



# BEEs

## The LifeWatch ERIC Biodiversity & Ecosystem eScience Conference

Seville  
22-24/05/23



Threats and challenges to biodiversity and ecosystem conservation from an eScience perspective



**UNIÓN EUROPEA**  
Fondo Europeo de Desarrollo Regional  
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# Andrea Tarallo

# Data mobilisation in the COST Action ParAqua

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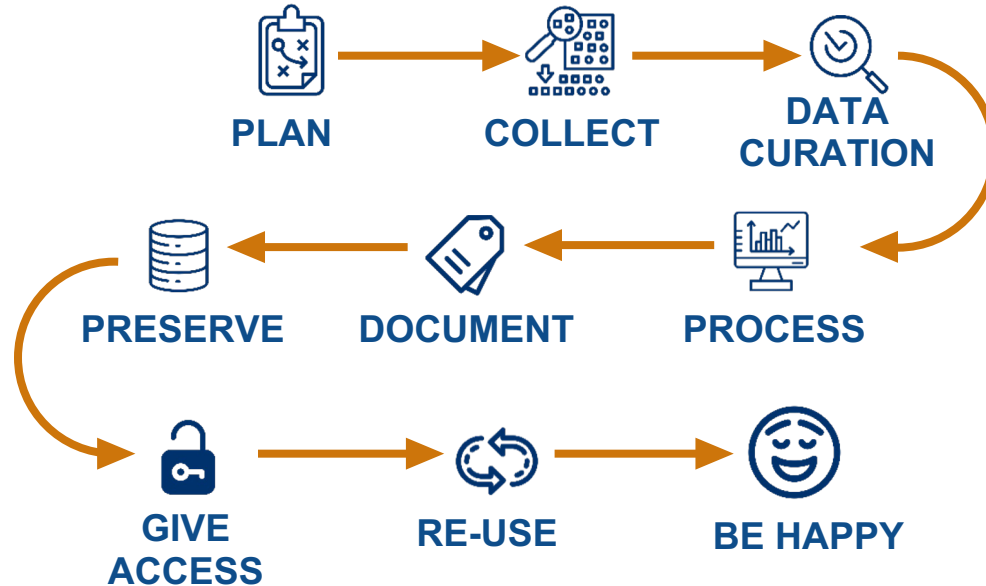
This presentation is based upon work from COST Action ParAqua, CA20125, supported by COST (European Cooperation in Science and Technology).

COST (European Cooperation in Science and Technology) is a funding agency for research and innovation networks. Our Actions help connect research initiatives across Europe and enable scientists to grow their ideas by sharing them with their peers. This boosts their research, career and innovation.



[www.cost.eu](http://www.cost.eu)

