

# **Research Data Guideline of the Alfred Wegener Institute, Helmholtz Centre for Polar and Marine Research**

## **Objective**

This document is addressed to all employees of the Alfred Wegener Institute (AWI), as well as to all expedition participants and users of AWI infrastructure who have or will generate and/or work with data.

The aim of this guideline and the research data directive specifying the details, is to harmonise the handling of research data at AWI in the context of the digital strategy of the Federal Government (7), the Alliance Initiative (4, 5), the Helmholtz Association (13, 14) and the AWI guidelines (1-3). The guidelines should ensure the FAIRness (findability, accessibility, interoperability and reusability) (19) and quality (18) of the collected research data. It is intended to contribute to the formation of subject-specific procedures and standards in the various research fields in order to meet the requirements of national and international publication organs and research funding agencies (9, 10, 12) as well as the National Research Data Infrastructure (NFDI).

The implementation of the presented guideline and directive should facilitate the work of scientists at the AWI by creating and maintaining the necessary framework conditions for sustainable research data management at the Alfred Wegener Institute.

## **Principles**

The AWI is committed to the long-term, sustainable preservation and reuse of research data for science and society. It recognises the necessity of the additional effort required for research data management and will support this both structurally and financially as well as through scientific recognition. The AWI is committed to the principles of open access to research data (15) and the FAIR data principles (19).

The AWI research data guideline and directive apply to all data on which AWI research is based and which were produced by AWI employees or using AWI resources and infrastructures (AWI data set). Irrespective of the rights of disposal and use regulated in the guideline and directive, persons who have produced the research data are entitled to priority rights of use. It must be possible for them to secure their scientific recognition and to complete projects (e.g. qualification work) within a reasonable period. Scientists decide on their own whether, how and where they make their results publicly available, taking into account the practices of the subject area concerned. If the decision has been made to make results publicly available, "researchers describe them completely and comprehensibly" in accordance with the DFG Guidelines for Safeguarding Good Research Practice, Code of Conduct (16).

## **Responsibility**

The responsibility for the scientific quality and the careful handling of the data of all research activities and infrastructure facilities at AWI lies with all persons involved in the value chain of research data. The guidelines and subject-specific recommendations of the DFG and the Alliance of German Science Organisations apply to the researchers. The board of directors is responsible for creating the framework conditions for safeguarding, providing and fair allocation of research data. The board of directors delegates implementation in the appropriate form while providing the necessary resources. This includes the appreciation of the collection and provision of research data as a scientific achievement, as well as agreeing on rules for dealing with AWI data and ensuring their implementation, establishing relevant evaluation criteria in consultation with the scientific council and a relevant supplement to the reporting policy. A permanent research data committee advises the board of directors and reports to it on the practical implementation at AWI. The committee is headed by the data division of the computing and data center. It will strive for a cost-benefit ratio that is acceptable to the Institute, including scientific recognition. It will advise on the implementation of the Helmholtz guidelines on digitalisation, the Alliance, OECD and EU rules on research data management and the DFG

rules of good scientific practice (4, 8-14, 17).

## **Archiving and Publication**

In accordance with national and international organisations for the promotion and execution of research tasks, the AWI is committed to long-term archiving and open access to research data from publicly funded research (6). The AWI strives to publish at least the primary research data, including essential metadata as quickly as possible according to subject-specific recommendations. All data should be deposited as early as possible, but no later than two years after collection, in a publicly accessible, citable long-term repository under a standardised licence (2). The deposited data may be embargoed for a maximum of two further years. In addition, appropriate embargo periods must be applied for and recorded in the data management plan. After expiry of the embargo period, the data must be made public immediately and actively using the FAIR data principles. This rule also applies, as far as possible, retroactively to all raw and primary data collected at AWI prior to the adoption of this guideline. The board of directors reserves the right to constrain the future allocation of resources and the provision of resources from the programme and infrastructure if data cannot be found. The provision and archiving of data from projects in the qualification phase of scientists are part of the scientific output on which the qualification is based.

## **Quality Assurance**

The sustainable use of research data requires quality management (18), also in terms of the reproducibility of research results. This must cover the entire life cycle of the data and thus be supported by data collection, standards, supplementary data (metadata) and methods of processing, their storage, backup and publication, up to the controlled deletion of the data. These measures should also comply with the FAIR principles. Producers and persons responsible for data, including methods, should be traceable along the value chain.

## **Scientific Recognition**

The publication of quality-assured research data is a central and indispensable service in the research process, which benefits science - and indirectly society as a whole. The AWI will promote a sustainable recognition of the associated scientific achievements both nationally and internationally.

A citable data publication enables not only a comprehensible scientific recognition but also the reproducibility of studies based on it. Furthermore, open access to research data will be documented.

The use of third-party data sets is subject to the obligation to cite and, if applicable, to the offer of co-authorship, which is in accordance with the DFG rules of good scientific practice. Authors of scientific publications are always jointly responsible for their content. Only those who have made a significant contribution to a scientific publication are considered to be authors. According to the DFG rules of good scientific practice (16), so-called "honorary authorship" is excluded.

## **Long term availability**

AWI data sets must be archived and published in suitable, sustainably operated, trustworthy long-term repositories (3).

If for plausible reasons, the PANGAEA repository operated by AWI and MARUM cannot be used, the alternatively selected archives must be comparable in quality and interoperable with the standards and practices of national and international research disciplines and communities. The research data committee provides a list of qualified archives and checks and completes it upon request. Researchers must ensure that research data on which scientific publications are based, in accordance with the standards of the professional associations, are unambiguous and can be found in the long term. Research data must be adequately cited in the publications.

### **Qualification**

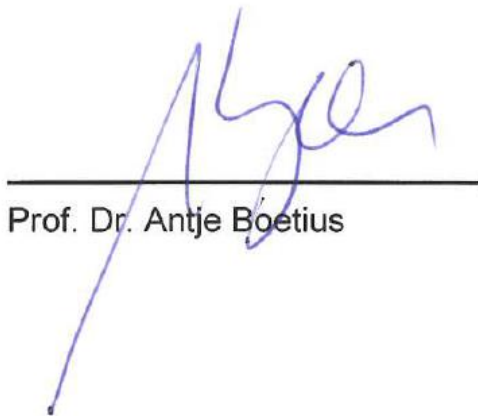
Due to the high importance and the rapidly growing demand for qualified personnel for research data management and analysis in science and industry, training and education at all AWI locations must be given great attention. Personnel development and planning are essential for this, as are the needs and corresponding training opportunities. These must be provided and evaluated regularly (14).

### **Legal questions**

Any kind of disposal of research data and, if applicable, the mere handling of data (especially personal data!) makes it necessary for those responsible to take into account the relevant legal context. The research data committee, in consultation with the Legal Department, provides a handout for this purpose. In case of doubt, the research data officer and/or the data protection officer should be consulted (13).

V11, final

Bremerhaven, 04.05.2020



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## Referenzen

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