

Mutual Learning Exercise (MLE) on National Strategies and Roadmaps for International Cooperation in R&I

Meeting 1 (Paris, 3-4 June 2019)

The approach of France in international cooperation for Higher Education, Research and Innovation

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France – Key figures in R&I

2,27% of GDP
dedicated to R&I

604 700 persons
involved in R&I
(277631 researchers)

14 500 PhD degrees
delivered every year

4th position in terms
of patents (EU patent
office)

7th W-W position in
terms of scientific
publications

CNRS 1st institution
W-W in terms of
scientific publications

56,7% of
international
copublications

First non-anglophone
host country

40% foreign PhD
students

Main public stakeholders

20 Research institutions (« organismes de recherche »)

- Created after WW2 to tackle thematic priorities : CNRS (all fields) ; CEA (nuclear energy/physics/materials) ; INRIA (ICT and robotics), INSERM (Health), IRD (development research); IFSTTAR (transport); CNES (Space), INRA (agronomy); IFREMER (marine research), etc.
- Receive gvt priorities via 3-year contracts specifying resources and objectives

67 Universities

- Autonomous since 2013
- In a process of regroupment and polarisation (fewer, bigger and more specialised)
- Keen to extend their international presence in EU (European universities) and abroad (off-shore campuses, local antennas, joint universities)

Funding bodies

- MESRI (core funding of universities and RPOs + limited operational budget)
- MEAE (funding of international structures, CfP, prizes, stipendia)
- Agence nationale de la recherche (calls for proposals in Research)
- BPI France (CfP and loans in Innovation)
- Interministerial programmes (cf. Programme Investissements d'Avenir - PIA)

Among the recent structural/institutional changes

Fostering centres of excellence in the HE landscape (iDEX / ISITE)

- Aim to create a number of massive, excellent institutions ;
- International strategy is among the selection criteria
- Either generalist profile (IDEX : Sorbonne U, Strasbourg, Aix-Marseille, Bordeaux...) or with thematic focus (I-SITE) - (18 at this point)
- Funded by the Programme d'Investissements d'avenir

New strategy towards international students

- Better hosting conditions of students
- Administrative simplification (visa, social security, housing)
- Government stipends for international students x3
- Accreditation of universities (Label « Bienvenue en France »)
- Financed through increased tuition fees for international students

New framework law on R&I

- Based on international benchmarking
- Features: Pluriannual approach; greater compatibility with EU context; identification and massive funding of priority areas; more flexible administration.
- First draft to be presented in Fall 2020

France – Presence abroad

Network of the Foreign Ministry

- Overall network of 6000 members of personnel
- Science counselors present in 121 countries
- Dedicated Science departments in 6 countries
- 27 research centres in SSH (IFRE) based (through their antennas) in 40 countries

RPOs

- CNRS (34 joint labs)
- Institut Pasteur (33 institutes in 26 countries)
- Other main RPOs with representation bureaus and joint labs abroad: CIRAD, INRA, INRIA, IRD, INSERM, etc.
- Around 80 joint HE structures

Basis of the R&I strategy

Stratégie nationale de la Recherche (2015)

- Rationale: scientific excellence; competitiveness; tackling global challenges; bolstering technological sovereignty.
- Identifies 10 priority fields of action (societal challenges), compatible with the EU context
- International cooperation is mainstreamed
- To be updated in 2020 by a new framework law

Thematic national strategies

- Based each on parliamentary mission
- Designation of one RPO as coordinator
- Examples : Health, Energy, Sustainable development, recently AI, tomorrow Quantum technologies

... keeping in mind that the FR R&I ecosystem is built on a bottom-up approach with scientific excellence as the main driving factor.

Among the flagship initiatives

Artificial intelligence

- « AI for Humanity » strategy
- Strategic Partnership with Germany
- Special cooperation with Japan and Canada

Quantum technologies

- Ongoing parliamentary mission based on international benchmarking (incl. US, China, Canada, Japan)
- New national strategy expected in Fall 2019 (in synergy with EU flagship initiative)

Environment and climate change

- Follow-up of the United Nations Framework Convention on Climate Change (active role in the Intergovernmental Panel on Climate Change (IPCC))
- Make our Planet Great Again Initiative

Current priorities: geographical focus

Industrialised and emerging countries

- Europe
- G20 countries

Focus on Africa

- A refounded Francophonie
- Increased outreach towards non French-speaking countries
- Multi-faceted approach: development research, academic mobility, research cooperation (under the umbrella of strategic dialogue)

Special relationship with Germany

- Treaty of Aachen
- Principle of prior coordination
- Working together for a stronger Europe

Interaction with intl. partners: Joint S&T cooperation committees (JSTCC)

Features

- 20+ countries with global cooperation agreements and regular JSTCC meetings (cf. SFIC exercise on this topic)
- Based on the Knowledge Triangle (HERI)
- Always in link with the Ministry for Europe and Foreign Affairs

Expectations

- State of play but most importantly new perspectives
- Roadmap with thematic focus, based on gvt priorities and stakeholder expectations (recent examples: Russia, China, Australia)
- Concrete deliverables (new structures, joint calls for proposals, strategic alignment in multilateral fora, etc.)

→ Long-term perspective with short-time goals and regular evaluation

Tools to implement the strategy

Towards FR stakeholders

- Contracts between RPOs and the government (e.g. defining objectives on an international level as indicators) = OBLIGATIONS
- Programmation of ANR and BPI (e.g. bilateral agreements with other funding bodies, earmarking funds towards a given partner country) = OPPORTUNITIES
- Mobility funding for collaborative research (Partenariats Hubert Curien)
- International benchmarking and rankings

With international partners

- S&T agreements and treaties, referring to roadmaps (often interministerial)
- Bilateral joint / coordinated calls
- Multilateral platforms: G7 (meeting in Paris on 20 June)/G20, Carnegie Group, etc.
- Negotiation on EU level (international dimension of Horizon 2020)
- Diplomacy for Science : political initiatives

Among the R&I challenges for France on the international level

Critical mass and strategic convergence

Synergy of bilateral approach with EU context

International expansion vs. financial limits

Avoiding « brain drain » of excellent researchers

Fostering breakthrough Innovation & 'Unicorn' companies (no GAFA in Europe...)

Protecting intellectual property

Defending French/European values (e.g. in Environment, AI, Robotics...)