# Data mobilisation: how we think it is



# Data mobilisation: how we think it is

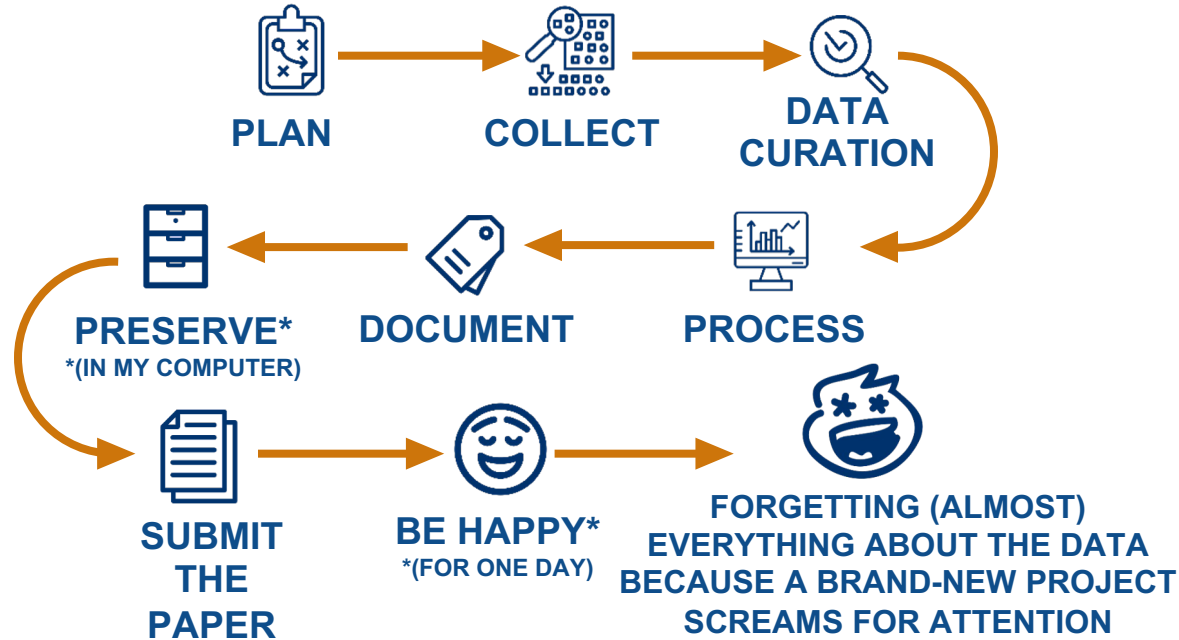


- Digitise
- Check
- Validate
- Clean
- Harmonise
- Compile metadata
- Archive



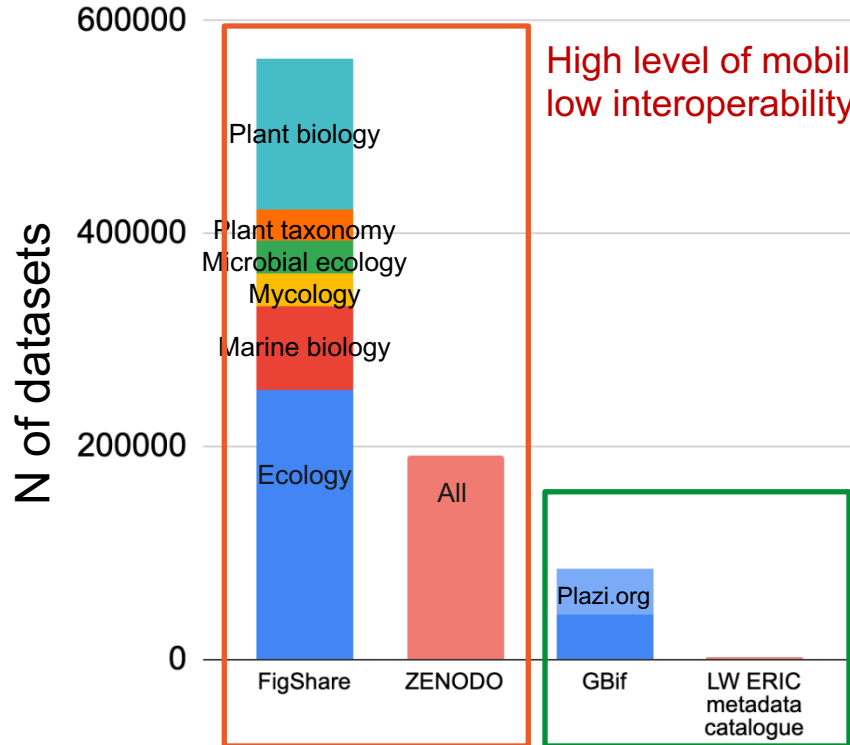
# Data mobilisation: how really is

**NOT EVERYONE!  
NOT YOU!**



# Data mobilisation: how really is





High level of mobilization,  
low interoperability



Low level of mobilization  
(\*if compared with the generalist repositories),  
high interoperability



# PARAQUA

## Applications For Zoosporic Parasites In Aquatic Systems

The main aim and objective of the Action are to organize and coordinate an innovative and dynamic Network, connecting academia, industries and water management authorities to advance and apply knowledge and expertise on zoosporic parasites (i.e. aquatic fungi and fungi-like microorganisms) and the relation with their hosts in natural ecosystems and industrial algal biotech production.

