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Study on open access to publications and research data management and sharing within ERC projects

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► **To cite this version:**

André Dazy. Study on open access to publications and research data management and sharing within ERC projects. [0] Couperin.org. 2018. hal-03196116

HAL Id: hal-03196116

<https://hal.science/hal-03196116>

Submitted on 12 Apr 2021

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COUNTRY PROFILE

FRANCE

STUDY ON OPEN ACCESS TO PUBLICATIONS AND
RESEARCH DATA MANAGEMENT AND SHARING
WITHIN ERC PROJECTS

Author: André Dazy

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LIST OF ABBREVIATIONS

ABES – Higher Education Bibliographic Agency

AllEnvi – National Research Alliance for the Environment

ANR – National Research Agency

APCs – Article Processing Charges

AvieSan – National Alliance for Life Sciences and Health

BSN – Digital Scientific Library

CC-BY – Creative Commons Attribution Licence

CCSD – Centre for Direct Scientific Communication

CEA – French Alternative Energies and Atomic Energy Commission

CIRAD – French Agricultural Research Centre for International Development

CNRS – The National Centre for Scientific Research

CPU – National Rectors' Conference

DMP – Data Management Plan

EHESS – School of Advanced Studies in the Social Sciences

ERC – European Research Council

ETD – Electronic Theses and Dissertations

EU – European Union

FAIR – Findability, Accessibility, Interoperability, and Reusability

HAL – Hyper-articles online

HCERES – The High Council for Evaluation of Research and Higher Education

HEI – Higher Education Institution

IFREMER – French Research Institute for Exploitation of the Sea

INCA – French National Cancer Institute

Inist-CNRS – Institute for Scientific and Technical Information

INRA – French National Institute for Agricultural Research

INRIA – French National Institute for Computer Science and Applied Mathematics

INSERM – French National Institute for Health and Medical Research

IPR – Intellectual Property Rights

IRD – French National Research Institute for Sustainable Development

IRSTEA – French National Research Institute of Science and Technology for Environment and Agriculture

LIBER – Association of European Research Libraries

MoU – Memorandum of Understanding

OA – Open Access

OFIS – French Office for Scientific Integrity

ORCID – Open Researcher and Contributor ID

OS – Open Science

ProdINRA – The INRA Open Archive

RDM – Research Data Management

SSH – Social Sciences and Humanities

STM – Science, Technical Sciences and Medicine

TDM – Text and Data Mining

TEL – Platform for the Self-Archiving of Thesis Manuscripts (thèses-EN-ligne)

UnivOAK – The Institutional Archive Platform for Alsatian institutions of Higher Education and Research

URL – Uniform Resource Locator

1. LEGAL PROVISIONS RELEVANT TO THE TOPICS OF OPEN ACCESS TO PUBLICATIONS AND OF RESEARCH DATA MANAGEMENT, SHARING AND REUSE

1.1. Legal provisions in France in relation to dissemination of research results, open access to publications, copyright and intellectual property laws

The Digital Republic Act (LOI n° 2016-1321 du 7 Octobre 2016 pour une République numérique)¹ governs the provision of open access (OA) to research publications in France. This law regulates the digital economy, online cooperative economy, data protection and access to the Internet. Two articles are of specific concern for scholarly communication, as they relate directly to OA, open data as well as text and data mining (TDM).

Article 30² concerns OA and creates a new right for those who conduct publicly funded research. Researchers have the right to publish an OA copy of their final manuscript of a scientific article accepted for publication in a scientific journal, even if they have granted exclusive rights to the publisher, after a maximum of 6 months in STM and 12 months in SSH. Additionally, since 1 September 2016, the submission of electronic theses to the national repository called theses.fr³ is mandatory for all institutions according to the electronic thesis and dissertations (ETD) decree⁴ (Article 25). OA to thesis though is granted via TEL⁵, platform run by HAL, the main OA repository in France, only if the author decides to.

The Code of Intellectual Property (Article L112-2)⁶ grants protection to authors for their scientific work. All researchers hold the ownership of the copyright of their publications. This is also specified in the Code of Education (Article L 952-2),⁷ which states that researchers enjoy full independence and freedom of expression in the exercise of their teaching duties and research activities.

1.2. Legal provisions in France in relation to research data management, sharing and reuse, including copyright exemptions

The Code of Research (Article L112-1)⁸ specifies that one of the objectives of public research is to promote OA to scientific data. Research data are ruled by the article 30 of the Digital Act. More broadly, data produced by research institutions and in the framework of their public service mission are considered as administrative documents and are therefore communicable to any person who requests it, except legal exceptions⁹ (when data either concerns national defence, public safety of the State or the safety of the establishment, is considered a business or medical secret, or is protected by copyright). This is specified in the Code of relations between the public and the administration, in the book III regarding the access to administrative documents and reuse of public information.¹⁰ In addition, the Free Re-use of Public Sector

¹ <https://www.legifrance.gouv.fr/eli/loi/2016/10/7/ECFI1524250L/jo/texte> (available in French)

² https://www.legifrance.gouv.fr/eli/loi/2016/10/7/ECFI1524250L/jo/article_30 (available in French)

³ <http://www.theses.fr/> (available in French)

⁴ <https://www.legifrance.gouv.fr/affichTexte.do?cidTexte=JORFTEXT000032587086> (available in French)

⁵ <https://tel.archives-ouvertes.fr/> (available in French)

⁶ https://www.legifrance.gouv.fr/affichCodeArticle.do;jsessionid=11B7584405EBAEEE5B0F233808E5E7F1.tplgfr30s_1?idArticle=LEGIARTI000006278875&cidTexte=LEGITEXT000006069414&dateTexte=20171121 (available in French)

⁷ https://www.legifrance.gouv.fr/affichCodeArticle.do;jsessionid=11B7584405EBAEEE5B0F233808E5E7F1.tplgfr30s_1?idArticle=LEGIARTI000006525617&cidTexte=LEGITEXT000006071191&dateTexte=20171121 (available in French)

⁸ https://www.legifrance.gouv.fr/affichCodeArticle.do;jsessionid=31E1BC17B2C9B4C37E4299A676C44128.tplgfr42s_2?idSectionTA=L.EGISCTA000006151273&cidTexte=LEGITEXT000006071190&dateTexte=20171207 (available in French)

⁹ https://www.legifrance.gouv.fr/eli/loi/2016/10/7/ECFI1524250L/jo/article_30 (available in French)

¹⁰ https://www.legifrance.gouv.fr/affichCodeArticle.do;jsessionid=57D287D8807C2102F91F3FBDAC409A5E.tplgfr22s_2?idSectionTA=LEGISCTA000031367685&cidTexte=LEGITEXT000031366350&dateTexte=20180209 (available in French)

Information Act¹¹ applies to these administrative documents. This Act states that public sector data are free and re-usable.

