



UK Science & Innovation Network Country Snapshot

France

French science and innovation landscape

In 2019, gross domestic expenditure on R&D in France was 2.19% of GDP. The French S&I 2021 budget for public research is estimated at €24.1 billion (increase of 600M from 2020).

France ranks 12th in the 2020 Global Innovation Index, an increase of four places compared to 2019 when the country ranked 16th. In the European Innovation Scoreboard (June 2020), France is in the middle group of seven countries whose performance in research and innovation is above or close to the EU average (France ranks 10th).

France engages in a high level of international collaboration, comparable to that of Germany and the UK. The EU and US are France's top scientific partners globally. In Europe, France is behind the UK, Germany and Italy with a 2.6% share of world publications. In 2019, the rate of co-publications with at least one foreign institution exceeded 63% for France, comparable to that of the UK (64%) and higher than that of Germany (58%). France's first partner country is the United States, with more than a quarter of international co-publications. The UK is France's second largest partner, with a slightly higher share than Germany. As a collaborative partner in the EU's Horizon 2020 research and innovation programme, the UK ranked 3rd for France, whilst France ranked 5th as a collaborative partner for the UK¹.

Position of France in
2020 Global Innovation
Index:

12th

Position of the UK in
2020 Global Innovation
Index:

4th

French S&I Landscape and Actors

France has a well-developed, structured, funded science and innovation ecosystems. Funding is mostly awarded in the form of grants to relevant organisations awarded by the Inter-Ministerial Mission for Research and Higher Education (MIREs), as well as through competitive funding calls, awarded through public funding agencies such as the National Research Agency (ANR) and the Public Investment Bank (Bpifrance)². Other sources include commercial contracts, European and international funding sources, and revenue from IP or licensing agreements.

Public research is conducted in several research institutes categorised by the French government into 'science & technology' establishments and 'industrial & commercial' establishments e.g. Inserm for medical research, Inria for data and computer science, research & higher education institutes (mostly universities, hospitals), ministries and non-profit organisations e.g. Pasteur Institute. Since 2013, public research institutes and research & higher education institutes have been encouraged to merge to create large, regional centres of excellence (IDEX).³

France also hosts international agencies and research organisations such as the International Thermonuclear Experimental Reactor (ITER), the European Space Agency (ESA), UNESCO and the OECD. As of 2020, 618,600 people working in the research sector in France, i.e. 428,600 full-time equivalents (FTEs). 295,754 researchers, 28% of whom are women. Around 74% of

¹ <https://www.enseignementsup-recherche.gouv.fr/cid158045/l-etat-de-l-enseignement-superieur-de-la-recherche-et-de-l-innovation-en-france-n-14-avril-2021.html>

² <https://www.enseignementsup-recherche.gouv.fr/cid158045/l-etat-de-l-enseignement-superieur-de-la-recherche-et-de-l-innovation-en-france-n-14-avril-2021.html>

³ <https://www.enseignementsup-recherche.gouv.fr/pid24889/presentation-de-la-recherche.html>



research staff and 87% of research support staff are civil servants ('titulaires de la fonction publique'). Just over half of researchers have a permanent position⁴.

French S&I Strengths

In terms of numbers of publications and field weighted citation index, France has particular strengths in medicine, biochemistry, genetics and molecular biology, immunology and microbiology agriculture and biological sciences, applied maths and engineering, physics and astronomy, data and computer science including cyber and Artificial Intelligence (AI).

French S&I Priorities and Policies

Reforms to public policies have seen significant investment in R&D and innovation and increased international competitiveness through the Future Investments Programme (PIA in French). Now in its fourth phase, with €20 billion for 2021-2025, the PIA 4 is entirely dedicated to higher education, research and innovation. A large part of this budget is earmarked for strategic sectors of the future and national strategies. Four national strategies have already emerged or are about to: hydrogen, cybersecurity, quantum, digital education. Consultations have been launched for eleven other themes including digital health, bio-production, digitalisation of mobility, future telecoms networks. In 2017, President Macron also launched an ambitious programme to fund innovation by protecting the research and innovation tax credit (estimated to cost €6.2 billion/pa) and creating a €10 billion disruptive innovation fund from the disposal of state-controlled companies in the competitive sector whose interest (€300 million in a year) could be invested in innovative projects.

The French government introduced new 'multiannual research programming' legislation in 2021, which provides strategic support for 10-15 years.⁵ In addition to providing longer-term clarity, the government stated three main objectives for this legislation:

- to reinforce the funding capacity for research projects, programmes and laboratories;
- to increase the appeal of scientific careers and attract skilled researchers nationally and internationally;
- to improve France's industrial competitiveness by strengthening collaboration between public and private research.

UK and France Science & Innovation Cooperation

The UK research base enjoys strong links with France and continues to identify areas for bilateral and multilateral collaboration in several sectors including AMR, cyber, AI.

In 2018, the two countries developed a new researcher mobility programme – [Programme Hubert Curien/Alliance](#) – which to this day continues to fund research mobility for early career researchers, thus strengthening UK-France research collaboration⁶.

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⁴ <https://www.enseignementsup-recherche.gouv.fr/cid56383/grands-chiffres-de-la-recherche.html>

⁵ 'Vers une loi de programmation pluriannuelle de la Recherche', French Government, February 2019 (in French)

⁶ <https://www.uk.campusfrance.org/alliance-hubert-curien-programme>