Not the scientific activities,  
but the networking:

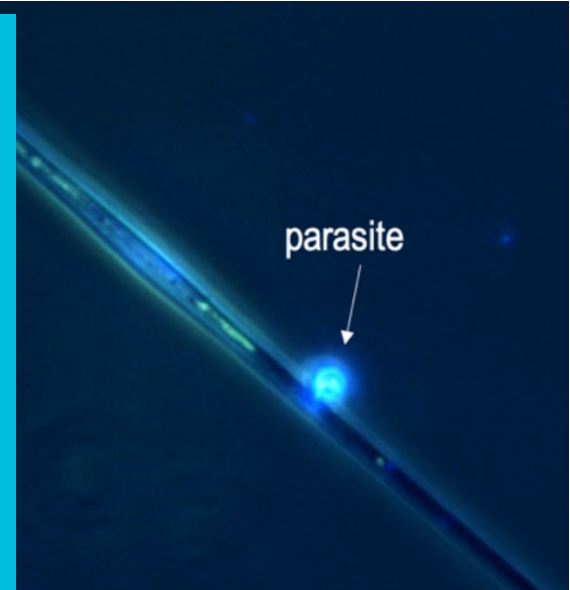
- **Meetings**
- **Training schools**
- **Scientific travel**
- **Conferences**
- **Etc.**

### Are you Interested in Taking Part?

The COST Action **ParAqua** welcomes research-active scientists working in the field. There are many ways to get involved.

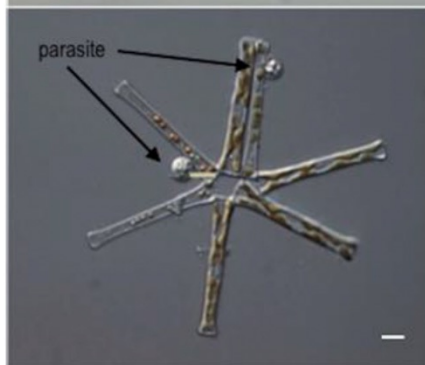
 JOIN PARAQUA

<https://paraqua-cost.eu/>





# What and why: zoosporic parasites



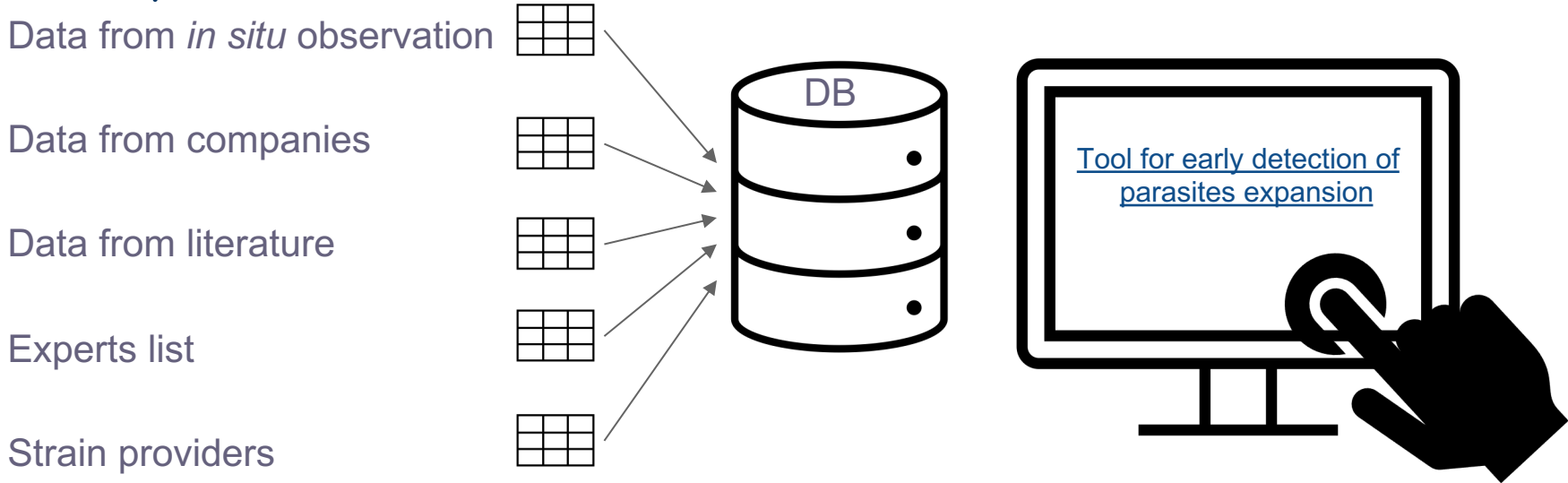
Photos from ParAqua members

- Zoosporic parasites are facultative or obligate parasite that produce **motile spores**
- Ecological role: cause frequent epidemics in natural ecosystems
  - Influence on planktonic succession
  - Regulate host genetic diversity
  - Promote trophic transfer to higher trophic levels -> (production of edible and nutrient-rich zoospores)
- Important biological constraints of industrial algae production
  - Biomass production can be reduced by 50%, product yield loss up to 80%
  - Managing of infection is not satisfactory: chemical treatments of reactors and culture initiated from scratch

