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CONFERENCE OF THE PARTIES TO THE INTER-AMERICAN INSTITUTE FOR GLOBAL CHANGE RESEARCH
Thirty-third meeting
Asunción, Paraguay. Hybrid.
29–30 May 2025
Agenda item 10e

Report of the Open Data and Science Working Group

1. This document has been prepared by the Directorate.

Background

2. Article II of the Agreement Establishing the IAI states that "*The Institute shall seek to achieve the principles of scientific excellence, international cooperation, and the full and open exchange of scientific information on global change.*"

3. At CoP-32 (virtual), the work plan of the Open Data and Science Working Group was presented, which included *Objective 1: Implement and update the IAI's Open Data Policy* (Document IAI/COP/32/10).

4. This report describes the work of the Directorate and the Open Data and Science Working Group during the intersessional period to update the existing Open Data Policies and Principles for the IAI, adopted at the 26th Conference of the Parties (Guatemala, 2018, Decision XXVI/45)

Report of the Open Data and Science Working Group

5. Members include Carlos Joly (SPAC), Ines Camillioni (SAC), Pedro Laterra (SAC), Maria Amparo Martinez Arroyo (SAC), Guillermo Anlló (UNESCO), Susana Adamo (CIESIN, Associate), Omar Lopez (IAI), Irene Torres (IAI), Hilario Espinoza (Belmont Forum), and the committee is supported by the Open Data Specialist of the Directorate.

6. The Committee met from November 2023 to June 2024 to draft and review the policy.

7. The policy was sent to the SAC and SPAC on 21 September 2024, for review and comment and to the Parties on 19 November 2024, for review and comment.

8. The Directorate also met with the Belmont Forum and the Open Research Community Accelerator (ORCA) for guidance. As a member of the Belmont Forum, the IAI endorses its open data policy and recognizes that some of the information and language herein[1] aligns with the principles of the Belmont Forum Community Data Management and Digital Infrastructure Strategy and Implementation Plan adopted in 2015.[2]

9. The draft policy is presented in Annex 1, instructions and resources for implementing the policy are presented in Annex 2, and the implementation plan of the policy for the Directorate for 2025–2030 is presented in Annex 3.

10. The Open Data and Science Working Group has achieved progress in the internalization of good practices for data-sharing and publication (Activity 1.1 in Annex 3).

11. The Directorate has trained 12 research teams funded by the IAI to apply good data management and sharing practices during and after project completion (Activity 1.2 in Annex 3).

12. The Directorate has promoted the use of the open data catalog, which has increased 600% the number of databases contained from 2020 to 2025 (Activity 1.3 in Annex 3).

13. The Directorate is aggregating its scientific production (databases and publications) to a regional open access repository (La Referencia) to increase accessibility and visibility of IAI-sponsored scientific production (Activity 1.4 in Annex 3).

Recommendation

14. The Conference of the Parties is invited to consider adopting the draft decisions included in Annex 4 to the present document.

[1] https://www.belmontforum.org/data

[2] https://www.belmontforum.org/wp-content/uploads/2019/10/A_Place_to_Stand-Belmont_Forum_E-Infrastructures__Data_Management_CSIP.pdf

Annex 1: Open Access to Data and Publications Policy

Introduction

The Inter-American Institute for Global Change Research (IAI) has demonstrated a long-standing commitment to full data sharing in pursuit of a culture where scientific knowledge is openly available for all to access, reuse, and build upon collectively. Its first open data policy dates to 1995[3] and establishes the *purpose of facilitating the full and open exchange of data among the Parties to the Institute, in accordance with Article II of the Agreement Establishing the Inter-American Institute for Global Change Research.*[4] Following the global evolution of the Open Science movement, the IAI Conference of the Parties (CoP), at its 25th meeting (Bogota, 2017), instructed the Directorate to define and establish an open data policy and principles, considering the Open Data Policy adopted by IAI CoP-2 in 1995. Along these lines, the 26th Conference of the Parties (Guatemala, 2018) adopted the Open Data Policies and Principles for the IAI (Decision XXVI/45) whose purpose is to *facilitate the full and free exchange of data and information between Parties, Principal Investigators (PIs) and other stakeholders of the Institute.*[5] To achieve that purpose, it is noted that the IAI requires the sustained commitment of researchers to create, maintain, validate, describe, provide accessibility, and distribute high-quality data resulting from IAI-funded research.

