

Pierre-Bruno Ruffini, “France’s Science Diplomacy” *Science & Diplomacy*, Vol. 9, No. 2 (June 2020). <http://sciencediplomacy.org/article/2020/frances-science-diplomacy>

This copy is for non-commercial use only. More articles, perspectives, editorials, and letters can be found at www.sciencediplomacy.org. SCIENCE & DIPLOMACY is published by the Center for Science Diplomacy of the American Association for the Advancement of Science (AAAS), the world’s largest general scientific society.

France’s Science Diplomacy

Pierre-Bruno Ruffini

According to the most widely used criterion, nominal GDP, France is the seventh-largest power in the world. With 178 embassies and permanent representations, its diplomatic network is the third largest in the world. A permanent member of the UN Security Council, with a strong army, France can influence the affairs of the planet. It ranks fourth for the number of scientific Nobel Prizes and seventh in scientific publications. Finally, thanks to its culture, France ranks at the top of soft power country classifications.¹ The country’s influence goes beyond what its economic rank, size, and population would seem to predict. But what place does science occupy in its foreign policy? France is a country that builds on science diplomacy to bridge science, technology, and foreign affairs, and devotes to it substantial financial and human resources. French science diplomacy, however, is poorly known and rarely mentioned in the literature. This article therefore is devoted to a brief presentation, analysis, and evaluation of the science diplomacy of France.²

Pierre-Bruno Ruffini is a professor at the Faculty of International Affairs of the University of Le Havre-Normandie (France). He is a former Counselor for Science and Technology at the Embassy of France in Russia (2007-2010) and Italy (2010-2013). He is the author of “Science and Diplomacy – A New Dimension of International Relations” (Springer, 2017). He acts as an expert in the ongoing European research project “Inventing a Shared Science Diplomacy for Europe” (InsSciDE - H2020).

1/ The objectives and instruments of France's science diplomacy

The French approach to science diplomacy was officially laid out in the 2013 report *Science Diplomacy for France*.³ Strategic guidelines are re-issued every year by the Minister of Foreign Affairs during a general meeting which brings together in Paris in July all counsellors and attachés involved in cultural and scientific cooperation at French embassies. These efforts are made in conjunction with the country's research strategy, led by the Ministry of Higher Education, Research, and Innovation. In 2009, France adopted a National Strategy for Research and Innovation,⁴ which was enshrined in 2013 and is presented every five years by the government to Parliament. A law on multi-year research programming is currently being prepared, to come into effect in 2021.

Asserting France's presence in international arenas where global issues are debated, spreading influence through its famous research centers, supporting innovation by French companies, engaging the scientific community in research for development: these are the main objectives of France's science diplomacy. On the international scene, France aims to affirm its inclusion in the European research area, deepen its relations with countries with high scientific and technological potential, and strengthen its commitment to the developing world.⁵ France's science diplomacy includes a "diplomacy for science" component, which aims to increase the mobility of researchers and the attraction of foreign talent and supporting international cooperation. It also includes a "science for diplomacy" component, when science and research help to achieve the country's geopolitical objectives. The latter are reaffirmed each year by the President at the Ambassadors' Conference and they are the structuring drivers of France's foreign policy: defending democracy, human rights, and the rule of law; promoting a cooperative approach to global challenges, especially on climate change and health – in which France is a committed actor, as evidenced by its recent initiatives in response to the Covid-19 pandemic; supporting the Sustainable Development Goals; defending multilateralism; strengthening the Franco-German axis in European affairs; and maintaining a privileged relationship with countries in the South, particularly French-speaking former colonies.

For implementing the national strategy of science diplomacy, the public authorities – the Ministry of Foreign Affairs, first and foremost – use instruments to attract foreign researchers, promote cooperative research endeavors, and maintain influence through the promotion of the French language and the diffusion of ideas and norms.

Attraction

Attracting foreign talent in order to train the political, economic, and scientific elites of tomorrow falls under a broad vision encompassing university and science diplomacy. In November 2018, the “Welcome to France” action plan set an ambitious goal of attracting 500,000 foreign students by 2027. To support this policy, many publically funded scholarships are awarded each year on a competitive basis. After declining by around 40% over the last ten years, the number of grants awarded has stabilized since 2017 at around 10,000 beneficiaries. This however, is only half the number supported in the United Kingdom, and a third of those in Germany.

