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**desk study on existing DATA policies (IOC, UN, non-UN): COMMON ELEMENTS IN THE REVIEWED DATA POLICIES AND INTRODUCTION TO TERMS OF USE**

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# Common Elements in Reviewed Data Policies

Document IOC/IWG-DATAPOLICY-I/5 (*Desk study on existing data policies (IOC, UN, non-UN*) reviewed a number of existing data policies that are currently applied by international and intergovernmental organizations, including IOC/IODE data centres and projects.

These organisations have implemented policies on data sharing and many of the policies reviewed have common elements. These include:

* Open access/open data
* Data licence
* FAIR principles

## Open access/open data

Data from publicly funded research should be open by design and by default in order to release their full potential as a primary resource for knowledge discovery. Full, free, and open access to data is considered the norm for many of the data policies reviewed. The UN Ocean Decade of Ocean Science for Sustainable Development will deliver seven key outcomes, one of which is “*An accessible ocean with open and equitable access to data, information and technology and innovation”.*

The data policies reviewed in the Desk Study identified 28 data policies that specified open access/open data:

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| Data policy | Open access |
| WMO Unified Data Policy | Members shall provide on a **free and unrestricted basis** the core data that are necessary for the provision of services in support of the protection of life and property and for the well-being of all nations |
| EU Open Data Directive | an obligation on Member States to adopt **open access** policies with respect to publicly funded research data |
| UNESCO Recommendation on Open Science | recommends **open access** to research, **open data**, open educational resources, open source software, source code, and hardware. |
| Beijing Declaration on Research Data | make research data as **open as possible** and only as closed as necessary |
| Polar Data Policy | full, free and **open access** for all users should be the norm unless there are valid reasons for restricted access. |
| WDS Data Sharing Principles | **universal and equitable access** to quality-assured scientific data, data services, products and information |
| CLIVAR Data Policy | data should be made available **freely and without restriction** |
| GEOSS Data Sharing Principles | data, metadata and products will be shared as **Open Data by default** |
| OECD Principles and Guidelines for Access to Research Data from Public Funding | **open access** to research data from public funding should be easy, timely, user-friendly and preferably Internet-based |
| Australia (ADU CSIRO Australia) | data collected are managed in accordance with o**pen access** data management principles, to be freely available  |
| Australia (NODC) | all data provided to the program is unencumbered and **freely accessible** at no charge to third parties. |
| Belgium (NODC, VLIZ) | strive to make scientific data **accessible to all** |
| Canada (ADU OTN) | balance data sharing against the real and practical concerns of sharing this very sensitive ecological information.  |
| Colombia (NODC) | data and public information are **open data**, for non-commercial use, without additional costs to those of its reproduction  |
| Denmark (ADU ICES) | all data products are **by default publicly available**, including those derived from restricted data |
| Finland (Met. Institute) | datasets **freely available** for public use. |
| Greece (ADU LifeWatch) | data are **openly and universally available** to all potential users  |
| Iceland (ADU CAFF) | free and **open access** to data, information and knowledge for conservation and management purposes will be promoted. |
| Ireland (NODC) | promote access to its data archives, subject to conditions under which data has been collected.  |
| Japan (ADU JAMSTEC) | data and samples to be made **open for research and educational** purposes and be available for use into the future on a global basis. |
| Norway (NODC) | data are **freely available** to all users on condition that the source is acknowledged. |
| Portugal (other) | citizenship data available on the HI website with **no charge** to the user. |
| South Africa (NODC) | provide for the **open dissemination and availability** of information and data, especially in terms of information collected and held using public funds. |
| Spain (ADU SOCIB) |  provide free **open-access** to quality controlled and timely streams of data |
| Sweden (NODC) | basic information is **freely available** without fees for all use, including research and education and for government activities |
| UK (NODC) | supply environmental data for **free**, apart from a few special cases as detailed in the policy. |
| UK (ADU CEFFAS) | **open access** is provided externally via an online metadata/data portal |
| IODE OBIS | data are freely available to everyone, following the **principles of equitable access and benefit sharing** |

