



Best practices for achieving 100% open-access publications by 2030



In its 2030 strategic agenda, INRAE underscored its [long-term commitment to open science](#). The institute has embraced the challenge of **improving the accessibility and dissemination** of knowledge, both within the academic ecosystem and society at large. In this guide, INRAE describes its best practices for achieving 100% open-access publications by 2030. One key priority is encouraging scientists to **deposit their work in open repositories**, such as [HAL INRAE](#), regardless of the outlet for the version of record.

INRAE's policies are fuelled by its adherence to the international open science movement, which is strongly supported by [UNESCO](#).

The EU is adopting an increasing number of policies in favour of open science, as reflected in recent changes by Horizon Europe. Furthermore, the European Commission is encouraging major shifts in how research assessments are conducted. As outlined in its [Agreement on Reforming Research Assessment](#), the Coalition for Advancing Research Assessment (COARA) is asking institutions to utilize a more qualitative evaluation approach in which practices promoting open science are rewarded. INRAE is one of the signatories.

In France, the government's [National Plan for Open Science](#) advocates a number of actions for improving access to publications, data, and source code. It has also built a framework to boost targeted collaborations among all members of French higher education and research. The French National Research Agency has also adopted [open science policies](#) that are made clear in its grant agreements.

This guide is structured as follows: each section focuses on a specific topic and contains background information, concise recommendations, and resources for further reading (information sheets, bibliographical references, or reliable websites).

In brief

INRAE researchers can publish where they choose, regardless of the target journal's economic model. However, the institute asks that all articles be made openly available in one form or another. INRAE makes open access easy: researchers can simply deposit full-text copies of their work in HAL INRAE, the institute's open repository. The data or source code should be similarly deposited, to promote reproducibility. Additionally, INRAE recommends adopting certain practices to limit publishing expenses. Since 2023, INRAE has been conducting evaluations and granting promotions based on the researcher's corpus of open-access publications, which are directly downloaded from HAL INRAE.

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1 Publish where you please but proceed with caution

Scientific publishing has evolved to keep pace with the digital revolution. It is now easier than ever to quickly access scientific information. Publication and peer review can be uncoupled (i.e., post-publication review). We are also witnessing the emergence of diverse business models¹.

INRAE supports the principle of bibliodiversity, a concept that underscores the need for diverse publishing outlets and freedom of choice for scientists. Against this backdrop, INRAE recommends that scientists take great care when assessing potential outlets for their work. Particular attention should be paid to the quality of peer review, journal integrity, and the measures taken to encourage reproducibility. The institute urges its researchers to make all their publications open access, regardless of the outlet for the version of record ([↗ see 3 Ensure access to your publications via open repositories](#)).

INRAE itself publishes scientific and technical journals whose practices reflect the [institute's commitment to open science](#). INRAE also supports various related initiatives, such as [Peer Community In](#), [Episciences](#), and [Open U Journals](#), which are 100% open access (diamond model).



Our recommendations

When exploring your publishing possibilities, mind the budgetary gap!

From an institutional perspective, it can prove more costly when scientists pay to make their articles immediately accessible—by covering article processing charges (APCs)—than when the article is accessed via a journal subscription². For example, this decision is consistently expensive for INRAE (over €970,000 spent in 2021³). It is consequently important to

- **choose where you publish with care** ([↗ see information sheet](#)) **and remain wary of unethical practices**. One red flag is pricey APCs (> €2,000) that far exceed typical production costs⁴. Another is suspiciously high acceptance rates, which are common among predatory publishers.
- **plan ahead by budgeting for APCs in research projects** whenever possible. When these expenses are paid via institutional sources, make sure you apply the proper invoicing codes ([↗ see information sheet](#)), which will allow INRAE to track spending in this budgetary category.
- **not pay APCs if you end up publishing in a journal** that uses the hybrid model because institute-level costs will be greater (see above). In such cases, INRAE may be hit from both sides if it is paying for the APCs as well as the journal subscription.

¹The traditional open-access publication models are gold or hybrid, in which APCs must be paid, as well as diamond, in which neither authors nor readers pay for publication/access.