In recent years, the global Open Science movement has advanced and strengthened in multiple directions.[6] Conceptually, a global consensus has been reached on the principles and qualities that research data must meet to be considered open (Findability, Accessibility, Interoperability, and Reusability – FAIR[7]). The principles that should govern the production and use of open data involving Indigenous Peoples (CARE principles) have also been established, focused on Collective benefit, Authority to control, Responsibility and Ethics[8,9]

In this context, this document updates the Open Data Policy and Principles for the IAI approved by CoP-26 in 2018, in two main directions: 1) to strengthen the IAI's commitment to compliance with the FAIR and CARE principles regarding the production, sharing and use of open data, and 2) to expand the IAI's commitment to open access publication not only of data, but also of publications produced by the Institute and resulting from IAI-funded research.

Scope of the Policy

This **Open Access to Data and Publications Policy** sets out the specific objectives, activities and resources through which the Institute will promote the open production, sharing and use of data and publications produced by the IAI or resulting from IAI-funded research. Therefore, all data and publications produced through IAI-funded activities and projects are covered by this policy.

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[3] https://www.iai.int/admin/site/sites/default/files/Cop1-DATA-POLICY-STATEMENTS.pdf

[4] https://www.iai.int/pdf/es/agreement_establishing_the_IAI_en.pdf

[5] https://www.iai.int/admin/site/sites/default/files/uploads/iai-cop-26-20a-e.pdf

[6] https://www.unesco.org/en/open-science

[7] Wilkinson, M. D., Dumontier, M., Aalbersberg, I. J., Appleton, G., Axton, M., Baak, A., ... & Mons, B. (2016). The FAIR Guiding Principles for scientific data management and stewardship. Scientific data, 3(1), 1-9.

[8] Carroll, S., Garba, I., Figueroa-Rodríguez, O., Holbrook, J., Lovett, R., Materechera, S., ... & Hudson, M. (2020). The CARE principles for indigenous data governance. Data science journal, 19.

[9] Brainard, J. (2021). Open access takes flight. Science, 371(6524), 16-20.

Definitions

Open data: Data that can be freely used, reused, and redistributed by anyone, and which is subject, at most, to the requirement of attribution and sharing in the same manner in which it appears. Data may be considered open if:

1. It is available in its entirety and at a reasonable reproduction cost, preferably by downloading it from the Internet, in a convenient and modifiable form.
2. It is provided in terms that allow its reuse, redistribution, and even integration with other datasets.
3. Everyone can use, reuse, and redistribute the data without any discrimination in terms of effort, individuals, or groups.

Open access: Free access to information and unrestricted use of digital resources by everyone. A publication can be considered open access if:

1. Its content can be freely and universally accessed, at no cost to the reader, through the Internet or any other means.
2. The author or copyright holder grants all potential users, irrevocably and for an unlimited time, the right to use, copy, or distribute the content, at least for non-commercial purposes, on the sole condition that due credit is given to the author.
3. The full version of the content has been deposited, in an appropriate electronic format, in at least one internationally recognized open access repository committed to open access.

FAIR Principles:[10] They provide a set of precise and measurable qualities that a dataset must follow to be Findable, Accessible, Interoperable, and Reusable, as detailed below:

1. Findable through catalogs and search engines. Data should be accompanied by appropriate contextual information in rich metadata and assigned a persistent, unique, and resolvable identifier (e.g., DOI). Both data and metadata should be machine-readable to facilitate discovery.
2. Data should be accessible by default and available through sustainable and reliable repositories with minimal delay, except where policies or national and international legislation prevent sharing as Open Data (e.g., HIPAA or other similar privacy restrictions). A license should clearly state the terms of access and use of the data.
3. Interoperable, with clear documentation using widely accessible language and understandable vocabularies across disciplines. Preference should be given to non-proprietary data and metadata file formats and international and community standards that facilitate data access, exchange, use and interpretation.
4. Reusable by other researchers, including those outside the discipline of origin. Data should be described in the metadata in sufficient detail, including provenance, structure, and other necessary information following domain-specific community standards. The license and conditions, including reuse, should be clearly indicated.

CARE Principles:[11] The CARE Principles for Indigenous Data Governance address the principles of collective benefit, authority to control, accountability and ethics, and their respective sub-principles. The CARE Principles detail that the use of Indigenous data should

[10] https://www.go-fair.org/fair-principles/

[11] https://www.gida-global.org/care

generate tangible benefits for indigenous collectives through inclusive development and innovation, improved governance and citizen participation, and lead to equitable outcomes.