Article 30 of the Digital Republic Act ensures the re-usability of open data derived from public funding. Thus, a publisher of a scientific publication cannot limit the reuse of the research data made public in the publication (except if they are protected by specific rights or regulations). Article 38 of the Digital Republic Act aimed to establish a copyright exception for TDM. Concretely, it aimed to permit researchers to make electronic copies or reproductions realised from a legal original copy for the purpose of TDM included in or associated with a scientific publication for the needs of public research, excluding commercial exploitation. However, the Council of State (an independent judicial body that advises the government) ruled that this Article was in breach of the European Directive on Copyright, which does not currently allow TDM exception, and therefore it has never entered into force. If the TDM exception is adopted at the EU level, then Article 38 is expected to come into force in France.

2. NATIONAL AND REGIONAL POLICIES AND GUIDELINES RELATED TO OPEN SCIENCE

2.1. National and regional policies and guidelines related to open access to publications adopted by the National Research Agency and the National Rectors' Conference

The National Research Agency (ANR)¹² is the main research funder in France whose funds are allocated by the Ministry of Higher Education and Research.¹³ It provides funding to public research organisations, universities, and private companies for project-based research in all scientific domains. It adopted an OA policy¹⁴ in November 2007, strongly encouraging the deposit of publications based on ANR-funded research in open archive systems, and particularly in HAL¹⁵, the centralised national OA archive. ANR's Humanities and Social Sciences department adopted additional policy measures recommending systematic deposit of publications in HAL-SHS¹⁶ and setting up a verification procedure with the managers of the funded projects regarding the deposit of publications based on publicly funded research.

Prior to the adoption of the Digital Republic Act, the National Rectors' Conference (CPU) adopted a motion¹⁷ in 2015 proposing that OA to scientific publications should be mandatory by law, with a maximum embargo period of 6/12 months (for STM/SSH respectively); that institutions should be provided with legal certainty allowing them to require the deposit of scientific publications in public archives; and that a permanent exception should be adopted to permit TDM of the scientific publications purchased by the French institutions. However, CPU does not have an OA mandate. In 2016, nevertheless, they announced that they support the free provision of scientific publications and TDM.¹⁸

¹¹ <https://www.legifrance.gouv.fr/eli/loi/2015/12/28/PRMX1515110L/jo/texte> (available in French)

¹² <http://www.agence-nationale-recherche.fr/> (available in French and English)

¹³ <http://www.enseignementsup-recherche.gouv.fr/cid56386/qui-finance-la-recherche.html> (available in French)

¹⁴ http://www.agence-nationale-recherche.fr/informations/actualites/detail/?tx_ttnews%5btnews%5d=159 (available in French)

¹⁵ <https://hal.archives-ouvertes.fr/> (available in French and English)

¹⁶ <https://halshs.archives-ouvertes.fr/> (available in French and English)

¹⁷ <http://www.cpu.fr/actualite/les-donnees-de-la-science-un-bien-commun/> (available in French)

¹⁸ <http://www2.cnrs.fr/presse/communique/4391.htm> (available in French)

2.2. National and regional policies and guidelines related to research data management, sharing and reuse adopted by the National Research Agency and the National Rectors' Conference

Currently there are no national or regional policies and guidelines related to research data management, sharing and reuse adopted by the CPU in France. Since 2017, ANR recommends and informs applicants that it is important to consider how research data is managed while preparing a research proposal, but does not require Data Management Plans (DMPs).¹⁹ The National Roadmap for Research Infrastructures²⁰, issued in 2016 by the Ministry of Higher Education, Research and Innovation, insists though that storage and making data available are essential parameters of research today. In addition, President Macron, in its speech on artificial intelligence²¹ in April 2018, announced that France will open publicly-funded research data in the framework of the Open Science (OS) plan to be launched by the Ministry of Higher Education, Research and innovation in 2018.

2.3. National and regional policies and guidelines related to open science more broadly adopted by the National Research Agency and the National Rectors' Conference

On July 4, 2018 Frédérique Vidal, Minister of Higher Education, Research and Innovation, launched the national OS plan²² at the annual congress of the Association of European Research Library (LIBER). Among the actions implemented by this national plan, the obligation to disseminate publicly funded articles, books and research data in OA has been announced. The details of the implementation of this plan have not yet been announced.

In the framework of Open Government Partnership, there is a dedicated commitment to OS; the Ministry of Higher Education, Research and innovation induces the democratisation of access to knowledge, useful for research, training, society.²³ Two policy solutions have been initiated regarding OS infrastructure for open data and sharing of scientific results.

The Policy for Ethics and Research Integrity²⁴ of ANR describes the fundamental principles to be adhered to in research or research training activities, and the rights and duties of those who support, evaluate and perform research work. The researchers and applicant organisations, along with anyone who is involved in the activities of ANR, must comply with this policy. Additionally, a National Charter of Research Ethics,²⁵ signed by CPU and seven research institutions (CNRS²⁶, INSERM²⁷, INRA²⁸, INRIA²⁹, IRD³⁰, CIRAD³¹, Institut

¹⁹ <http://www.agence-nationale-recherche.fr/suivi-bilan/historique-des-appels-a-projets/appel-detail1/appel-a-projets-generique-2018/> (available in French and English)

²⁰ <http://www.enseignementsup-recherche.gouv.fr/cid70554/la-feuille-de-route-nationale-des-infrastructures-de-recherche.html> (available in French)

²¹ <http://www.elysee.fr/declarations/article/transcription-du-discours-du-president-de-la-republique-emmanuel-macron-sur-l-intelligence-artificielle/> (available in French)

²² <http://m.enseignementsup-recherche.gouv.fr/cid132531/plan-national-pour-la-science-ouverte-discours-de-frederique-vidal.html> (available in French)