## Data licence

Open access to data requires that the rights to reuse the data are made clear to the user. A common-use data licence is a legal instrument that specifies the terms and conditions under which data can be accessed, used, shared and attributed to the original data owner. The most commonly and widely used data licences are the suite of Creative Commons licences. Creative Commons (CC) licences provide a simple, standardized way to share data that allows the user to re-use, re-mix and share content legally. The European Commission, for example, stresses the importance of open data licensing and has decided to standardize the usage of Creative Common licences as the standards for open licences under the European Commission’s re-use policy.

In the Desk Study of existing data policies, 21 policies specify using a data licence and 12 of these identify the use of Creative Commons licences.

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| Data policy | Data licence |
| WMO Unified Data Policy | conditions may be placed on the use of recommended data by **applying licensing agreements** or other appropriate arrangements. |
| EU Open Data Directive | EC has standardized the usage of **Creative Common licences** as the standards for open licences under the EC re-use policy |
| UNESCO Recommendation on Open Science | through open science, scientists and engineers use **open licences** to share their publications and data, software and even hardware more widely. |
| Beijing Declaration on Research Data | to enable and support reuse of public data is for researchers to choose a minimally restrictive and voluntary **common-use licence** |
| Polar Data Policy | an **internationally recognised data licence** to be attached to a dataset which should be a non-restrictive licence specifying that the data may be re-used and specifying no requirement more onerous than an acknowledgement of the data’s source, e.g. the **Creative Commons open attribution licence** (CC-BY). |
| OECD Principles and Guidelines for Access to Research Data from Public Funding | data access should be established in relevant documents, **such as licences** |
| Australia (ADU, CSIRO) | data will be published under the terms of a **Creative Commons Attribution Licence** (CC-BY) |
| Australia (NODC) | recommends that data is licensed through an appropriate **Creative Commons license, preferably the By Attribution** (CC-BY) licence. |
| Belgium (NODC, VLIZ) | **digital objects have a licence** indicating the conditions under which they can be used, |
| Brazil (NODC) | **Internal licence** agreement |
| Colombia (NODC) | **licences for the use of open data** will have at least the following elements: a) Acknowledgment, that is, the licensee must refer to the source of the data and information at the bibliographic citation level. b) Non-commercial, that is, the use of data and information for commercial purposes is not allowed.  |
| Denmark (ADU, ICES) | **Creative Commons** (CC BY 4.0) licence |
| Finland (Met. Institute) | **Creative Commons Attribution** 4.0 International license (CC BY 4.0) |
| Greece (ADU, LifeWatch) | **Creative Commons** as a legal instrument to define the usage rights of the data. under two different conditions: CC Zero or CC-BY  |
| Ireland (NODC) | data should belicensed using the **Creative Commons** CC-BY 4.0 license.  |
| Norway (NODC) | data should be published under open access data licenses such as the **Norwegian License for Open Government Data** (NLOD) or compatible international licenses, such as **Creative Commons** (CC BY 4.0)  |
| South Africa (NODC) | **Creative Commons ShareAlike** (CC BY-SA) license will be applied by default |
| Spain (ADU, SOCIB) | issue an automatic **non-exclusive licence** to any user of near real time or delayed mode data for downstream IPR, provided the user registers its details and interests with the SOCIB data centre facility. |
| Sweden (NODC) | data from national environmental monitoring, the licence terms **Creative Commons** CC0. The licence terms mean that you have permission to use, distribute, redo, modify and build on data, even in commercial contexts. |
| UK (NODC) | data made available by the NERC Environmental Data Centres will be accompanied by a **data licence**.  |
| IODE OBIS | data is available under the following **Creative Commons** licences: CC-0, CC-BY, CC-BY-NC. CC-0 is the preferred one and CC-BY-NC the least preferred. |

## FAIR principles

FAIR simply states that data should be Findable, Accessible, Interoperable and Reusable. The FAIR Principles put specific emphasis on enhancing the ability of machines to automatically find and use the data, in addition to supporting its reuse by individuals. Making research data FAIR provides a range of benefits to the wider research community by enabling future researchers to publish, share, cite and reuse research data. The FAIR principles serve to guide data producers and publishers and these principles enjoy broad recognition through the ocean data community and increasingly in the ocean observing community.