1. Collective **benefits** are more likely to be realized when data ecosystems are designed to support Indigenous Nations and when the use/reuse of data for resource allocation is consistent with community values.
2. The United Nations Declaration on the Rights of Indigenous Peoples[12] affirms Indigenous Peoples' rights and interests in data and their authority to control their data. **Access** to "data for governance" is vital to support self-determination, and Indigenous Nations must actively participate in "data governance" to ensure the ethical reuse of data.
3. Given that most Indigenous data is controlled by non-Indigenous institutions, there is a **responsibility** to respectfully engage with those communities to ensure that Indigenous data use supports capacity building in community data use and the strengthening of Indigenous languages and cultures.
4. Similarly, the **ethics** of Indigenous Peoples must inform the use of data over time to minimize harm, maximize benefits, promote justice, and enable future use, following the free, prior, and informed consent of the communities where the research will be conducted.

Objectives of the Policy

Objective 1: Make data produced by IAI-funded research discoverable, accessible, interoperable and reusable.

Objective 2: Facilitate compliance with CARE principles for IAI-funded research involving Indigenous Peoples and local communities.

Objective 3: Promote open access publication of the products of IAI activities.

Objective 4: Increase capacities to share, use and reuse open data in the region.

Budgetary implications

Financial support for activities to implement this policy depends on the availability of external financial resources. To implement the objectives of this policy, the Directorate will seek external financial resources from donor Parties, development banks, foundations and other possible sources.

[12] https://www.un.org/development/desa/indigenouspeoples/declaration-on-%20the-rights-of-indigenous-peoples.html

Annex 2: Instructions and Resources for the Implementation of the Policy

To meet the expectations of this Policy, the IAI suggests that IAI grantees follow the following steps:

1. Data planning: Research data should be planned in advance and managed during the project and after its completion. Considering the various aspects of data management at the outset can save time and effort in later phases of the project. One tool that researchers can use for this purpose is a Data Management Plan (DMP).

- The IAI requires a Data Management Plan in certain programs (see program instructions for details).
- The IAI provides a Data Management Plan Guide and Template, which helps IAI grantees answer questions related to samples, data processing, privacy, and archiving, among other things.
- The Annex to the Belmont Forum's Digital Data and Product Management Plan poses questions to help researchers consider how to prepare and manage the outputs of their projects. It could also be used as a guide by IAI-funded researchers.
- If the future project includes work with Indigenous Peoples and local communities, the PMD should include information on how grantees will collect, manage, and share data following the CARE Principles.

2. Data Management: Good data planning and management will help improve project efficiency, facilitate grant reporting, and facilitate data sharing under this Policy. The Belmont Forum offers several resources that could help IAI grantees manage their data:

- Data Management Training Inventory. Search for training resources by geographic region, type of resource, and professional role.
- Best practices and data management standards. This resource includes a data policy comparison tool to help grantees understand the requirements of different Belmont Forum members and a data competency curriculum framework. Resources can also be searched by organization, category, or geographic region.
- Grantees can explore IAI's Harvard Dataverse Repository to see examples of shared datasets and get ideas on managing and preparing data for sharing.
- For biodiversity data, we recommend the GBIF platform (gbif.org): network of Latin American and Caribbean countries including at least 12 participating countries using the same data standard (DarwinCore) and metadata and an interoperable repository.

3. Data sharing:

- Deposit research data and accompanying metadata in a trusted, curated repository that is accessible to the public with minimal delay.
    - Timeliness increases the value of the data. The IAI requires funded research teams to share their datasets at specific times during the project (e.g., at the end of the first year for multi-year projects). However, principal investigators may request initial periods of exclusive data use. In each case, the Institute will explicitly define the duration of the exclusive use period. As a best practice, the IAI recommends that data from a specific study be shared at the time of, and in conjunction with, publication of the article describing the data.
    - A recipient of IAI funds should deposit its data set, whether quantitative or qualitative, fully documented for deposit in the IAI's Harvard Dataverse Repository. The Institute will train PIs and provide them with instructions on how to deposit their data in the IAI's Harvard Dataverse Repository. In