²³ <https://gouvernement-ouvert.etalab.gouv.fr/pgo-concertation/topic/5a1bfc1b498edd6b29cb10d4> (available in French)

²⁴ <http://www.agence-nationale-recherche.fr/en/about-anr/quality-and-ethics/policy-for-ethics-and-research-integrity/> (available in English and French)

²⁵ <https://www.unilim.fr/recherche/2015/09/15/charte-nationale-de-deontologie-des-metiers-de-la-recherche/> (available in French)

²⁶ <http://www.cnrs.fr/> (available in French and English)

²⁷ <https://www.inserm.fr/> (available in French and English)

²⁸ <http://www.inra.fr/> (available in French and English)

²⁹ <https://www.inria.fr/> (available in French and English)

³⁰ <http://www.ird.fr/> (available in French and English)

³¹ <http://www.cirad.fr/> (available in French and English)

Curie³²) during the Research Commission of June 29, 2015, was prepared in accordance with the Singapore Statement on Research Integrity³³, the European Code of Conduct for Research Integrity³⁴, and the EU Research and Innovation programme Horizon 2020. All French public research institutions and HEIs are responsible for implementing this charter and adapting it based on the specific provisions that apply to their respective research fields and professions. In 2017, the High Council for Evaluation of Research and Higher Education (HCERES)³⁵ created the French Office for Scientific Integrity (OFIS³⁶), which is in charge of the development of standards and recommendations, and the support to higher education and research institutions in the fulfilment of their obligations.

A French collective of researchers and professionals in scientific publishing launched the Jussieu call³⁷ in October 2017. It aims to support OS and bibliodiversity through the development of innovative scientific publishing models, reform of the research evaluation system, investment efforts in open source tools, laws permitting TDM, accessibility to national and international infrastructures. These measures promote the preservation and circulation of knowledge over any privatisation of contents. The Jussieu call has already been signed by a large number of major research institutions in France.

More broadly, the French government joined the Open Government Partnership in 2015 and has issued a plan for a transparent and collaborative public action where OA to public sector data is promoted.³⁸

3. OPEN SCIENCE RELATED POLICIES AND REQUIREMENTS OF MAJOR FUNDERS AND OTHER MAJOR ACTORS FROM THE RESEARCH SECTOR AT NATIONAL AND/OR REGIONAL LEVEL

3.1. Policies and requirements related to open access to publications of major research funders and other research sector actors in France

In France, national research institutions such as IFREMER (French Research Institute for Exploitation of the Sea)³⁹, IRSTEA (French National Research Institute of Science and Technology for Environment and Agriculture)⁴⁰, CIRAD (French Agricultural Research Centre for International Development)⁴¹, INRA (French National Institute for Agricultural Research)⁴² and INRIA (French National Institute for Computer Science and Applied Mathematics)⁴³ have open archive mandates. These mandates link open archive depositing and evaluation of researchers. Concretely, at IRSTEA⁴⁴, since 1994 the mandate has required post-prints to be posted in the institutional open archive. According to this mandate, only the posted publications should be taken into account for the evaluation of researchers. A similar mandate has been in place at INRIA⁴⁵ since 2013: only full-text articles in the HAL-INRIA⁴⁶ portal are taken into account in the

³² <https://curie.fr/> (available in French and English)

³³ <https://wcrif.org/documents/326-singapore-statement-lettersize/file> (available in English)

³⁴ <http://ec.europa.eu/research/index.cfm?&na=na-240317-1&pg=newsalert&year=2017> (available in English)

³⁵ <http://www.hceres.fr/> (available in French and English)

³⁶ <http://www.hceres.fr/ACTUALITES/Toutes-les-actualites/Le-college-du-Hceres-valide-la-creation-de-l-Office-francais-d-integrite-scientifique> (available in French)

³⁷ <https://jussieucall.org/jussieu-call/#call> (available in English and French)

³⁸ <https://www.etalab.gouv.fr/plan-daction-national> (available in French)

³⁹ <http://wwwz.ifremer.fr/> (available in French)

⁴⁰ <http://www.irstea.fr> (available in French and English)

⁴¹ <http://www.cirad.fr/> (available in French and English)

⁴² <http://www.inra.fr/> (available in French and English)

⁴³ <https://www.inria.fr> (available in French and English)

⁴⁴ <http://www.irstea.fr/> (available in French and English)

⁴⁵ <https://www.inria.fr/en/news/news-from-inria/inria-champions-open-access> (available in English and French)

⁴⁶ <https://hal.inria.fr/> (available in French and English)

research teams' activity reports. INRIA recommends the use of the Creative Commons Attribution (CC BY) licence for all deposits in HAL.

Other organisations adopted more flexible mandates. Since 2010, the mandate of INRA⁴⁷ requires a bibliographic record of the publication to be made available. In 2011, the organisation introduced the requirement to deposit full texts in the open archive ProDINRA⁴⁸. In addition, INRA published a charter⁴⁹ for OA to publications and research data in 2016. At CIRAD⁵⁰ and IFREMER, the mandates concern publications in the latest author version and grey literature. Among teaching institutions, Arts et Métiers ParisTech⁵¹ has adopted a directive to deposit publications and the University of Angers⁵² formalised a mandate following the model of the University of Liège⁵³ where only the publications deposited in the institutional archive are taken into account in the evaluation of researchers. Adopted by the Board of Directors of the University of Angers in 2013, along with the creation of the institutional open archive, the mandate states that the metadata for scientific production generated since 2008 must be referenced and the full text of articles, published since 2012, must be deposited in their institutional repository.⁵⁴

3.2. Research data related policies and requirements of major research funders and other research sector actors in France

INRA, in its charter for OA to publications and research data, states that data must be open and accessible free of charge by default in accordance with the Law on Free Re-use of Public Sector Information.⁵⁵ IRSTEA has published a practical guide for managing research data in April 2017.⁵⁶ Some universities have also developed their own services to help researchers write DMPs. The University of Paris Diderot, for example, issued guidelines on how to prepare DMPs.⁵⁷