 Scholz et al. 2016 <https://doi.org/10.1016/j.funeco.2015.09.002>



# Data mobilisation in ParAqua



# Data mobilisation in ParAqua

1. Preliminary survey
2. Research data management literacy
3. Data Management Plan
4. Data gathering

ID	Name	Email contact	Affiliation
Data resource title or short description	Is it already published? If yes please provide the access link	Data category	Data type
Artificial/Natural system	Habitat	Spatial range	Temporal range
Data format type	Are metadata present?	Dimension	Notes

## Why

- Type and volume of data
- Outline a RDM strategy

## How

- Minimal set of questions
- Prefilled drop-down menus
- Provide help-text

Response rate: 47/135 (35%)

## Lesson learned

- Co-development of the survey is not necessary

# Data mobilisation in ParAqua

1. Preliminary survey
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## Hybrid WG1&2 Workshop - "Zooporphic parasites interactive database and Early Detection Techniques" – held in Cyprus and Online, 5-6 July 2022 in cooperation with LifeWatch Italy

*By Andrea Tarallo & Ilaria Rosati*



In May this year, Lifewatch Italy was invited to join the COST Action ParAqua to coordinate the WG1 task for the development of a database on zoospore parasites. Together with the WG1 and WG2 leaders, we decided that the meeting in Cyprus would be the perfect occasion to kick-off this activity.

Read more on our website at this [Link](#)

Inserts from work in groups during the afternoon session of the Workshop "Early Detection Techniques" you can see below:



### Why

- Educate on RDM
- Agree on terminology

### How

- In presence event
- Kick-off the activity

### Lesson learned

- Nominate a leader for each activity to maintain the momentum

# Data mobilisation in ParAqua

1. Preliminary survey
2. Research data management literacy
3. **Data Management Plan**
4. Data gathering

## DMP ParAqua COST Action CA20125 Data Management Plan

Owner Version 0 Edited: 28 April 2023

Grant

**CA20125**

Researchers

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Description

The main aims of the COST Action CA20125 Applications For Zoospore Parasites In Aquatic Systems, in short ParAqua, are to organize and coordinate an innovative and dynamic Network, connecting academia, industries and water management authorities to advance and apply knowledge and expertise on zoospore parasites (i.e. aquatic fungi and fung-like microorganisms) and the relation with their hosts in natural ecosystems and industrial algal biotech production.

Among the ParAqua objectives, specific task of WG1 and WG2 is to compile and integrate a database on zoospore parasites across Europe and inventoise parasite effects on algal hosts in algal biotech and natural systems.

The purpose of this Data Management Plan is the description of how data is handled in the ParAqua Action in order to enable the sharing and reutilization of the data gathered during the Action lifetime, promoting an open and FAIR Research Data Management. For sake of clarity and to streamline the process of data mobilisation, we describe the data into four datasets type: i) "occurrences" dataset, which will contain data of presence/absence of parasites; ii) "traits" dataset, for the description of all the morpho-functional traits; iii) "environmental variables" dataset, for the accessories environmental measurements; iv) "literature data", which comprises mainly the data that are collected in literature to build the paper on occurrences and sequences of alga parasite foreseen in ParAqua WG1.

LifeWatch Italy, the national node of the eScience European Infrastructure for Biodiversity and Ecosystem Research LifeWatch ERIC, will collaborate by providing the IT infrastructure, tools, services and skills for sharing the acquired knowledge and assure the long-term sustainability of the data managed within ParAqua. This Data Management Plan is intended as a live document, and will be regularly updated whenever needed.