²INRAE's annual research publication budget is around €2.7 million. If dedicated exclusively to paying APCs (mean of ~ €2,000), these funds would cover no more than 1,350 articles per year, or just 20% of INRAE's current publication output.

³Expenditure estimates from INRAE's financial monitoring system: 535 articles at a mean cost of around €1,850 in 2021.

⁴Grossmann, A. and Brembs, B. (2021). Current APCs at academic publishers [version 2; peer review: 2 approved]. *F1000research* 2021, 10:20. <https://doi.org/10.12688/f1000research.27468.2>

2 Myriad ways to make your work open access

Traditional written texts (e.g., articles, books, or book chapters) are not the only types of publications open to researchers. It is also possible to publish **data, algorithms, and source code** ([↗ see information sheet](#)). Resource sharing is a holistic scientific approach that fits with CSR⁵ principles and that allows others to build on a foundation you have established. In addition, **research reproducibility** only stands to benefit from the greater availability of data and source codes.

In the case of written texts, you can submit **preprints** to dedicated platforms, such as [bioRxiv](#), and benefit from peer review and feedback. Additionally, publishing preprints is a strategy that aligns with **INRAE's open access objectives**, given the article will pre-exist in a freely accessible form regardless of whether it is ultimately accepted for publication at a subscription-based journal.



Our recommendations

- **Ideally, researchers should deposit their preprints in reliable repositories**, such as [HAL INRAE](#), [Zenodo](#), [bioRxiv](#), or [Open Research Europe \(ORE\)](#) (for EU research), which can help ensure that resources comply with FAIR principles⁶. In particular, they will be assigned a numerical identifier (e.g., DOI), and peer review can be requested via a variety of mechanisms (sometimes directly from the repositories), assuming they exist for a given field of expertise (e.g., [Epreviews](#) in HAL, [Peer Community In](#) [ORE]).
- **Deposit data and source code in trustworthy repositories** that ensure resource compliance with FAIR principles. It is optimal to choose a discipline-specific repository. However, if none exists, data can be deposited in INRAE's general collection ([recherche.data.gouv.fr](#)) ([↗ see information sheet](#)).
- When you publish a **scientific article, deposit the associated dataset and source code** in a dedicated repository (taking care to comply with current legislation; [↗ see information sheet](#)). You can also write a data paper ([↗ see information sheet](#)) describing your dataset and then reference both the data and the data paper in the scientific article. Do not put your data or source code in the article's supplementary materials.
- Make it a point to **publish negative results**. It is important to share all kinds of research outcomes via preprints or other suitable alternatives. When a research "failure" is published along with the research methodology, science advances as a whole because lessons are learned from both successes and failures. Such an approach is also consistent with INRAE's CSR requirements and commitments.
- **In the case of technical publications**, it is possible to deposit articles, reports, guides, book chapters, training modules, and training materials in HAL INRAE. **In tandem, it is ideal to publish technical materials** on open-access platforms or in open-access journals (e.g., INRAE's technical journals [Sciences Eaux & Territoires](#) or [Nov'AE](#)).

⁵CSR: corporate social responsibility

⁶Wilkinson, M., Dumontier, M., Aalbersberg, I. *et al.* (2016). The FAIR Guiding Principles for scientific data management and stewardship. *Sci Data* 3, 160018. <https://doi.org/10.1038/sdata.2016.18>

③ Facilitate access to your publications via open repositories

Researchers are **strongly encouraged** to deposit full copies of **all their work in HAL INRAE**, regardless of the original publication outlet. **The institute's repository ensures the long-term preservation and broad-scale distribution of technical and scientific information.** In addition, the repository can help researchers and research units streamline the administrative process of preparing for individual or collective evaluations.