3.3. Policies and requirements related to open science

In October 2017, the National Research Alliance for the Environment (AllEnvi)⁵⁸ and the National Alliance for Life Sciences and Health (AvieSan),⁵⁹ gathering the main French research institutions in health and environmental disciplines, declared that they recognise preprints (particularly in biology) as a valid form of scientific communication. They recognise that preprints should be taken into account in the processes of hiring, evaluation and promotion of researchers as well as in the management of laboratories and in project evaluation. Some institutions have already implemented ORCID⁶⁰ locally in their information system, for instance IFREMER. CIRAD, IRSTEA and INRA recommend researchers to create an ORCID account, and the French National Cancer Institute (INCa)⁶¹ has adopted ORCID as well. Finally,

⁴⁷ <http://institut.inra.fr/Reperes/Documents/Positions-institutionnelles/Politique-de-l-Inra-pour-le-libre-acces-a-l-information-scientifique> (available in French and English)

⁴⁸ <http://prodinra.inra.fr/?locale=en> (available in French and English)

⁴⁹ <https://www6.inra.fr/datapartage/Documents-de-reference/Charte-Open-Access-de-l-INRA2> (available in French)

⁵⁰ https://agritrop.cirad.fr/mention_legale.html (available in English)

⁵¹ <https://artsetmetiers.fr/> (available in French)

⁵² <http://www.univ-angers.fr/en/index.html> (available in French and English)

⁵³ <http://lib.ulg.ac.be/fr/content/open-access-l-uliège> (available in French and English)

⁵⁴ <http://www.univ-angers.fr/fr/recherche/publications.html> (available in French and English)

⁵⁵ <https://www.legifrance.gouv.fr/eli/loi/2015/12/28/PRMX1515110L/jo/texte> (available in French)

⁵⁶ <https://donnees-recherche.irstea.fr/wp-content/uploads/2017/05/Guide-pratique-pour-la-gestion-des-donn%C3%A9es-de-recherche-avril-2017-VF.pdf> (available in French)

⁵⁷ <https://appui-recherche.univ-paris-diderot.fr/data-management-plan-dmp-guide-de-redaction> (available in French)

⁵⁸ <https://www.allenvi.fr/actualites/2017/preprints-communication-scientifique-recevable/> (available in French and English)

⁵⁹ <https://www.aviesan.fr/en> (available in English and French)

⁶⁰ <https://orcid.org/> (available in English and French)

⁶¹ <http://en.e-cancer.fr/> (available in English and French)

OpenEdition⁶² has also integrated ORCID. A national discussion has begun around the use of ORCID and the need to establish a consortium, which would enable the French scientific community to apply a coordinated approach to ORCID implementation. The ongoing discussion will result in the adoption of this identifier at the national level in 2018 or 2019. In addition, a memorandum of understanding (MoU)⁶³ has been signed between ORCID and the Higher Education Bibliographic Agency (ABES), the supplier of a national identifier called IdRef⁶⁴, given to all French PhD holders. This MoU has laid down the foundations for mutual cooperation.

4. OPEN SCIENCE RELATED INFRASTRUCTURE

According to OpenDOAR there are currently more than 120 open repositories for publications in the French academic environment.⁶⁵ Created in 2001, HAL is the main centralised repository operating on a national level in France and it is run by the Centre for Direct Scientific Communication (CCSD)⁶⁶. It has approximately 120 institutional portals and gathers around 20% of the French publications. The publications from the major research institutions like INRIA, INSERM, Institut Pasteur, IRD, CIRAD, CEA⁶⁷, IRSTEA, universities and Grandes Ecoles (schools for training engineers) are hosted in this archive. Some research institutions, however, have chosen to develop their own repositories, for example IFREMER developed Archimer.⁶⁸ Similarly, HEIs (who are eager to gain more visibility and manage the outputs of the institution better) have also developed their own repositories for publications like the University of Strasbourg with univOAK⁶⁹ or the University of Angers with Okina.⁷⁰ In addition, researchers may transfer their articles from HAL to various other repositories, for instance, to arXiv⁷¹ in the field of Physics, Mathematics and Computer Science, PubMed Central⁷² in the field of Life Sciences or to RePEc (Research Papers in Economics)⁷³ in the field of Economics. The catalogue theses.fr gathers all French PhD theses.

There are a number of initiatives promoting OA journals in the country. For example, CNRS has set up an important initiative regarding OA journals with the Revues.org⁷⁴ platform, founded in 1999. This platform, which specialises in Humanities and Social Sciences is operated by OpenEdition⁷⁵ as a joint service unit bringing together CNRS, two universities (Aix-Marseille⁷⁶ and Université d'Avignon et des Pays de Vaucluse⁷⁷) and a Grande Ecole (EHESS⁷⁸). OpenEdition hosts more than 460 journals, and 75% of them are OA. Episciences.org⁷⁹ is another notable initiative by CCSD. Its purpose is to promote the emergence of epi-journals, namely OA electronic journals taking their content from among the preprints deposited in open archives such as arXiv or HAL that have not been published elsewhere. The University Nice Sophia

⁶² <https://www.openedition.org/?lang=en> (available in English and French)

⁶³ <https://fil.abes.fr/2016/07/06/labes-et-oid-concluent-un-protocole-dentente-memorandum-of-understanding/> (available in French)

⁶⁴ <https://www.idref.fr/autorites.jsp> (available in French)

⁶⁵ <http://www.opendoar.org/find.php> (available in English)

⁶⁶ <https://www.ccsd.cnrs.fr/en/> (available in English and French)

⁶⁷ <http://www cea.fr/english/> (available in English)

⁶⁸ <http://archimer.ifremer.fr/> (available in English)

⁶⁹ <https://univoak.eu/> (available in French)

⁷⁰ <http://okina.univ-angers.fr/> (available in French)

⁷¹ <https://arxiv.org/> (available in English)

⁷² <https://www.ncbi.nlm.nih.gov/pmc/> (available in English)

⁷³ <http://repec.org/> (available in English)

⁷⁴ <http://journals.openedition.org/> (available in French)

⁷⁵ <https://www.openedition.org/> (available in French and English)

⁷⁶ <https://www.univ-amu.fr/en> (available in English and French)

⁷⁷ <http://univ-avignon.fr/> (available in English and French)

⁷⁸ <https://www.ehess.fr/en> (available in English and French)

⁷⁹ <https://www.episciences.org/> (available in English)

Antipolis⁸⁰ is working along with the database Revel⁸¹ to promote OA publishing. The University of Bordeaux also provides a portal of OA scientific journals.⁸²

