



LEIBNIZ CENTRE
for Tropical Marine Research

Research Data Policy

July 2024

Research Data Policy

1 Preamble

The Research Data Policy supports all researchers at the Leibniz Centre for Tropical Marine Research (ZMT) GmbH by specifying the framework for sustainable research data management at the Institute. It replaces the ZMT Open Data Policy, which has been in force since September 2015. This policy is based on the objectives and principles formulated in the Research Data Guideline of the Deutsche Allianz Meeresforschung (DAM) (2021).¹ It specifies the handling of research data with the background of the Guideline for Good Scientific Practice at the ZMT, which was adopted in 2022. It is supplemented by a Research Data Management Guideline at ZMT that specifies the regulations of the policy and provides practical recommendations for the management of research data at the ZMT. While this Research Data Policy explicitly refers to research data, the ZMT Library's Open Access Policy applies to articles in scientific journals, book chapters, monographs and contributions to edited volumes.

The Research Data Policy is intended to support the **FAIR** (findability, accessibility, interoperability, and re-usability) principles (Wilkinson, 2016) as an essential aspect of good scientific practice. By considering specifics of disciplinary cultures, it contributes to the formation of practices and standards in the various research fields and helps to meet the data handling requirements of national and international publication bodies and research funders as well as the National Research Data Infrastructure (NFDI). Access to research data is provided through trusted data repositories with recognised standards, thus fulfilling the **TRUST** principles (Transparency, Responsibility, User Focus, Sustainability, and Technology) (Lin et al. 2020). The ZMT is also committed to the **CARE** Principles (Collective Benefit, Authority to Control, Responsibility, Ethics) for the management of indigenous data, formulated by the Global Indigenous Data Alliance (GIDA) (Carroll, 2021).

2 Scope of Application

The Research Data Policy is addressed to all ZMT employees, fellows, early career researchers, guests, and visitors (hereinafter referred to as "researchers"), as well as to all expedition participants and users of ZMT infrastructures who have generated, are generating, and/or are working with research data. This policy applies to all research data generated, collected, or used by researchers at ZMT. It encompasses research data in all formats, including measurement data, laboratory values, audiovisual information, texts, survey data, objects from collections or samples that are created in the course of scientific work, developed or evaluated in the course of scientific work. Methodological test procedures, such as questionnaires, software and simulations are considered as research data (DFG, 2015). This policy refers to all research data that is produced or processed by ZMT researchers using

¹ The recommendations in Hiemenz and Kuberek (2018) were also taken into account.

ZMT resources and infrastructures. This includes data from all research activities, whether financially supported (institutional, third-party funding) or not.

3 Handling of Research Data

The handling of research data is relevant along the whole research life cycle starting from project planning and writing to data collection, data processing and analysis to data sharing and publishing, data preserving and data re-use. All persons involved in the value chain of research data at ZMT have a responsibility to maintain high scientific quality and carefully handle data from all research activities and infrastructure facilities at ZMT.

If data is collected as part of collaborative projects with tropical partners, the interests of all participants shall be considered. ZMT researchers **should** establish clear agreements among partners regarding data ownership, creation of data management plans, data access, and data sharing. They **should** define roles and responsibilities for data management and communication.

Data Ownership, Rights of Use and Data Access

Raw data are not protected by copyright and are the property of ZMT. As soon as raw data is processed and a certain level of originality is present, property rights apply. Therefore, research data should always be provided with a license (e.g. Creative Commons license CC-BY) during processing.

Since the creation of research data is part of the contractual obligations of the researchers, the rights of use to the research data are transferred to the employer in the case of an employment relationship and in the case of work subject to instructions (§ 43 UrhG)^{2,3}. The *actual* use of research data belongs in particular to the researcher who collects it (ZMT GWP, 2022). He/She must be able to secure their scientific recognition and complete projects (e.g. qualification work) within a reasonable period of time.

Those entitled to use the data decide whether third parties should have access to the data (subject to data protection regulations). ZMT researchers take copies with them when their employment contract ends, unless otherwise stipulated by data protection regulations (ZMT GWP, 2022). The original data can be viewed by the directors and authorised representatives at any time.

In certain cases, ZMT researchers conclude documented agreements on rights of use in cooperation with the Office for Knowledge Exchange (OKE) at the ZMT at the earliest possible stage in the research project (ZMT GWP, 2022). A documented agreement is recommended if (1) one or more institutions are involved in a research project or (2) if a researcher is likely to leave the ZMT and wishes to continue using the data generated by him/her for further research purposes (ZMT GWP, 2022). "During a research project, those entitled to use the data decide whether third parties should have access to them (subject to data protection regulations)." (ZMT GWP, 2022).

² See also Witschas et al. (2024a).

³ Gesetz über Urheberrecht und verwandte Schutzrechte (2024).

Planning and Proposal Phase

Costs incurred for research data management – e.g., human resources for data processing or for the development of project-internal workflows that extend beyond ZMT's basic infrastructure or publication costs **should** be part of the funds applied for in third-party funding applications.

All researchers are **required to** create a Data Management Plan (DMP) when planning a research project. The DMP should be reviewed and updated periodically throughout the research life cycle.

- The DMP has to outline strategies for data collection, storage, documentation, publishing and long-term preservation.

Data Storage, Data Documentation, Metadata

Researchers **should** securely store their data in the internal storage systems that are provided by the ZMT. Documentation and descriptive metadata **should** be linked to the research data as early as possible in the research process. For research data that is not collected and processed within an employment relationship with the ZMT, the ZMT offers to store and archive it in the internal storage systems with corresponding metadata (and a license for subsequent use) in line with good scientific practice.

