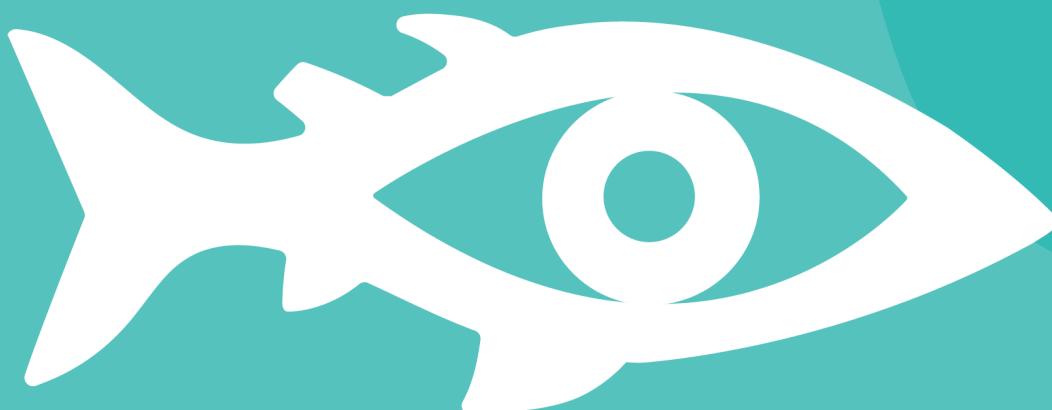




# UNDERSTAND BRIDGES



## DATA AND ETHICS IN THE SWIO\* \*(SOUTH-WESTERN INDIAN OCEAN)



# 1

# FROM SCIENTIFIC DATA TO KNOWLEDGE

**Data** is raw factual information (numbers, text, images, sounds, videos, etc.) used as the main source for scientific research and generally recognized by the scientific community as necessary for validating research results.



**Information** : When data is structured and contextualized, it becomes understandable information.

**Knowledge** is assimilated and integrated information that can inform decision-making and action.

Sources: ISO-14721:2012 OAIS Standard (Open Archival Information System), OECD (2007)

# DATA AT THE HEART OF RESEARCH ETHICS

2

Producing and sharing scientific data involves **ethical obligations**: protecting individuals (sensitive data), recognizing local knowledge, and ensuring transparency and fairness in access to knowledge.

Ethics in data lifecycle management requires documenting the conditions of collection, ensuring consent, and avoiding scientific extractivism\*.

\*practices and dynamics of exploiting knowledge and resources from marginalized or less powerful communities, often without adequate reciprocity or benefit to those communities

Sources : French Charter of Ethics for Research Professions (2015), CARE Principles for Indigenous Data Governance (GIDA, 2019), UNESCO (Recommendation on Open Science, 2021)

# THE FAIR PRINCIPLES: A TECHNICAL AND ETHICAL FRAMEWORK

3

The **FAIR principles** aim to make data easily usable. But this technical framework also has an ethical dimension:

- » **Findable**: contributing to the **transparency** of sources, particularly authors
- » **Accessible** : **reducing inequalities in access** between institutions and countries
- » **Interoperable** : **promoting exchange** within and between disciplines, projects, laboratories, researchers, etc. with different practices
- » **Reusable** : supporting the **reuse of data** in order to reduce the waste of human, technical, and financial resources, among other things.

**The FAIR principles promote open and responsible science when they are implemented carefully and with consideration for local contexts.**

Sources : Wilkinson et al. (2016), ODATIS, French Ministry of Higher Education

# EQUITY AMONG DATA PRODUCERS

4

Many countries contribute to data collection but are not sufficiently recognized and valued scientifically.

Equity in research involves:

- » Recognizing local producers
- » Ensuring reciprocal access to data
- » Establishing clear agreements on usage rights.

This requires **guaranteeing everyone a legitimate place in the production and interpretation of knowledge.** Inclusive governance, based on transparency and dialogue, enhances the **quality, impact, and sustainability of research.**

# 5

## SHARING DATA IN THE SWIO

In the SWIO, several structures facilitate the **sharing of marine data**, including:



➤ **OBIS (AfrOBIS – Ocean Biodiversity Information System)**, a platform that aggregates marine biodiversity data. All data is freely accessible. The KMFRI institute facilitates data submission for the WIO.



➤ **The WIOMSA association** supports research projects in the WIO that produce data. It organizes data sharing and exchanges of best practices.

# SHARING DATA IN THE SWIO



➤ **The Nairobi Convention:** a treaty for marine environmental management, with an obligation for scientific cooperation and information sharing. States formally commit to sharing, coordinating, and using data for the sustainable management of marine resources in the WIO.

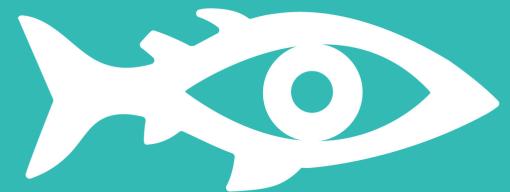
**But challenges remain:** unequal access to infrastructure, lack of resources for data storage, and tensions over data sovereignty.

# BRIDGES IS BUILDING AN ETHICAL INFORMATION SYSTEM

Through an **open science** approach, with the support of the Data Terra Research Infrastructure and its ODATIS data and services hub, the BRIDGES program is committed to making the research produced by the program accessible to all and promoting the reproducibility of science.

BRIDGES-INFORMATION is working in particular to set up a **FAIR information system** to promote the visibility, access, interoperability, and reuse of data from the BRIDGES program.

6



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