There are approximately 20 repositories for data in France listed in re3data.⁸³ Although there is no central repository, many institutions have created their own research data repositories based on their specific fields of research. For example, IFREMER has established the SEANOE repository to host research data in the sea field.⁸⁴

The Digital Scientific Library (BSN)⁸⁵ is an initiative created by the Ministry of Higher Education and Research. It has been transformed into Comité pour la science ouverte (Open Science Committee) in January 2018.⁸⁶ The Open Science Committee together with the National Centre for Scientific Research (CNRS)⁸⁷ launched a tool, called DMP OPIDoR⁸⁸ designed to help French researchers create DMPs. DMP OPIDoR can be customised by institutions and scholarly communities. Furthermore, a wiki Cat OPIDoR⁸⁹ lists the services dedicated to research data in France. Doranum⁹⁰ is a website dedicated to providing information on research data to researchers. This project, supported financially by the Ministry, is also a part of the actions initiated by the Open Science Committee. Doranum associates the network of Urfist⁹¹ (regional training units for scientific and technical information) and the Institute for Scientific and Technical Information (Inist-CNRS)⁹² as well as the members of Segment 9 (training, skills and uses) and 10 (research data) at the Open Science Committee and representatives from the higher education and research community. The overall objective of the project is to adopt good management practices and sharing of research data by the scientific community.

In 2015, the Ministry of Higher Education and Research has also prepared a roadmap⁹³ for the country outlining seven actions that aim to support access to scientific knowledge. In June 2017, an Adviser on Open Science to the General Director of Research at the Ministry of Higher Education and Research has been appointed, and is currently drafting a new strategy that will promote OS in France. This plan will be made public in 2018. Meanwhile, a roadmap for 2018-2020 has been issued by the Ministry of Higher Education and Research in December 2017 describing concrete actions to be implemented in favour of OS in the framework of Open Government Partnership.⁹⁴

5. NATIONAL OR SECTORAL AGREEMENTS WITH PUBLISHERS

The Couperin⁹⁵ consortium is the association that gathers all the French research institutions and HEIs. It is considering negotiations concerning offset models with major academic publishers, aiming to balance the costs associated with maintaining subscriptions to hybrid journals with those associated to the payment of

⁸⁰ <http://unice.fr/> (available in French and English)

⁸¹ <http://revel.unice.fr/> (available in French)

⁸² <http://open.u-bordeaux.fr/journals/> (available in French and English)

⁸³ <https://www.re3data.org/search?query=france&countries%5B%5D=FRA> (available in English)

⁸⁴ <http://www.seanoe.org/> (available in French and English)

⁸⁵ <http://www.bibliothequescientifiquenumerique.fr/> (available in French)

⁸⁶ <http://www.bibliothequescientifiquenumerique.fr/evolution-de-la-bsn-vers-le-comite-pour-la-science-ouverte-coso/> (available in French)

⁸⁷ <http://www.cnrs.fr/> (available in French and English)

⁸⁸ <https://dmp.opidor.fr/> (available in French and English)

⁸⁹ <https://cat.opidor.fr/> (available in French)

⁹⁰ <http://doranum.fr/> (available in French)

⁹¹ <https://sygefor.reseau-urfist.fr/> (available in French)

⁹² <http://www.inist.fr/> (available in French and English)

⁹³ <http://www.enseignementsup-recherche.gouv.fr/cid66992/discours-de-genevieve-fioraso-lors-des-5e-journees-open-access.html> (available in French)

⁹⁴ <https://gouvernement-ouvert.etalab.gouv.fr/pgo-concertation/topic/5a1bfc1b498edd6b29cb10d4> (available in French)

⁹⁵ <http://www.couperin.org/> (available in French and English)

article processing charges (APCs) for OA publications. The consortium follows closely the DEAL project⁹⁶ model commissioned in Germany. OA agreements have been considered with Springer but no decision has been reached yet. A series of negotiations with Elsevier regarding this matter is set to start in 2018.

There are OA agreements that are under discussion between, on the one side, French publishers like Lavoisier⁹⁷, John Libbey⁹⁸, OpenEdition⁹⁹ and CAIRN¹⁰⁰, and on the other side the Ministry of Higher Education, Research and Innovation and Couperin. These discussions are taking place in the context of the support plan to French publishers¹⁰¹ initiated by the Ministry. In the form of national licenses for five years, this support plan aims to promote the transition of scientific journals to OA, with annual financial support from the Ministry of €500 000 for 2016 and €500 000 from 2017 to 2020. An agreement has been signed with EDP sciences¹⁰² on 29 OA journal titles.

The CNRS-IN2P3 project is part of Scoap3¹⁰³ (an initiative in the field of High-Energy Physics) since 2013. This project is a model of fair OA that converts high-quality subscription journals to OA access through the re-direction of subscription funds (the costs are mutualised between CNRS, CEA and French universities).

Regarding OA monographs, discussions are ongoing between OpenEdition, Knowledge Unlatched¹⁰⁴ and Couperin, aiming to make a number of e-books available in OA thanks to crowdfunding from libraries all over the world. In addition, an open e-textbook in history in French financed by academic libraries crowdfunding will be published in 2019. This project is led by Couperin, Versailles Saint Quentin University, Paris-Saclay University group, Numérique Premium publisher, Nouveau Monde publisher and the Paragraphe laboratory.