Our recommendations

- **Take the time to periodically deposit your work in HAL INRAE.** Do not wait until your evaluation rolls around. If your article was published in a subscription journal that required a copyright transfer, you can always deposit the postprint (i.e., the accepted version of your manuscript prior to journal typesetting and formatting) in HAL INRAE, after the requisite embargo period—6 months for the sciences or 12 months for the humanities and social sciences—as stipulated by French law (*La loi pour une République numérique*). If you retained copyright, you may immediately deposit your postprint in HAL INRAE. You should provide a link to the version of record that appears in the journal. If you have an evaluation coming up, you can deposit preprints for any manuscripts in submission (starting up to six months before your evaluation date⁷).
- When publishing in subscription journals, you can choose to **retain copyright, which is the strategy** recommended by funding agencies and the French Ministry of Higher Education and Research. In this approach, you apply an open-access licence (e.g., Creative Commons CC-BY) to all the versions of your article preceding the published version of record ([↗ see official guide](#)).
- You can use academic networking platforms (e.g., Research Gate, Academia, Mendeley) to promote your work, but you must avoid providing full access to your publications. These platforms cannot guarantee long-term access to your work and often allow the presence of unauthorized article versions.

⁷If you are unclear about your rights as an author, you can visit [Sherpa Romeo](#), a website that provides copyright information for all journals and article versions (e.g., preprint, postprint, or version of record). You can also consult the information provided by [DipSO](#).

4 Ensure recognition of your work and that of your colleagues

A central tenet of the open science movement is that knowledge, a common good, should circulate freely. Such assumes that stakeholders will act with scientific integrity and, most importantly, recognize all contributions made. Thus, best practices involve highlighting "who has done what" as well as instances of reuse (e.g., of publications, data, or source codes). It is also important to employ licences to circumscribe how your work may be reused.



Our recommendations

- Make sure you apply [institutional guidelines for researcher affiliations](#) so that all supervisory bodies are properly credited.
- Also, you must implement INRAE's **authorship recommendations** ([↗ see information sheet](#)), paying particular attention to CRediT specifications (*Contributor Roles Taxonomy*).
- Create **ORCID and iDHAL** identifiers so that all your work is properly associated with you. This process also means you can take advantage of various services, such as automatically updating your CV, logging into specialized sites, and generating administrative files for funding organizations or evaluation committees. You can indicate these identifiers in INRAE's central information system (myaccount.intranet.inrae.fr), a tool that allows you to quickly update your institutional information.
- Adopt the strategy of [retaining copyright](#) for your work, as recommended by the Committee for Open Science, and, more generally, get into the habit of **clearly indicating licencing information** on all your work, which is key in defining its conditions of reuse ([↗ see information sheet](#)).
- Before utilizing **other people's work** (publications, data, source codes), make sure to verify their licencing conditions, which can affect how you licence your work in turn ([↗ see information sheet](#)).
- It is essential to acknowledge **any contributions by non-scientists**, especially in the case of participatory research. At a minimum, make sure these collaborators are included in the acknowledgements, and be sure to name any partnership agreements.

5 Generate value from scientific knowledge

Researchers must actively counter the spread of fake science. Possible actions include serving as a scientific reviewer, providing feedback on preprints, becoming a member of journal editorial boards, or donating your time to efforts such as [Peer Community In](#).



Our recommendations

- Preferentially invest your energy in journals or other research outlets that are committed to open science, display a high degree of integrity, and pay attention to issues of reproducibility.
- Watch out for publishers with unethical practices, such as calling on you to coordinate special issues ([↗ see information sheet](#)).
- Your scientific reviews of other people's manuscripts are also work worthy of recognition. Like scientific texts, they can be assigned a DOI to facilitate referencing and deposited in HAL INRAE (upon deposit, choose "other scientific publication").
- Peer-reviewed data papers or software papers are helpful for showcasing published datasets—or source codes—as they attest to resource quality

⑥ Understand that commitment to open access is valued during evaluation and promotion

INRAE has long espoused an assessment system that awards diversity in research activities and output. In this vein, the institute prioritizes qualitative criteria over quantitative criteria (see [Guide for Specialized Scientific Commissions](#)). For example, evaluators assess a researcher's contributions to furthering open science, freely disseminating knowledge, and contributing to the management and exchange of data and source codes.

As of 2023, the administrative files submitted to evaluation or promotion committees must provide access to full authorized versions of your scientific articles (see [Facilitate access to your publications via open repositories](#)).

These files must include publications directly exported from HAL INRAE (<https://export.hal.inrae.fr>; see [online training opportunities](#)).

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