Datasets used

Occurrences	
Traits	
Environmental descriptors	
Literature data	

+ Add Dataset

## Why

- **DMP is the central document to each RDM actions**

## How

- **ARGOS DMP**

## Lesson learned

- **Co-writing is not necessary good**

# Data mobilisation in ParAqua

1. Preliminary survey
2. Research data management literacy
- 3. Data Management Plan**
4. Data gathering

## Why

- Agree on templates for data gathering
- Gather the harmonised data!



Environmental variables



Occurrences



Traits

## How

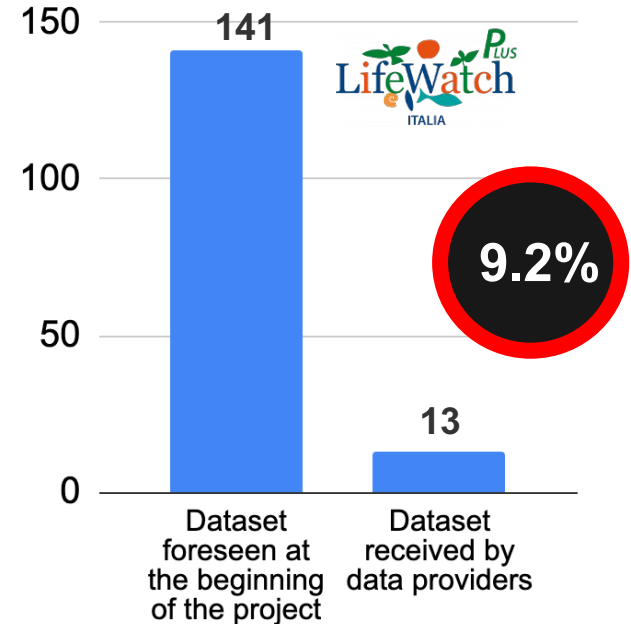
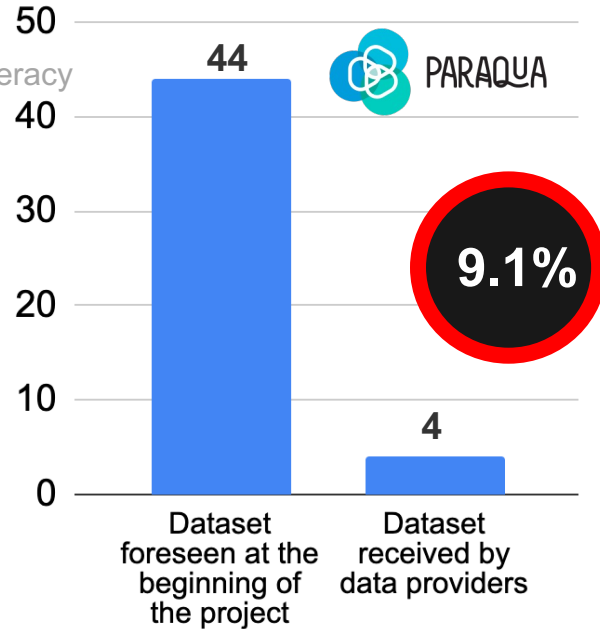
- Video recorded and several online asynchronous meetings

## Lesson learned

- Activity still running, it takes time!
- Users can adjust the datasets, not the standards mapping of the variables

# Data mobilisation in ParAqua

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## Lesson learned

1. It is hard and time-consuming -> dedicated personnel
2. Video recorded are good -> Dedicated courses?
3. A user feedback survey is needed!
4. I have a (imperfect) model now, LW nodes that do data mobilisation can exchange best practices.
5. New technologies to facilitate data mobilisation?



# Acknowledgements

This presentation is based upon work from COST Action ParAqua, CA20125, supported by COST (European Cooperation in Science and Technology).

AT has been supported by a COST Action dissemination grant.

Slides on ParAqua were kindly provided by Maja Berden Zrimec (Algen, algal technology centre, Ilc: Ljubljana, SI)

“the scream” by Soodam Elesti Lee, “drawer” by Worakamon Saykajarn, “excited” by Hadi, “Paper” by SITI NURHAYATI, “Happy” by Warunk Icon, “re use” by Worakamon Saykajarn, “Access” by andika, “label” by Larea, “finance” by Bachir Hamidi, “quality check” by KP Arts, “Random Sample” by Becris from Noun Project (CCBY3.0).



# BEeS

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Thank you! | [www.lifewatch.eu/bees-2023](http://www.lifewatch.eu/bees-2023)