⁹⁶ <https://www.projekt-deal.de/about-deal/> (available in English)

⁹⁷ <https://www.lavoisier.fr/> (available in French)

⁹⁸ <http://www.jle.com/en/index.phtml> (available in English and French)

⁹⁹ <https://www.openedition.org/?lang=en> (available in English and French)

¹⁰⁰ <https://www.cairn-int.info/> (available in English)

¹⁰¹ <http://www.enseignementsup-recherche.gouv.fr/cid109876/plan-s.h.s-mesure-8-diffuser-plus-largement-les-informations-sur-la-recherche-en-s.h.s.html> (available in French)

¹⁰² <https://www.edpsciences.org/en/> (available in English)

¹⁰³ <https://scoap3.org/> (available in English)

¹⁰⁴ <http://www.knowledgeunlatched.org/> (available in English)

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https://archivesic.ccsd.cnrs.fr/sic_00794497v1 (available in French)

Libre accès à l'information scientifique et technique: Actualités, problématiques et perspectives. *CNRS Inist*

<http://openaccess.inist.fr/> (available in French)

OA in France (2016). *OpenAIRE*

<https://www.openaire.eu/oa-in-france-2> (available in English)

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<http://openaccess.couperin.org/> (available in French)

Rege, A. (2014). Accompany French universities in the implementation of their Open Access policy: the role of the GTA0 of Couperin. *Dispositifs du libre accès dans les universités*

<https://icoa2014.sciencesconf.org/37828/document> (available in French)

ANNEXES

Annex 1: List of interviewees

Table 1. Experts interviewed for data collection for a country profile.

| No. | Name and surname of the interviewee | Institution | Position of the interviewee | Date of the interview | Type of the interview |
|-----|-------------------------------------|-------------|--|-----------------------|---------------------------------|
| 1. | Marin DACOS | MHER | Open Science Advisor to the Director-General for Research and Innovation - Ministry of Higher Education, Research and Innovation | May 2018 | Written feedback ¹⁰⁵ |

Annex 2: Relevant legal and policy documents and their provisions

The tables below provide references to the full text of relevant laws, policies and guidelines adopted in France related to research and research results dissemination, open access to publications, copyright, IPR, and research data management, sharing and reuse, and other open science themes.

Table 2. Legal provisions related to dissemination of research results, open access to publications, copyright and IPR provisions adopted in France.

| Legislation and URL | Year of adoption | Articles and a summary of legal provisions |
|---|------------------|---|
| Dissemination of research results, open access to publications, copyright and intellectual property laws | | |
| Digital Republic Act: LOI n° 2016-1321 du 7 octobre 2016 pour une République numérique | 2016 | Article 30 ¹⁰⁶ : “I. When a scientific writing resulting from a research activity financed at least in half by endowments from the State, local authorities or public institutions, by grants from national funding agencies or by funds from the European Union, is published in a periodical appearing at least once a year, its author has, even after granting exclusive rights to a publisher, the right to make available in an open format, free of charge, digitally, subject to the agreement of any co-authors, the final version of the manuscript accepted for publication, provided that the publisher makes the latter available for free by digital means or, failing that, upon the expiry of a certain period from the date of first publication. This period is a maximum of six months for publications in the field of science, technology and medicine and twelve months for publications in the humanities and social sciences. The version made available pursuant to the first subparagraph may not be used for the purposes of a publishing activity of a commercial nature.” |
| The Code of Intellectual Property (Article L112-2) ¹⁰⁷ | 1994 | The code of intellectual property (Article L112-2) grants protection to authors for their scientific works even though the state is the owner of copyright for civil servants. Researchers nevertheless hold the ownership of copyright of their publications. The code of intellectual property (Article 111-1) ¹⁰⁸ creates an exception for them: the provisions of the articles do not apply to the agents (civil servants) who are authors of works. This peculiar status - not being object of the hierarchical authority - is specified in the Code of Education Article L 952-2 ¹⁰⁹ : researchers enjoy full independence and freedom of expression in the exercise of their teaching duties and research activities. |

¹⁰⁵ This document has been reviewed by Marin DACOS

¹⁰⁶ https://www.legifrance.gouv.fr/eli/loi/2016/10/7/ECFI1524250L/jo/article_30 (available in French)

¹⁰⁷ https://www.legifrance.gouv.fr/affichCodeArticle.do;jsessionid=11B7584405EBAEEE5B0F233808E5E7F1.tplgfr30s_1?idArticle=LEGIARTI000006278875&cidTexte=LEGITEXT000006069414&dateTexte=20171121 (available in French)

¹⁰⁸ https://www.legifrance.gouv.fr/affichCodeArticle.do;jsessionid=5908082164D79CE4E481E7F7BCEB8BD6.tplgfr30s_1?idArticle=LEGIARTI000006278868&cidTexte=LEGITEXT000006069414&dateTexte=20171121 (available in French)

¹⁰⁹ https://www.legifrance.gouv.fr/affichCodeArticle.do;jsessionid=11B7584405EBAEEE5B0F233808E5E7F1.tplgfr30s_1?idArticle=LEGIARTI000006525617&cidTexte=LEGITEXT000006071191&dateTexte=20171121 (available in French)

| Legislation and URL | Year of adoption | Articles and a summary of legal provisions |
|---|------------------|--|
| Electronic theses and dissertations (ETD), decree ¹¹⁰ (Article 25) | 2016 | Decree encourages green OA and recommends depositing in the national repository theses.fr. ¹¹¹ Article 25 stipulates that the thesis must be deposited in a repository called STAR ¹¹² managed by the National Bibliographic Agency. |

Table 3. Legal provisions related to research data management, sharing and reuse and exemptions for text and data mining in France.

| Legislation and URL | Year of adoption | Articles and a summary of legal provisions |
|---|------------------|--|
| Research data management, sharing and reuse, including copyright exemptions | | |
| Digital Republic Act: LOI n° 2016-1321 du 7 octobre 2016 pour une République numérique | 2016 | Article 30 ¹¹³ ensures the re-usability of open data derived from public funding: “II. When the data from a research activity financed at least half by endowments of the State, local authorities, public institutions, grants from national funding agencies or funds from the European Union are not protected by a specific right or regulation and have been made public by the researcher, the establishment or the research organization, then their re-use is free. III. The publisher of a scientific publication as mentioned, cannot limit the re-use of the research data made public as part of the publication.” (Here paragraph I is as described in Table 1 above.) |
| The Code of Intellectual Property | 1994 | Article L112-1 ¹¹⁴ : specifies that one of the objectives of public research is to promote open access to scientific data. Article L112-2 ¹¹⁵ : grants intellectual property rights to authors for their scientific works. Article L111-1 ¹¹⁶ : the provisions of the articles do not apply to researchers. |
| The Code of Education | 2000 | Article L 952-2 ¹¹⁷ : researchers enjoy full independence and freedom of expression in the exercise of their teaching duties and research activities. |
| The Free Re-use of Public Sector Information Act LOI n° 2015-1779 du 28 décembre 2015 relative à la gratuité et aux modalités de la réutilisation des informations du secteur public ¹¹⁸ | 2015 | Law stating that research data, which is considered public sector information, is free and re-usable (exceptions: protection of the national defence secret, data presenting risks for the public safety of the State or for the safety of the establishment, data protected by professional medical or business secrecy, or if the data are protected by copyright). |