The “Initiatives of Excellence” (IDEX) programs, which aim to create world-class research universities, are part of this effort to attract or retain foreign researchers. Similar strategies are also implemented by universities and public research institutes such as the National Center for Scientific Research (CNRS, one of the world’s leading research institutions) and the National Institute of Health and Medical Research (INSERM). The National Research Agency manages a program called “Hosting high-level researchers.” A residence permit valid for up to 4 years was established in 2016 for such purposes.

Two programs for hosting foreign researchers stand out because of their strong political and diplomatic dimensions:

- “National Program of Assistance to the Emergency Reception of Scientists in Exile” (PAUSE): this program is open to researchers fleeing wars and dictatorships. From 2017 to 2019, it benefited 137 refugee scientists, mostly from the Middle East and Mediterranean countries. This program is fitting for a country viewed as an initiator of the enlightenment and modern-day human rights.
- “Make Our Planet Great Again”: following the US withdrawal from the Paris Agreement on climate change in June 2017, France immediately invited researchers, students, entrepreneurs, and other to join it to lead the fight against global warming. To date, over 200 scientists and international students have been hosted in France under this program, which is one of the manifestations of France’s renewed influence in climate diplomacy.

Finally, several programs mix science and innovation, such as the NETVA program which since 2014 has supported 32 young French start-ups for the conclusion of technological partnerships in the United States,⁶ and the “French Tech Ticket” which since 2015 has supported the installation in France of more than a hundred foreign start-ups. Together with the “French Tech Communities” that network startupper of the digital ecosystem in almost a hundred cities

around the world, they aim to raise the image of France as being at the forefront of innovative digital technology.⁷

Cooperation

As international scientific cooperation continues to develop, international publications by French researchers involving at least one foreign co-author have increased steadily. Co-publications with foreign institutions account for 58% of France's total publications (2016). The USA is France's leading scientific partner: over the period 2012-2016, it accounted for 26.3% of international co-publications of France, followed by the United Kingdom and Germany (17.8% each).⁸ Government-to-government agreements with many countries support scientific cooperation efforts. With the competitive "Hubert Curien programs," the Ministry of Foreign Affairs finances the outward mobility of researchers with a view to launching new bilateral or regional scientific cooperation. Such partnerships have been established with some 60 countries.

Scientific cooperation within Europe is particularly fruitful. In recent years, France has received approximately 10% of the funding for the European Framework Programs for Research and Development (nearly €1 billion a year), behind only Germany and the United Kingdom.

In the field of humanities and social sciences, a traditional focal point for French research, science diplomacy takes advantage of 27 joint research institutes abroad, working under the dual authority of the Ministry of Foreign Affairs and the CNRS. The only such network in the world, it develops research programs relevant to host countries (e.g. political sociology in contemporary Turkey; religion in Russia). Another area of French excellence, archeology, occupies a special place due to its long-standing proximity to diplomacy. Excavations are funded by the Advisory Commission for Archaeological Research Abroad, under the Ministry of Foreign Affairs. 159 archaeological missions have been financed in 2018 in approximately 60 countries, including training for host country nationals. France's efforts to repatriate to Africa art and cultural artifacts acquired as a result of colonialism fall under science diplomacy applied to cultural heritage.

Influence

"Diplomacy of influence" is often referred to in France's official discourse. The promotion of the French language, especially through the *Organisation Internationale de la Francophonie* and related institutions, is one of its major levers, as is the broader diffusion of ideas and norms. *Expertise France*, the French international technical cooperation agency, disseminates standards, working methods, and best practices

in about a hundred countries. With the support of embassies, the *France Alumni* digital platform allows to unite, inform and guide foreign students who studied in the French higher education system. Another lever of influence is the hosting of 28 international organizations, including ten with missions at least partially in the field of science and technology, such as UNESCO, ITER (an international project to develop fusion energy), or the European Space Agency. More generally, France aims to weigh in on the major issues of multilateral science diplomacy such as global health and climate change. The strong mobilization of its diplomatic apparatus played a major part in the achievement of the Paris Agreement on climate.