- Metadata provides information about research data in a structured way to make the data understandable and machine readable. It is recommended using the pre-defined metadata scheme of the ZMT that is related to the PANGAEA metadata standards to describe datasets.

If ownership and data protection regulations or research ethics rules exclude unrestricted data publication, an access-restricted ZMT-internal archiving solutions **should** be selected.

Researchers **should** ensure an internal basic data curation (especially a metadata check) of their collected research data already during the research process. An enhanced curation of research data to be published is required by data repositories like PANGAEA.

- Curated data refers to data that has been organized, standardized and annotated with metadata.

Data Publication and Data Archiving

Researchers **should** seek for a publication of their research data.

- Research data is typically expected as 'supplement information' to a journal article and – increasingly – recognized as stand-alone publication of a relevant and original data set. Published data refers to research data that has been made publicly available through formal publication channels like data repositories or data journals.

To enable continued use of the research data according to the FAIR principles usage and exploitation rights through appropriate licenses (e.g., Creative Common License) have to be applied to the research data.

When publishing and/or archiving research data, researchers **must** use suitable, sustainably operated, trustworthy long-term repositories, such as the information system PANGAEA⁴ or the Research Data Centre (RDC) Qualiservice⁵. The archives that are chosen as an alternative must be comparably qualified and interoperable with the standards and practices of national and international research disciplines and communities. In the context of cooperation with tropical partners, the publication of research data in local repositories of the tropical partner country that meet these standards **should** also be examined.

According to the recommendations and requirements of research funding bodies (e.g., German Research Foundation, DFG; European Commission, EC) – within the framework of legal and contractual provisions (e.g. requirements for the collection of personal data, copyright), ZMT research data **must** be stored and kept accessible for as long as required or possible. This is generally for a period of 10 years; see also Guideline 17 of the ZMT GWP, 2022.

If research data is not published and archived in a public repository, it **has to** be archived in the long-term storage of the ZMT if the data was collected within an employment relationship with the ZMT. Once ZMT research data is accepted by a suitable public repository, the responsibility for data preservation can be considered to be handled by the hosting repository.

- Archived data refers to research data that is stored in a secure and stable storage for long-term preservation. Archiving ensures that data remains accessible and usable over an extended period, even beyond the conclusion of a specific research project.

Before leaving the ZMT, researchers **must** transfer all unpublished and, so far, unarchived, but basically curated research data to the internal storage and long-term storage systems of the ZMT if the data was collected within an employment relationship with the ZMT. Access to this data must be ensured for project and working group members.

By storing and archiving in the internal storage systems, the researcher(s) grants ZMT the right to make the associated metadata publicly accessible free of charge. Withholding the publication of metadata until the expiry of disclosure obligations is possible.

Compliance with Regulations and Ethical Standards

In accordance with the principles of good scientific practice, "ZMT researchers adopt a responsible approach to the constitutionally guaranteed freedom of research. They comply with rights and obligations, particularly those arising from legal requirements and contracts with third parties, and where necessary seek approvals and ethics statements [...]. With regard to research projects, the potential consequences of the research should be evaluated in detail and the ethical aspects should be assessed. The legal framework of a research project

⁴ The information system PANGAEA (<https://www.pangaea.de/>) is operated as an Open Access library aimed at archiving, publishing and distributing georeferenced data from earth system research.

⁵ The Research Data Centre (RDC) Qualiservice (<https://www.qualiservice.org/en/>) archives qualitative social science research data from all disciplines in order to make them available for scientific reuse.

includes documented agreements on usage rights relating to data [...]” (ZMT GWP, Guideline 10).

Researchers **must** check the admissibility of data release concerning personal data, copyrights, and possible interests of third parties. Sensitive and confidential data must be handled according to relevant laws and ethical standards. Research data that contains reference to individual’s personal information or is confidential **must** be anonymized according to prevailing standards.

Compliance with the general requirements of the project funding organisation and the ZMT is **mandatory**.

Responsibility of Programme Area Leads and Working Group Leaders

The Programme Area Leads, Working Group Leaders or any other researchers with a group leader or supervisor role **should** guide researchers to follow the Research Data Policy and the accompanying Research Data Management Guideline.

Support by the Research Data Service

The Research Data Service is a team at the ZMT that is responsible for providing resources, training, and support for researchers to understand and implement the Research Data Policy effectively. The team provides services and products to store, securely retain, and archive research data to ensure access to research data during and after the completion of research projects. Training and support in all questions related to research data management are also offered by the Research Data Service. Ethical and legal issues can also be addressed to the Research Data Service that may either provide direct support or name suitable contact persons. The Research Data Service is also in charge for the identification of new data sets in the ZMT’s field of work and their relevance for future research in cooperation with ZMT researchers.

Directors’ Recognition of Research Data Management

The directors acknowledge the need for appropriate resources, including funding, infrastructure, and personnel, to support the development and implementation of sound institutional research data management.

The directors consider the publication of quality-assured research data to be an essential part of the research process. They recognize the necessity of the additional effort for research data management and will support its implementation accordingly, both structurally and financially, as well as through scientific recognition.

The directors reserve the right to take the fulfillment of the requirements set out in this policy (in particular annotation with metadata, basic curation, data storage) into account in any future provision of resources. The provision and archiving of data from projects in the qualification phase of researchers are part of the scientific achievement on which the qualification is based.

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