¹¹⁰ <https://www.legifrance.gouv.fr/affichTexte.do?cidTexte=JORFTEXT000032587086> (available in French)

¹¹¹ <http://www.theses.fr/> (available in French and English)

¹¹² <http://www.abes.fr/Theses/Applications-pour-les-theses/STAR> (available in French and English)

¹¹³ https://www.legifrance.gouv.fr/eli/loi/2016/10/7/ECF1524250L/jo/article_30 (available in French)

¹¹⁴ https://www.legifrance.gouv.fr/affichCode.do?sessionId=31E1BC17B2C9B4C37E4299A676C44128.tplgfr42s_2?idSectionTA=LEGISCTA000006151273&cidTexte=LEGITEXT000006071190&dateTexte=20171207 (available in French)

¹¹⁵ https://www.legifrance.gouv.fr/affichCodeArticle.do?sessionId=11B7584405EBAEEE5B0F233808E5E7F1.tplgfr30s_1?idArticle=LEGIARTI000006278875&cidTexte=LEGITEXT000006069414&dateTexte=20171121 (available in French)

¹¹⁶ https://www.legifrance.gouv.fr/affichCodeArticle.do?sessionId=55731424E6551503B17CF7898B9C329D.tplgfr30s_1?idArticle=LEGIARTI000006278868&cidTexte=LEGITEXT000006069414&dateTexte=20171121 (available in French)

¹¹⁷

https://www.legifrance.gouv.fr/affichCodeArticle.do?sessionId=11B7584405EBAEEE5B0F233808E5E7F1.tplgfr30s_1?idArticle=LEGIARTI000006525617&cidTexte=LEGITEXT000006071191&dateTexte=20171121 (available in French)

¹¹⁸ <https://www.legifrance.gouv.fr/affichTexte.do?cidTexte=JORFTEXT000031701525&categorieLien=id> (available in French)

| Legislation and URL | Year of adoption | Articles and a summary of legal provisions |
|---------------------------------|------------------|---|
| Code of Research ¹¹⁹ | 2013 | Article L112-1: one of the objectives of public research is the provision of open access to scientific data |

Table 4. National and regional policies and guidelines related to open access to publications adopted by the National Research Agency and the National Rectors' Conference in France.

| Organisation, guideline or policy and year of adoption | Type of OA (Green, Gold), embargo periods by discipline and repositories recommended | Article/book processing charges (costs eligible/not eligible) | Cost for publishing in hybrid journals (eligible/not eligible) | Open licensing conditions |
|---|---|---|--|---------------------------|
| National policies and guidelines | | | | |
| The National Research Agency (ANR) open access policy, ¹²⁰ November 2007 | Green; 6 months for Sciences, 12 for Social Sciences and Humanities. This policy mandates deposit in HAL-SHS for Humanities and Social Sciences | N/A | N/A | N/A |

Table 5. National and regional policies and guidelines related to the broader concept of open science adopted by the National Research Agency and the National Rectors' Conference in France.

| Organisation and guideline or policy | Year of adoption | Topic | Summary of specific provisions |
|---|------------------|-------------------------------|---|
| National policies and guidelines | | | |
| ANR Policy for Ethics and Research Integrity ¹²¹ : fundamental principles to be adhered to in the exercise of research or research training activities | 2014 | Ethics and research integrity | <p>Research ethics:</p> <ul style="list-style-type: none"> – recognition of human dignity, respect for people, animals and the environment; – the absence of discrimination on grounds of age, sex, ethnic, national or social origin, religion or belief, sexual orientation, language, disability, political opinion, social or economic status; – the well-being of the community; – the honest and rational use of public funds; – the fair and equitable sharing of the benefits of research. <p>Scientific integrity:</p> <ul style="list-style-type: none"> – honesty; – loyalty; – reliability and rigor; – impartiality and independence; – objectivity; – transparency and openness; – justice; – responsibility for future generations of researchers |
| Rectors' conference and seven research institutions: CNRS, INSERM, INRA, INRIA, IRD, CIRAD, and Institut Curie | 2015 | Research ethics | <p>Compliance with legislative and regulatory provisions</p> <p>Reliability of the research work</p> <p>Communication</p> <p>Responsibility in collective work</p> <p>Impartiality and independence in evaluation and expertise</p> |

¹¹⁹ https://www.legifrance.gouv.fr/affichCode.do?sessionId=31E1BC17B2C9B4C37E4299A676C44128.tplgr42s_2?idSectionTA=LEGISCTA000006151273&cidTexte=LEGITEXT000006071190&dateTexte=20171207 (available in French)

¹²⁰ http://www.agence-nationale-recherche.fr/informations/actualites/detail/?tx_ttnews%5btt_news%5d=159 (available in French)

¹²¹ <http://www.agence-nationale-recherche.fr/en/about-anr/quality-and-ethics/policy-for-ethics-and-research-integrity/> (available in French)

| | | | |
|--|--|--|--|
| The National Charter of Research Ethics ¹²² | | | Collaborative work and cumulation of activities Training |
|--|--|--|--|

Table 6. Policies and requirements related to open access to publications of funders and other major actors from the research sector in France.

| Institution, type, policy and/or requirements and year of adoption | Type of OA (Green, Gold), embargo period and repository recommended | Article/ book processing charges (eligible/not eligible) | Cost for publishing in hybrid journals (eligible/not eligible) | Open licensing conditions |
|--|--|--|--|---|
| Cross-disciplinary | | | | |
| University of Angers mandate ¹²³ , 2013 | Green Deposit in the local repository. | N/A | N/A | None |
| Physical Sciences & Engineering | | | | |
| The French National Institute for computer science and applied mathematics (INRIA) OA requirements ¹²⁴ , 2013 | Green Requirement that all researchers and project teams deposit their publications in HAL-INRIA. In that context, only those publications, metadata and full texts that have been deposited in HAL are taken into account for project teams' activity reports (Raweb) and for their scientific evaluation. | N/A | N/A | Recommends using the Creative Commons Attribution licence (CC BY) for all deposits in HAL |
| Arts et Métiers ParisTech | Green Asks researchers to deposit in the local repository SAM. ¹²⁵ | N/A | N/A | None |
| Life Sciences | | | | |
| INRA Charter for open access to publications and research data, ¹²⁶ 2016 | Green Mandate to deposit the full text in the open archive ProdINRA. | N/A | N/A | None |
| IRSTEA since 1994 | Green Mandate for post-prints to be deposited in the institutional open archive; only these publications will be taken into account for the evaluation of researchers. | N/A | N/A | None |
| CIRAD ¹²⁷ | Green Mandate concerns publications in the latest author version, as well as grey literature. | N/A | N/A | None |
| IFREMER ¹²⁸ | Green Mandate asks for deposit in Archimer. Mandate concerns publications in the latest author version, as well as grey literature. | N/A | N/A | None |