2/ Organization and means

In the capital

Two ministries are at the forefront of France's science diplomacy: the Ministry of Europe and Foreign Affairs (MEAE), which leads the national diplomacy, and the Ministry of Higher Education, Research, and Innovation (MESRI), in charge of the development and conduct of research policy. Without downplaying the role of the latter, which contributes funding for scientific cooperation and supports international bottom-up research initiatives, it is the Ministry of Foreign Affairs that uses science diplomacy to advance national interests through science and research on the world stage. It is this ministry to which we must look in order to understand the organization and means of France's science diplomacy.

Within a Directorate-General of the Ministry of Foreign Affairs, the impetus comes from the Directorate of Culture, Academic, Research, and Cooperation, and more specifically from a sub-directorate entirely dedicated to higher education and research. In this body, approximately 40 people work on issues related to science and technology, and oversee all science diplomacy activities, in concert with other ministerial directorates for matters pertaining to the economy, development, or global public goods. The sub-directorate coordinates the network of scientific counsellors and attachés posted in the embassies.

Since 2010, France has had an Ambassador delegate for science, technology, and innovation, whose mission is to promote French scientific and technological excellence and to highlight the national research strategy at the international level.⁹

At French embassies

In 2019, the scientific and technological network of the Ministry of Foreign Affairs included five counsellors, 71 attachés, and 70 junior officers (“international volunteers”) or other staff working on higher education and research issues, with a third fully specializing in science and research-related matters. They were distributed across 62 different countries, with a strong presence in the European Union (38 staff), the United States (20), and China (15).¹⁰ These staff are employed by the Ministry of Foreign Affairs but are not career diplomats; the vast majority are seconded to this ministry by their university or research institution.¹¹

The posting of science counsellors and attachés at embassies is part of the long historical tradition of French cultural action abroad, starting at the end of the 19th century by the creation of French cultural centers and schools and the birth of the network of *Alliances françaises*.¹² The first scientific attaché position was created in 1955¹³ and a network deployed beginning in 1963. In some countries, there is a “service for science and technology” at the embassy, with a scientific counsellor heading a team of one or more scientific attachés, junior officers, and administrative staff. In 2019, such services were found in five countries (Germany, Japan, Russia, United States, and the United Kingdom). At the embassies in other countries, science and research issues are addressed by one or more scientific attachés or international volunteers, who are in most cases also in charge of university cooperation and are in the embassy’s cultural service under a counsellor for cooperation and cultural affairs.

Relative to other countries, the human resources devoted to science and research at French embassies are important. This is first of all due to the historical size of the diplomatic network of France. But it is also due to the importance given to cultural cooperation, which is understood to dovetail with the scientific domain, as described below. But with the cutbacks in public expenditure, this network has drastically contracted, like all of the other sectors of diplomatic activity. While today there are five services for science and technology, there were ten such services in 2010.

3/ Particularities and paradoxes of France’s science diplomacy

The significant role of public authority

France is an administratively centralized country where public authorities exercise much influence over economic and social life. The relationship between

the state and science has been historically strong, important milestones being the creation of the CNRS in 1939 and the Gaullist support in the 1960s for the space and nuclear industry, key sectors in foreign policy. The gross domestic spending on R&D amounted to 2.20 % of GDP in 2018, of which 0.76% was public expenditure.¹⁴ Universities are almost all public. Impulses from the top tend to dominate in the mix of top-down/bottom-up research initiatives.

However, there is a paradox: the importance of public funding for research and the centrality of public institutions do not mean that scientific issues are always properly integrated by policymakers and political elites. Certainly, the political world and the world of research interface, through institutions such as the Prime Minister's Strategic Research Council or the French Academy of Sciences, which advises the government. But these bodies are not designed to quickly respond to high-level scientific advice, as it is practiced, for example, by the Chief Scientific Adviser to the Foreign and Commonwealth Office in the United Kingdom or the Science and Technology Adviser to the US Secretary of State. Such positions do not exist in France, where scientific advice and evidence plays a smaller and less systematic role in informing policy. The Delegate Ambassador for Science, Technology, and Innovation and the Counsellor for Education, Higher Education, Research, and Innovation in the office of the President do provide advice at the highest executive level. But what seems to be missing is a continuing relationship with science.

