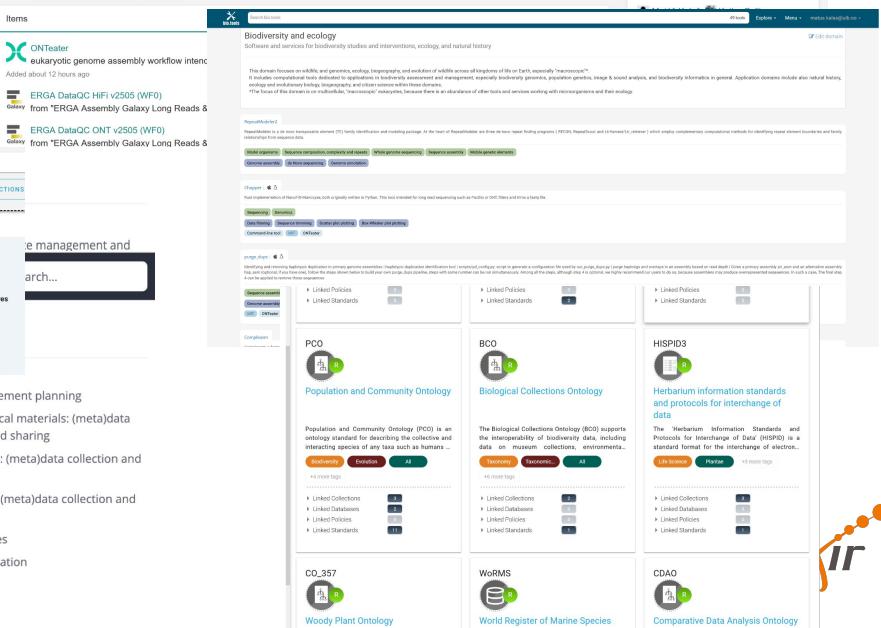
Technical Resources

- Research Data Management
 - RDMkit pages: [Biodiversity](#) and [Plant Sciences](#)
 - The Research Data Management toolkit for Life Sciences - Best practices and guidelines to help you make your data FAIR (Findable, Accessible, Interoperable and Reusable)
- WorkflowHub
 - [Biodiversity & Ecology](#) & xxx workflows
 - A registry for describing, sharing and publishing scientific computational workflows. WorkflowHub aims to facilitate discovery and re-use of workflows
- Galaxy
 - [Galaxy for Ecology](#)
 - Galaxy is a web based analysis and workflow platform designed for biologists to analyse their own data
- Bio.tools
 - [Biodiversity & ecology](#) (Searching for "Biodiversity" finds over 160, and "Ecology" almost 800 tools)
 - Essential scientific and technical information about software tools, databases and services for bioinformatics and the life sciences
- FAIRsharing registries
 - [Biodiversity](#), [Plant Research](#) collections (210 and 30 services and databases respectively)
 - A curated, informative and educational resource on data and metadata standards, inter-related to databases and data policies.
- Training Resources
 - TeSS collection: [Biodiversity](#), Biodiversity [Learning Path](#)
 - Portal for courses, events, videos, presentations, learning pathways, handbooks... for all types of resources at all levels for leveraging computational resources in the life sciences

Technical Resources



The screenshot shows the WorkflowHub interface. At the top, there is a search bar with the placeholder 'Search here...' and a 'Search' button. Below the search bar, there are two main sections: 'Eukaryotic Genome Sequence Assembly & Annotation' and 'PLAZI'. The 'Eukaryotic Genome Sequence Assembly & Annotation' section includes a 'Workflow' button and a 'View details' button. The 'PLAZI' section includes a 'Workflow' button, a 'View details' button, and a 'View on GitHub' button. To the right of these sections, there is a 'Collection' section with a circular icon containing a DNA helix. Below the collection icon, there is a 'ELIXIR Biodiversity Community' section with a 'View details' button. Further down, there are three 'E-LEARNING' sections: 'Biodiversity data exploration', 'Metabarcoding & DNA through Obitools', and 'Species distribution modeling', each with a 'View details' button. On the far left, there is a 'WorkflowHub' logo and a 'Workflows' button. On the far right, there is a 'Collection' button. At the bottom, there are 'Overview' and 'Related items' buttons.



The screenshot shows the homepage of the Biodiversity and Ecology section. At the top, there are links for 'Ontology', 'Explore', 'Metrics', and 'About this domain'. Below the header, there are sections for 'Ontology' (with a 'Biodiversity and ecology' sub-section), 'Data', 'Tools', and 'Community'. The 'Ontology' section features a large image of a DNA double helix and text about the eukaryotic genome assembly workflow. The 'Biodiversity and ecology' sub-section includes a 'Software and services for biodiversity studies and interventions, ecology, and natural history' link. The 'Data' section lists 'ERGA DataQC HiFi V2505 (WF0)' and 'ERGA DataQC ONT v2505 (WF0)' from 'ERGA Assembly Galaxy Long Reads & Bases'. The 'Tools' section lists 'ERGA DataQC ONT v2505 (WF0)' and 'ERGA Assembly Galaxy Long Reads & Bases'. The 'Community' section lists 'ERGA DataQC ONT v2505 (WF0)' and 'ERGA Assembly Galaxy Long Reads & Bases'. The main content area is titled 'Biodiversity and ecology' and contains a sub-section titled 'Population and Community Ontology (PCO)'. This section includes a 'Population and Community Ontology' logo, a brief description, and a 'View Details' button. Below this are sections for 'Biodiversity and ecology', 'Population and Community Ontology', 'Biological Collections Ontology (BCO)', 'Herbarium information standards and protocols for interchange of data (HISPD3)', 'World Register of Marine Species (WoRMS)', and 'Comparative Data Analysis Ontology (CDAO)'. Each section has a logo, a brief description, and a 'View Details' button. The bottom right corner features a stylized orange 'IR' logo.

RDMkit

Data management

Data life cycle ▾

Your role ▾

Your domain ▾

Biodiversity

✓ ! ⓘ

RDMkit

Data management

Data life cycle ▾

Your role ▾

Your domain ▾

Biodiversity

✓ ! ⓘ

Data management

Data life cycle ▾

Your role ▾

Your domain ▾

Biodiversity

Bioimaging data

Biomolecular simulation data

Cancer data

Plant sciences

✓ ! ⓘ

Introduction

Data management challenges in plant science

The plant science domain includes studying the adaptation of plants to improve crop yield or resistance to environmental conditions and reuse are facilitators for understanding the play between phenotypic and genomic data. Moreover, cross-species comparisons are often necessary to study phenotypic traits, especially at the genomic level, due to the variation in

ELIXIR's EU projects

- ELIXIR coordinates and partners in many EU projects
- Nodes provide data management expertise and infrastructure
- Key life science element of the European Open Science Cloud

Full list:

<https://elixir-europe.org/about-us/how-funded/eu-project>



Connect and stay up to date



@elixir-europe.org

Bluesky

Follow us on Bluesky for daily updates of upcoming ELIXIR events and ELIXIR-related research outcomes.



ELIXIR Europe

YouTube

Follow our YouTube channel for recordings of ELIXIR webinars and workshops.



company/elixir-europe

LinkedIn

Follow our LinkedIn for event informations and new job vacancies in ELIXIR Hub.



<https://elixir-europe.org/events>

Webinars & events

Check out ELIXIR's event page for upcoming webinars and events.





Thank you

Katharina F Heil

Get in touch with questions
Katharina Heil, katharina.heil@elixir-europe.org

elixir-europe.org