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Success stories of FAIR data publication on behalf of the ANR SO-DRIIHM Open Science project

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SO-DRIIHM project in brief

The ANR SO-DRIIHM project encourages the sharing and opening of data within, between and beyond OHMs.

- Promote Open Science** and enhance Open Science practices, showing the challenges and benefits of structuring, accessing, sharing and opening research data
- Enhance the DRIIHM existing infrastructure** to a more user-friendly and interoperable e-infrastructure with new functionalities that will be prioritized according to users' expectations and motivations (co-design process)



What is FAIR Data?

Findable Accessible Interoperable Reusable

- F Findable:** Metadata and data should be findable for both humans and computers
- A Accessible:** Once found, users need to know how the data can be accessed
- I Interoperable:** Data needs to work with applications or workflows for analysis, storage and processing
- R Reusable:** The goal of FAIR is to optimise data reuse via comprehensive well-described metadata

3 success stories in making data as FAIR as possible

TRAFIC project core team

- J.-L. Jung: responsible
- L. Coché: trainee in ecology
- I. Le Berre & E. Lerigoleur: data stewards
- R. David & B. Madon: data experts
- OMMAG & other NPOs and whale-watchers



Wild animals project core team

- P.-I. Ndiaye: responsible
- A. Diop & A. Niang: PhD students
- P. Duboz: OHMi coordinator
- E. Lerigoleur: data steward



PASTSERV project core team

- F. Mazier: responsible
- S. Haunold, C. Plancher, C. Bonnet, H. Belly, T. Houet: data producers and data analyst
- E. Lerigoleur: data steward



1. Identify the datasets useful for dissemination

The Kakila database (cetacean biodiversity in Guadeloupe) = **6 linked tables** (xlsx format)



3 tables (xlsx format):

- Large mammals biodiversity in Ferlo (North of Senegal)
 - occurrence data
 - trapping data of large mammals in Ferlo
- Bird biodiversity in Ferlo (occurrence data)



1 table containing absolute cover percentage of plant species from **vegetation survey** in the Vicdessos mountainous area (Pyrenees, France) (xlsx format)



2. Identify the most appropriate data repository // Check conditions



The **PNDP** portal (<https://data.pndb.fr/data>) offers:

- ✓ A national data portal in the field of biodiversity **F A**
- ✓ A permanent identifier (DOI) **F**
- ✓ Open licenses (eg. CC BY) **R**
- ✓ A detailed description of the data using the EML (Ecological Metadata Language) metadata standard and the possibility to specify provenance and the data dictionary (variables) **F**
- ✓ Interoperability with other thematic portals **I**
- ✓ Free of charge, many formats accepted, ... **I R**



The **GBIF** portal (<https://www.gbif.org/>) offers:

- ✓ An international biodiversity data portal **F A**
- ✓ A DOI **F**
- ✓ Open licenses (eg. CC BY) **R**
- ✓ A detailed description of the data using EML standard metadata **F**
- ✓ Use of the Darwin Core Standard (DwC) to structure and interconnect text files with a common terminology → imposed data format, but this standardization simplifies the publication process, and it also makes it easy for users to discover, search, evaluate and compare datasets **I R**
- ✓ Interoperability with other thematic portals **I**
- ✓ Free of charge, open formats ... **I R**



GBIF has been chosen to publish the dataset in the standard Darwin Core format.

The **Data.InDoRES** portal (<https://data.indores.fr/>) has been chosen to publish the source file with a structure commonly used by the research community. It offers:

- ✓ An institutional data repository (CNRS-INEE/MNHN) for long tail environmental data **F A**
- ✓ A DOI **F**
- ✓ Open licenses (eg. CC BY) **R**
- ✓ Standardized core metadata (Dublin core, DDI) **F I**
- ✓ Free of charge, many formats accepted, ... **I R**

3. Deposit & dissemination // Documenting and cataloguing data thanks to metadata

Deposit tool: MetaShARK (*Metadata Shiny Application for Resources and Knowledge*) hosted by PNDP <https://www.pndb.fr/en/tools/partager>

Time spent: **data curation + + + + + / data deposit + +**

DOI of the dataset: <https://doi.org/10.48502/8bb5-pk85>
DOI of the data paper: <https://doi.org/10.3897/BDJ.9.e69022>

Deposit tool: IPT Integrated Publishing Toolkit hosted by the GBIF France <https://ipt.gbif.fr/>

Time spent: **data curation + / data deposit + +**

DOI of the 3 datasets: <https://doi.org/10.15468/k6vut5>
<https://doi.org/10.15468/tr6zfp>
<https://doi.org/10.15468/u484g6>