The data policies reviewed in the Desk Study identified 10 policies that specified FAIR principles:

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| **Data policy** | **FAIR principles** |
| EU Open Data Directive | Member States following the principle of ‘open by default’ and compatible with the **FAIR principles**. |
| UNESCO Recommendation on Open Science | open research data are available in accordance with principles of good data governance and stewardship, notably the **FAIR principles** |
| Beijing Declaration on Research Data | make data **FAIR** on a global basis |
| Polar Data Policy | **FAIR principles** must be followed to the greatest extent practicable and ethical |
| Australia (ADU CSIRO Australia) | data collected are managed in accordance Findable, Accessible, Interoperable and Reusable (**FAIR) principles**. |
| Australia (NODC) | data are delivered to meet **FAIR principles** |
| Belgium (NODC, VLIZ) | aims to make data Open and **FAIR** |
| Greece (ADU LifeWatch) | **FAIR** reuse of data published through LifeWatch Greece |
| UK (ADU CEFFAS) | Cefas aims to follow and raise awareness of **FAIR data principles** |
| IODE OBIS | OBIS provides equitable access through **FAIR principles** |

# Terms of Use

Sharing data does not necessarily mean that anyone can do everything with the data. One way to define terms of use of shared data is to add a data use agreement – also referred to as data licence - to the data. A data licence is a legal arrangement between the creator of the data and the end-user specifying what the user is allowed to do with the data. Licensing data is an important aspect of making sure data meet the R (Reusable) in the FAIR principles. When a user downloads or uses a dataset which is licensed, they are agreeing to comply with the terms of the licence.

The most commonly and widely used data licences are the suite of Creative Commons (CC) licences which clearly describe how data can and cannot be reused. Creative Commons licences are available in human-readable and machine-readable forms, with different levels of permissions. The main attributes of using Creative Commons licences for the licensing of data are:

* The ease of use of the licences
* The widespread adoption of the licences
* Flexibility
* Availability in human-readable and machine-readable forms allowing both researchers and computers to immediately know what they are allowed to do with data
* Allow reuse of data

There are six different licences which range from the most permissive CC BY (which allows attribution to the author to distribute, remix, adapt, and build upon the data, including for commercial use), to the most restrictive CC BY-NC-ND (which only allows attribution to the author to copy and distribute the material for Non-Commercial purposes, in unadapted form (No Derivatives)). All Creative Commons licences require the user of the data to give attribution. In addition, the CC0 (Creative Commons Zero) enables the data creator to waive interests in their works. This means that they place their work in the public domain so that others may freely build upon, enhance and reuse the works for any purposes without restriction under copyright law.

The Creative Commons licences and their conditions are summarised in the table below.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **CC Licence** | **Can I copy and redistribute the work?** | **Is it required to attribute the author?** | **Can I use the work commercially?** | **Am I allowed to adapt the work?** | **Can I change the licence when redistributing?** |
| CC BY | Y | Y | Y | Y | Y |
| CC BY-SA | Y | Y | Y | Y | N |
| CC BY-ND | Y | Y | Y | N | Y |
| CC BY-NC | Y | Y | N | Y | Y |
| CC BY-NC-SA | Y | Y | N | Y | N |
| CC BY-NC-ND | Y | Y | N | N | Y |
| CC0 | Y | N | Y | Y | Y |

It is also possible to choose other data licences that may have been developed with a specific use cases or communities in mind or that are not in widespread global use. These include licences that were developed by national governments which are the recommended data licensing option within the corresponding country.

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