¹²² <https://www.unilim.fr/recherche/2015/09/15/charte-nationale-de-deontologie-des-metiers-de-la-recherche/> (available in French)

¹²³ <http://okina.univ-angers.fr/politique-de-depot> (available in French)

¹²⁴ <https://www.inria.fr/en/news/news-from-inria/inria-champions-open-access> (available in English)

¹²⁵ <https://sam.ensam.eu/> (available in English and French)

¹²⁶ <https://www6.inra.fr/datapartage/Documents-de-reference/Charte-Open-Access-de-l-INRA2> (available in French)

¹²⁷ https://agritrop.cirad.fr/mention_legale.html (available in French)

¹²⁸ <http://archimer.ifremer.fr/html/acces-libre2010.htm> (available in French)

Table 7. Policies and requirements for research data management, sharing and reuse of funders and other major actors from the research sector in France.

| Institution, type and policy and/or requirements | Time limits for data deposit & retention and cost reimbursement | Repository/ data centre recommended | Data management plan (required/not required) & its cost | Data sharing exemptions |
|--|---|-------------------------------------|---|--|
| Life Sciences | | | | |
| INRA Charter for open access to publications and research data ¹²⁹ 2016 | N/A | ProdINRA | N/A | The legal and ethical rules prevailing must be respected, especially regarding the use of personal data or subject to secrecy. |

Table 8. Policies and requirements related to the broader concept of open science adopted by funders and other major research actors in France.

| Organisation, type and policies and/or requirements | Year of adoption | Topic | Summary of specific provisions |
|--|------------------|-----------------------|---|
| Cross-disciplinary | | | |
| Jussieu call ¹³⁰ | 2017 | Biblio-diversity | Development of innovative scientific publishing models, reform of the research evaluation system, investment efforts in open source tools, laws permitting TDM, accessibility of national and international infrastructures. These measures promote the preservation and circulation of knowledge over any privatisation of contents. |
| ORCID is implemented locally in the information system for IFREMER | 2016 | Researcher identifier | Recommendation to the researchers. |
| ORCID is implemented locally in the information system for the book division of OpenEdition | 2016 | Researcher identifier | Recommendation to the researchers. |
| Declaration ¹³¹ of the National Research Alliance for the Environment (AllEnvi) and the National Alliance for Life Sciences and Health (AvieSan), gathering the main French research institutions in health and environmental disciplines | 2017 | Preprints | Preprints (in biology) are a valid form of scientific communication; they should thus be taken into account in the processes of hiring, evaluation and promotion of researchers as well as in the management of laboratories and in project evaluation. |

¹²⁹ <https://www.inra.fr/datapartage/Documents-de-reference/Charte-Open-Access-de-l-INRA2> (available in French)

¹³⁰ <https://jussieucall.org/jussieu-call/#call> (available in English and French)

¹³¹ <https://www.allenvi.fr/actualites/2017/preprints-communication-scientifique-recevable/> (available in French and English)

Table 9. A list of some of the main repositories and data centres used by researchers in France.

| Title | Type (repository/ data centre) | Link |
|---|--|---|
| Cross-disciplinary | | |
| HAL | Main national repository with 120 sub-portals | https://hal.archives-ouvertes.fr/ |
| univOAK | Institutional repository of the University of Strasbourg | https://univoak.eu/ |
| HAL-UPMC | Institutional repository of the University Pierre et Marie Curie | http://hal.upmc.fr/ |
| RunMyCode | HEC (Business school), University of Orléans | http://www.runmycode.org/home |
| ZENODO | CERN multi-purpose repository | https://zenodo.org/ |
| Physical Sciences & Engineering | | |
| arXiv | Repository | https://arxiv.org/ |
| HAL-CEA | Repository: institutional HAL portal of CEA | https://hal-cea.archives-ouvertes.fr/ |
| HAL-Inria | Repository: institutional HAL portal of INRIA | https://hal.inria.fr/ |
| OATAO | Repository of Université Fédérale Midi-Pyrénées | http://oatao.univ-toulouse.fr/ |
| SAM | Institutional repository of Arts et Métiers ParisTech - Engineering | https://sam.ensam.eu/ |
| Life Sciences | | |
| Archimer | Institutional repository of IFREMER – Marine Research | http://archimer.ifremer.fr/ |
| ProdINRA | Institutional repository of INRA – Agricultural Research | http://prodinra.inra.fr/?locale=en |
| HAL-Inserm | Repository: institutional HAL portal of INSERM – Health and medical research | http://www.hal.inserm.fr/ |
| Coriolis | Data Centre – operational oceanography measurements | http://www.coriolis.eu.org/ |
| Social Sciences & Humanities | | |
| SPIRE | Institutional repository of Sciences Po – Political Science | https://spire.sciencespo.fr/web/ |
| Portal of the 'Centre national de ressources textuelles et lexicales' | Linguistic resources and tools for language processing | http://www.cnrtl.fr/ |
| Ortolang ('Open Resources and TOols for LANguage') | Repository of language data and tools for its processing | https://www.ortolang.fr/ |

Table 10. National and sectoral OA agreements with publishers in France.

| Organisation | Agreement year | Participating publishers | Participating research institutions | Specific conditions |
|--|----------------|--------------------------|-------------------------------------|--|
| National | | | | |
| Couperin and the Ministry of Higher Education and Research in the framework of the support plan to French publishers | 2017-2021 | EDP sciences | N/A | Access to the Full collection (29 titles) – pre-paid APCs for researchers affiliated to a French institution |