Still, the advice of renowned scientists is solicited on a case-by-case basis. In response to the COVID-19 pandemic, a scientific council was set up "to inform public decision-making in the management of the health situation associated with coronavirus." A COVID-19 Analysis, Research and Expertise Committee was established by the President of the Republic to advise the government on treatment and testing. Could this experience raise public decision-makers' awareness of scientific and technological issues, and reverse the judgment of a former Secretary of State in charge of Higher Education and Research who claimed that "the place of science in society is not understood – and therefore not handled – by the greater part of the political class in France"?¹⁵

Areas of privileged presence and influence

The geographical priorities of France's science diplomacy say the most about its underlying geopolitical intentions. Priorities can be fluid, as the Ministry of Foreign Affairs targets countries with whom France might explore new avenues of cooperation or strengthen existing ones. But over the longer term, the geographic orientations are driven by the aim to develop scientific relations with leading

scientific countries, whether developed or emerging, with particular attention paid to Europe and the countries of the global South.

France, one of the founding countries of the European construction, actively supports the European research policy as a tool for integration. The relationship with Germany has occupied a privileged place since the Franco-German treaty of 1963. In the Horizon 2020 program, German teams are present in seven out of ten projects involving at least one French team.¹⁶ A Franco-German university was created in 1997 as a network, with gathers today more than two hundred institutions of both countries. And it was at the French Embassy in the Federal Republic of Germany that the first-ever scientific attaché position was created.

French science diplomacy is also oriented towards the global South. Prestigious research centers such as the Pasteur Institute, the Research Institute for Development (IRD), and the French Agricultural Research Centre for International Development (CIRAD) have 69 offices in 47 countries, including 39 in the global South. By increasing research capacity, and supporting the development of regional centers of expertise, France continues to cultivate its traditional zone of influence inherited from the colonial period in French-speaking Africa and the Indian Ocean. This commitment is part of a wider strategy of influence in the South, combining humanitarian action, efforts toward political stabilization, and a fight against brain drain and radicalization.¹⁷

Science diplomacy, in the shadow of cultural diplomacy?

France's culture enjoys worldwide acclaim. It is its hallmark and the major asset of its soft power, a complex alchemy combining the arts, lifestyles, flavor of language, intellectual productions, and the values of individual freedom. The strength of French culture translates directly into the strength of its cultural diplomacy, which has historically been at the heart of its diplomacy of influence.

The importance of the "cultural" in embassies is visible in their organization. The creation in 2010 of the French Institute, a public operator of foreign cultural action, has confirmed and reinforced the degree to which the vector of culture, in all its forms, is a primary pathway of influence. In the national budget, science diplomacy is included in the program "Cultural diplomacy and influence" (which had a €700 million earmarked in 2019, with €95 million for "Higher education and research"). Actions relating to science and research are part of a broader, all-inclusive approach. In different situations or for different countries, the best mix of artistic, linguistic, scientific, and academic cooperation must be designed. This is reflected in the contemporary definition of French diplomacy, described as overarching or "global" diplomacy.¹⁸

But putting culture at the forefront poses a risk for French science diplomacy, in that it might remain in the shadow of cultural diplomacy. In the embassies, and with the exception of the few countries where a fully functioning scientific service has been maintained, it is the cultural service, headed by a cultural counselor, which deals with science and technology issues. But these counselors, “whose profile is still often predominantly cultural, tend to devote themselves more spontaneously to the cultural policy of the post.”¹⁹ On another note, thus positioned in the orbit of culture, science diplomacy may be less able to address innovation, a key part of its mission, and one that would bring it closer to the economic service of the embassy. This atypical proximity in the embassies between the scientific field and the cultural field is unique to France and contrasts with the organization of other countries, which engage diplomatically in research and innovation through specialized entities: the United Kingdom's Science and Innovation Network is separate from the British Council and the German Houses of Research and Innovation are separate from the Goethe Institute. Switzerland's Swissnex outposts connect the country with the world's innovation hubs, and this model might serve as a source of inspiration for France.