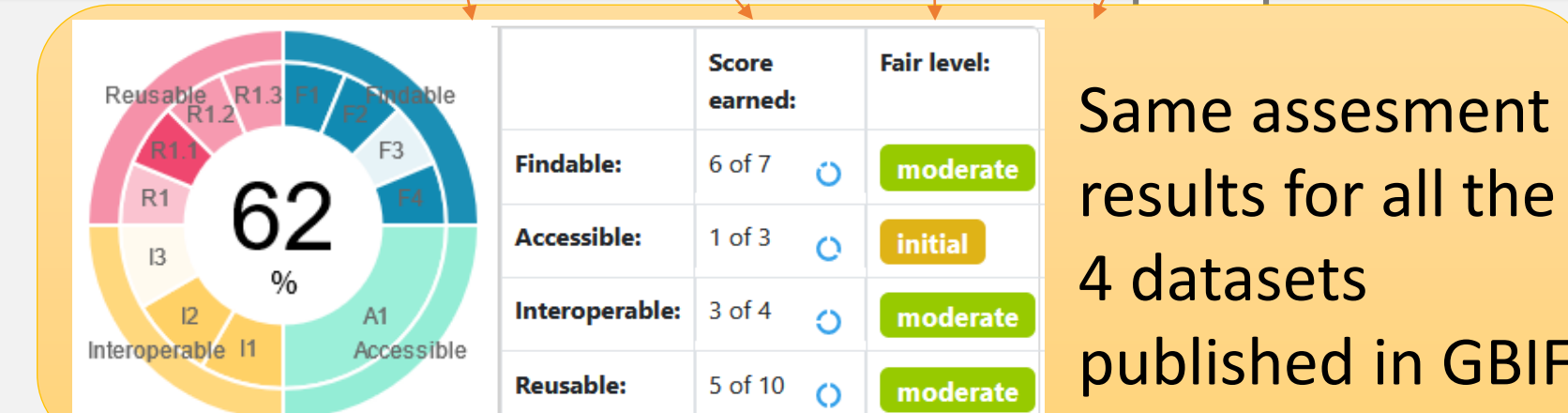
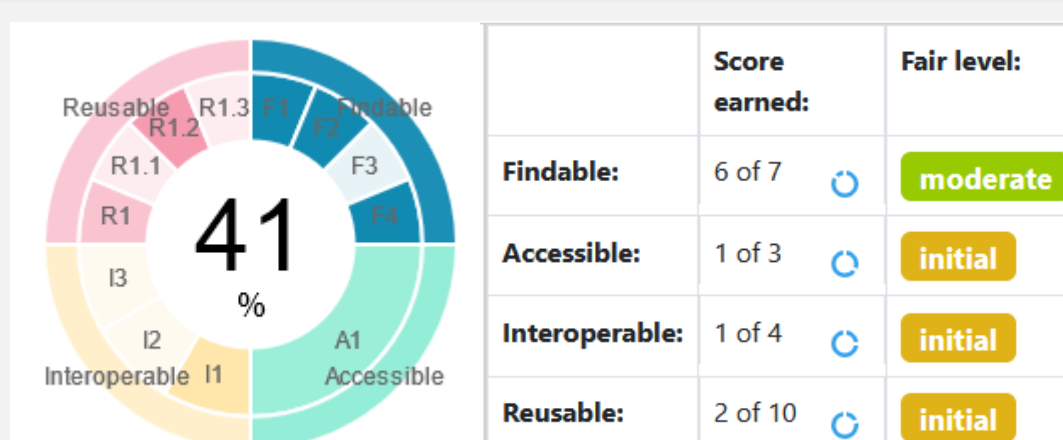
Deposit tools: IPT for GBIF and the dataverse web interface for Data.InDoRES

Time spent: **data curation + + / data deposit + + +**

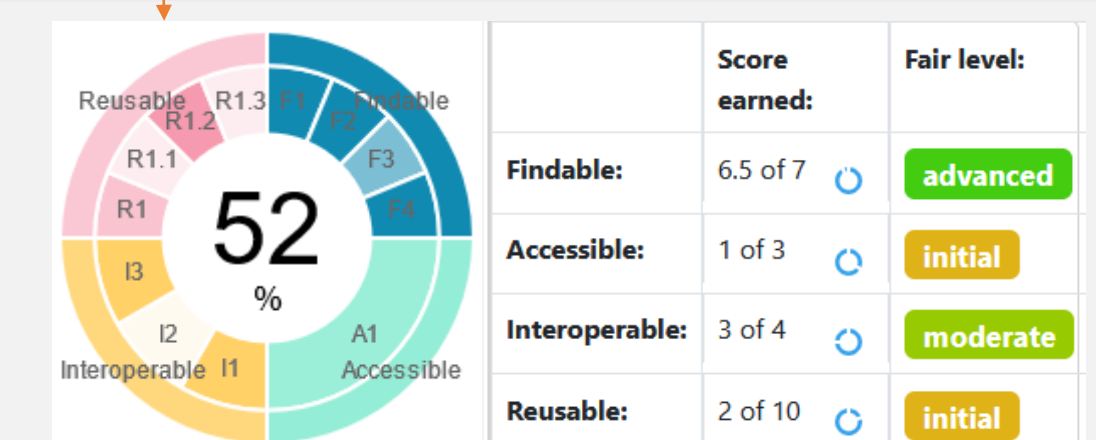
DOI of the datasets:
- GBIF Darwin Core file: <https://doi.org/10.15468/4q47d3>
- Data.InDoRES source file: <https://doi.org/10.48579/PRO/9S11PN>

4. Check the FAIRness level of the data using F-UJI tool

Note: F-UJI is a web service to programmatically assess FAIRness of research data objects. It is not perfect, it is being improved! <https://f.uji.net>



Same assesment results for all the 4 datasets published in GBIF



- +** Not so hard to achieve!
A DOI for each dataset
Guaranteed medium-term preservation
Fairly good level of data FAIRness

! Pay particular attention to the choice of data repository, which will affect the completion of the FAIR criteria

- A significant amount of dedicated learning time
Recurring need for data curation

Interested in data sharing? Interested in making your data FAIR?
Would you like to contribute to the SO-DRIIHM project as a beta tester for our future open science support platform? → **Contact us** @ datadriihm-groupe@services.cnrs.fr or emilie.lerigoleur@univ-tlse2.fr

Publish an improved version of the data and metadata