the case of topic-specific data (e.g., biodiversity), IAI grantees should deposit the data in specific data repositories (e.g., GBIF) and report their location to the Open Data specialist. Along with the data, share rich metadata describing the dataset, its provenance, structure, meaning of any abbreviations or terms, etc., i.e., all the information necessary for others to understand and reuse the data.
    - Some disciplines have specific metadata standards, such as the Digital Curation Centre's list, the Digital Curation Centre list, the Directory of Metadata Standards or Darwin Core for biodiversity data. Grant recipients can also consult this metadata guide and its How to FAIR examples.
- Assign a permissive open license to data and metadata for reuse.
    - The IAI fully recognizes that data and information from IAI-funded programs and projects belong to the Parties. Therefore, the Parties and/or principal investigator recipients (PIs) can decide how to license the data and what to allow regarding its reuse.
    - To facilitate reuse, the IAI recommends sharing data under a public domain dedication, such as Creative Commons CC0. Other options are the following licenses: Creative Commons Attribution (CC BY), Creative Commons Attribution-NonCommercial (CC BY-NC), or ShareAlike (CC BY-SA). The IAI's Harvard Dataverse Repository and the GBIF repository for biodiversity data allow researchers to select their preferred license.
- Ensure that data and metadata are archived with persistent identifiers (DOIs)
    - The IAI's Harvard Dataverse and GBIF repositories automatically assign a DOI when a dataset is deposited.
- Financial support may be available to defer reasonable data sharing costs, including those associated with data management, curation, hosting, and preservation. Grantees should consult with the IAI to confirm allowable costs. The IAI will evaluate these requests on a case-by-case basis, ensuring that financial resources are allocated efficiently and equitably. These costs are best budgeted for during the preparation of the Data Management Plan, outlining anticipated expenditures.
- To ensure compliance with the open data policy, the IAI will implement a process for periodic review of DMPs and data making submitted by researchers. This review will include regular checks to ensure that data is made available according to the agreed schedule and standards. The IAI may issue recommendations or corrective actions to ensure proper data dissemination.

4. Article sharing:

- Retain the necessary rights to share a copy of the research paper, regardless of the journal in which it is published.
    - These conditions should cover free and immediate reading rights as well as broad reuse rights.
    - This can be achieved by inserting text in the body of the manuscript at the time of submission that states: "For open access purposes, the author has applied a Creative Commons Attribution (CC BY or CC BY-NC) license to any version of the manuscript accepted by the author that is derived from this submission."
    - More information on rights retention can be found at Preservation of rights: A UKRN Handbook
    - Make electronic copies of research papers accepted for publication in a peer-reviewed journal and supported in whole or in part by the IAI, available immediately and free of charge upon publication in the journal. This may be achieved by publishing in an open access journal or by making a copy of the author-accepted manuscript available through a

Annex 3: Implementation Plan (2025-2030) of the Directorate for the Open Access to Data and Publications Policy

Objective 1: Make data produced by IAI-funded research discoverable, accessible, interoperable and reusable.

Activity 1.1: Consider existing good practices for managing and publishing topic-specific data, such as those of the Global Biodiversity Open Data Interface (GBIF).

Activity 1.2: Train IAI-funded research teams to prepare a data management plan before project initiation and apply good data management practices during and after project completion (see Annex for instructions and resources).

Activity 1.3: Develop and maintain an open data catalog in which research teams should share data produced under IAI-funded research projects.

Activity 1.4: Support networks of open data catalogs in Latin America and the Caribbean by aggregating its open data catalog to national or regional nodes, for example.

Objective 2: Facilitate compliance with CARE principles for IAI-funded research involving Indigenous Peoples and local communities.

Activity 2.1: Train research teams, including researchers from Indigenous Peoples and local communities, whose IAI-funded projects involve data generation by or with Indigenous Peoples and local communities to actively consider the CARE principles and the need to obtain the free, prior and informed consent of the communities where the research will be conducted.

Activity 2.2: Assess and monitor compliance with the CARE principles, with representatives of Indigenous Peoples and local communities, from the development of Data Management Plans to final project reports.

Objective 3: Promote open access publication of the products of IAI activities.

Activity 3.1: Develop and maintain an open access repository to facilitate the deposit and use of publications, including the results of IAI-funded research.

Activity 3.2: Publish the outputs of the activities of the different areas of the IAI in open-access format on its website, including reports, abstracts for decision makers, course programs, among others.

Activity 3.3: Encourage IAI-funded research teams to publish their data and research results in open access journals and/or open access repositories.

Objective 4: Increase capacities to share, use and reuse open data in the region.

Activity 4.1: Train end users (government experts, policy makers, academic institutions, civil society organizations, etc.) in the use and reuse of data and information produced by the IAI.

Activity 4.2: Assess the level of sharing, use, and reuse by academic and non-academic actors of data shared by IAI-funded research teams and encourage continuous improvement of activities aimed to make data discoverable, accessible, interoperable, and reusable.

Annex 4

Draft decisions of the Conference of the Parties

Directed to the Conference of the Parties

XXXIII/xx. The Conference of the Parties approves the Open Access to Data and Publications Policy