4/ Conclusion

With its scientific and diplomatic assets, is France able to cope with the current health emergency? The COVID-19 pandemic has revealed the challenges that states face in coordinating their actions and highlighted the need for better science-policy interfaces. In early April 2020, France launched the “COVID-19 – Health in Common” initiative to address the health crisis in the most vulnerable countries in Africa, the Indian Ocean, the Caribbean, and the Middle East. Later in April, France's President Emmanuel Macron presented the “Access to COVID-19 Tools,” a global initiative on diagnostics, treatment, and vaccines at a conference which included several heads of state and government as well as major global health stakeholders. Through its Minister of Foreign Affairs, France has also launched the idea of an international science-policy interface for infectious diseases modeled on the Intergovernmental Panel on Climate Change (IPCC). In May 2020, France proposed with Germany an initiative for the European recovery from the coronavirus crisis, which includes an increase in European R&D for vaccines and treatments and for the establishment of common European standards for health data interoperability. These initiatives are in line with the principles which guide the diplomatic action of France: multilateralism, solidarity with the poorest countries, and support for an European response.

France has long been very visible in international fora for major health, environment, and security issues. But it is through its investment in the field that France's science diplomacy is distinguished from that of its foreign counterparts. In many capitals, French scientific counsellors and attachés are more numerous than those posted in the embassies of other world powers. Within a diplomatic network which assigns great importance to cultural action, the commitment to science diplomacy is an essential lever for France, a great country of culture, to be recognized also as a great country of science. **SD**

Endnotes

1. See annual rankings of *Soft Power 30*. <https://softpower30.com>
2. Particular thanks are due to Jean-Claude Arditti, Christophe Bonté, Caterina Carta, Léonard Laborie, Min-Ha Pham, and two reviewers who commented on a first draft of this article.
3. Ministry of Foreign Affairs – Directorate General of Global Affairs, Development and Partnerships (2013), *Science Diplomacy for France*.
4. Ministry of Higher Education and Research (2010), *National Research and Innovation Strategy*.
5. In the budget of the state devoted to external action, the “program 209” is directed towards the objective of “Solidarity to developing countries”, which includes all of the former colonies of France.
6. New Technology Venture Accelerator (NETVA), www.netvafrance.com/-Homepage-English-.html
7. See *La French Tech*. <https://lafrenchtech.com/en/>
8. OST - Science and Technology Observatory (2019), *Dynamics of scientific production in the world, in Europe and in France, 2000-2016*, Hcéres, Paris, pp. 73-75.
9. The position has been occupied since its creation by Professor Catherine Bréchnignac, a physicist, who was Permanent Secretary of the Academy of Sciences from 2011 to 2018.
10. These data were obtained in an interview with Martine Roussel at the Ministry for Europe and Foreign Affairs.
11. In addition to the S&T diplomatic network, some research institutions such as CNRS and INSERM, as well as some major universities, have their own representative offices abroad.
12. For a general presentation, see Philippe Lane (2013), *French Scientific and Cultural Diplomacy*, Liverpool: Liverpool University Press.
13. Inès Inserra (2017), *La diplomatie par la science de la France – Le rôle et la place des attachés scientifiques en ambassades 1955-2015*, unpublished master's thesis, Sorbonne Université, p. 24.
14. OECD (2020), Gross domestic spending on R&D (indicator). doi: 10.1787/d8b068b4-en (Accessed on 23 June 2020) <https://data.oecd.org/rd/gross-domestic-spending-on-r-d.htm>
15. Interview with Secretary of State Thierry Mandon, “Les évolutions de la recherche dans le monde” (2018), *Hérodote*, 1, 168, p. 93.
16. Ministry of Higher Education, Research, and Innovation (2017), *Higher Education and Research in France – Facts and Figures*.
17. Speech by Clélia Chevrier-Kolačko, Deputy Director of Culture, Academic, Research, and Cooperation at the Ministry of Foreign Affairs, October 5, 2017. www.youtube.com/watch?v=hgjhAbbv8M.
18. See the report MAEDI 21 - *Global diplomacy for the 21st century* (2015).
19. Ministère de l'enseignement supérieur et de la recherche et Ministère des affaires étrangères (2014), *La coordination de l'action internationale en matière d'enseignement supérieur et de recherche*, p. 100.